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Essentials In Successful Incubator Management

HERE are a great many interesting points in the successful manof water; (3) care of the eggs.

ed. The thermometer is put inside the incubator and carefully watched until it reaches 103 F. At this point, the damper is so regulated with the screw that it is about one-half inch above the top of the opening in the top of the heating drum. One should: not follow the directions of the manufacturer too blindly; try to see why certain regulations are necessary and then work them out as the occasion demands. In the way of heat regulation one-half inch may not be the right height with your particular machine. It takes about six hours to tell whether your regulation has been proficient or not in maintaining the proper temperature. So before the incubator is started with eggs, it ought by good rights

to be put into operation for at least tent and it will be necessary to cut ide will unite with the water and form success with its attendant bumper

nor desirable. It matters little whether tween 103 and 105 degrees F rather it is quite easy for the chick to peck raising of poultry. the machine is a hot water or hot air than between 101 and 103 degrees F. his way out. from the source of heat should be high- conducive to the best hatches. er than the source of heat. Some small

By I. J. MATHEWS

of these dull points and in the hopes make wave your hands wildly in the like eighty per cent of water and some that what I may say will help others air and bemoan the loss of your hatch. of this is evaporated before the sub- incubator in reverse order from the in their management of the important The chances are that the germs are stance of the egg enters the body of way it was taken out. details connected with the artificial not harmed very much. Take out the the young chick. hen, I will give a few reminders that tray and sprinkle upon the eggs water During the last three days, however, eggs should be tested with the tester may eliminate losses with others. I warmed just so the hand can be borne water should always be placed below believe the three most important con- in it. The evaporation of the water the egg trays. The purpose of this wasiderations in running an incubator will cool the eggs down; cold water ter is to soften the egg shell and if are: (1) heat regulation; (2) the use would kill the germs and any other this small precaution is neglected, very opaque spots, the germ was weak but of the quick evaporators such as alco- often there will be many chicks that if a small disk can be seen from which

drum after incubator has been clean- warm up the incubator to a certain ex- is provided in the air, this carbon diox- fourteenth day, examine the eggs

Some Features of Heat Regulation.

hol, ether, etc., would be undesirable will be found dead, for they did not thread-like strands seem to radiate, the have enough vitality to pierce the hard germ is developing normally. Bury the knowledge that the proper tempera- Heat at 103 degrees F. until the be- unsoftened shell. It is well known weak-germ eggs—they will smell—but ture at which to start the incubator is ginning of the third week. At this that when eggs are being incubated, the infertile ones may be laid aside to 103 degrees F. In most of the ma- time, the life processes have begun in there is quite an amount of carbon be cooked, chopped up and given to chines, the lamp is trimmed and put the chicks and they will throw off dioxide being given off into the air in the youngsters when they emerge from under the hot air or water heating some heat from their bodies. This will the incubator compartment. If water their limestone stronghold. About the

along the back of the tray may be removed and by lifting the front of the agement of an incubator and if blocks you may have under the legs, the humidity of the incubator air but tray a very little, the remaining eggs some of the most essential of these are they do more harm than good.

its use seems scarcely necessary unmay be gently turned toward the back dulled, a lower percentage of hatch is If you should go into the incubator der ordinary farm conditions. The with the palm of the hand. The eggs likely to be the penalty. The past room some morning and find that the hatching of the egg is a drying-out removed may then be replaced in the weeks I have been sharpening up some heat was up to 108 degrees F., don't process as the egg contains something opposite side of the tray. It is a good scheme to put the tray back into the

At the end of the seventh day the provided with the machine. If the egg looks perfectly transparent, it was probably infertile; if there are round

> again for dead germs; remove them. In the developing germ, the head can be plainly seen and some movements of the chick will be noted.

When the time of hatching draws near do not get over-anxious and continually fuss with the incubator. It is by far the best method to leave the eggs entirely alone and keep the incubator closed after turning and cooling the eggs on the eighteenth day. At this time the temperature tends to rise and may be allowed to go to 104 or 105 degrees but if it goes higher flame should be reduced.

The price of carelessness is a poor hatch but proper heat regulation, the judicious use of water and careful handling of the eggs will go a long way toward spelling



If you Want Chicks Like These in May Get Busy Now.

twenty-four hours. This will give an down the heat supplied by the lamp, a weak acid. The shell of the egg is crop of downy chicks. opportunity for the heat to have been In addition, at night the incubator tem- mainly lime. Lime is attacked and Many people make the mistake of the next morning owing to the cooler acid has three days to work on the carefully leveling up their incubator atmosphere. If any fluctuations aplime in the egg shell and break it. The old saying, "The early bird gets with a level. This is neither necessary pear, regulate so that they will be be-down. After three days of this action, the worm," certainly applies to the one, the part of the incubator away as the higher temperature seems to be

The Use of Water.

perature is likely to go down and rise torn down by acids, hence the carbonic

Handling of the Eggs.

management is the handling of the in May and June, and the chicks do inclination is necessary so that the hot There are diverse recommendations eggs. In the first place, the trays not have time to mature before cold water or hot air will circulate. If the as to the use_of water with the incu- should be filled as full as possible and, weather, are fed at a loss all winter machine is entirely level there will be bators. With the hot air incubator it peculiar as it may seem, the trays will until spring, when they lay a few eggs. no circulation. Reason ought to be is almost a necessity under ordinary hold more if the eggs are not placed in According to the United States Govenough to show that the machine does conditions to use water. The best and rows. After twenty-four hours, the ernment Census Report, the average not have to be perfectly level. The safest way to do this is to place a pan eggs ought to be turned twice each production is from sixty to seventy. hen sometimes has some of her eggs of water below the egg trays. This day, morning and night, but be careful. The commercial poultryman, using on top of each other and every other water will evaporate slowly and keep not to turn the eggs after the hands artificial means of hatching and rearway imaginable. Leveling is a labor- the air saturated. Some incubators are have become soiled with attending to ing, hatches from February to April. ious and needless job; kick out the provided with a hydrometer to register the lamp. To turn easily, the eggs

EARLY CHICKS.

Most farmers depend on the hen to rear their chicks, hence cannot control One of the ticklish parts of incubator the time of hatching. She usually sits

(Continued on page 148).

The Michigan Farmer

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DETROIT, FEBRUARY 3, 1917

CURRENT COMMENT.

So-called expert opin-After the War. ion regarding the industrial conditions

which will obtain after the close of the European war are quite as illuminating as are similar opinions with regard for a normal development of agriculto the exciting causes of that deplorable conflict. For long we have been told that the manufacturers of this country would necessarily suffer from the keen commercial competition of the belligerent countries when the military issues were finally settled, and time after the close of the European now we are informed by Hon. Charles Denby, former Consul-General at Vienna, that this competition will be more keenly felt along agricultural lines because of the fact that the injured and maimed and those who are over or under age for profitable em- The Live Stock of each year the U.S. ployment in commercial industries will be able to contribute to increased agricultural production in a manner which will make their competition felt the United States. This opinion was advanced at the midwinter meeting of the Michigan Bean Jobbers' Association which is reported in another column of this issue.

A thoughtful analysis of the situation, however, brings assurance that Mules have, on the other hand, in- every farmer should undertake for neither the American manufacturer creased to 101 per cent of last year's himself a study of costs of production nor the American farmer need become panic stricken by the prospect of foreign competition along either manufacturing or agricultural lines. In their based on last year's estimate. Cattle greed for war profits manufacturers who have been engaged in the munitions trade have, to a large extent, neglected the needs of the domestic trade. estimate being 99.7 per cent of last The American farmer is the American year's estimate. manufacturer's best customer, and he has been repeatedly warned that in or- decreased 33,000, mules have increased der to secure needed goods for spring delivery he must do his spring shop- 000, and other cattle 1,037,000, while ping early, owing to the condition of sheep have decreased 142,000 and the material market. There is a pros- swine 313,000. The average value per pect that needed goods may not be head in all departments of live stock available in this line as they are not has increased so that the aggregate available at the present in many lines, value of each division is greater than including staples of wearing apparel last year. In horses this increase is and house furnishings.

country are going to expand their business rapidly and as a result they will require a large amount of manufactured material of almost infinite variety. Thus, the American manufacturer's best market, now almost bare of immediately available goods, will be a stable source of business for American manufacturers who do not forget in their pursuit of war profits that their domestic market is their most promising source of permanent prosperity. This fact, together with the opportunities offered for the development of new manufacture to each with \$6,020,670,000 on January 1, 1916, and increase of \$664,350,000 or 11 per cent.

These figures are encouraging, particularly as related to cattle, although the fact must be taken into consideration that the data from which these estion that the data from which these estion that the data from which these esting source of business for American manufacturers who do not forget in their pursuit of war profits that their domestic market is their most promising source of permanent prosperity.

This fact, together with the opportunities offered for the development of new was a contributing factor to the free data. Salt saccessful ratics and treoccupied practically the same territory.—The British have also captured trenches north of the river Somme and made successful raids near Neuville and northeast of Festubert.—In Mesopotamia the British and Turkish troops continue their fight for the possition of Kut-el-Amara. Last week the Turks succeeded in wresting trenches north of the river Somme and made successful raids near Neuville and northeast of Festubert.—In Mesopotamia the British and Turkish troops continue their fight for the possition of Kut-el-Amara. Last week the Turks succeeded in wresting trenches north of the river Somme and made successful raids near Neuville and northeast of Festubert.—In Mesopotamia the British have also captured trenches north of the river Somme and made successful raids near Neuville and northeast of Festubert.—In Mesopotamia the British have also capt

Russia. The territory occupied by the ployed and at good wages. duction might occur in exceptionally standpoint. favorable crop years. It must be remembered that the best and most ing made almost weekly in the large injured including several policemen cheaply improved virgin soils of the live stock markets, and market stuworld have already been brought to a dents believe that the top has not yet state of agricultural productivity. The been reached. Upon a careful analysis effort will be made to secure from the ed by some economists that this popu- the feeder of well-bred live stock. lation will be doubled in the next three hundred years at the present rate of increase. This means a constant demand for increased production of conthe line of sufficient magnitude to care ture. In our own country the domestic demand is taking an ever increasing proportion of our product. Apparently if the home market is adequately developed our manufacturers will be kept busy in supplying it for a long war, and our farmers will continue to feel the difficulty of supplying a home demand of increasing magnitude with high-priced products produced under difficult labor conditions.

During the early part production. Census.

greatest increase in percentage, the his locality. present estimate being 103 per cent as other than milch cows have increased 2.6 per cent over last year, while sheep have fallen off in number, this year's

Expressed numerically, horses have 46,000, milch cows have increased 660,-\$24,843,000, in mules, \$26,030,000, in and house furnishings.

With an era of better prices for agricultural staples which is sure to continue for some time, and we believe in swine \$221,669,000. The aggregate for a long time even after the close of the European war, the farmers of this country are going to expand their businesses.

\$24,843,000, in mules, \$26,030,000, in tute the chief activities. The Germans is unched another offensive before Verduu last week and succeeded in carrying some of the trenches recently recovered from the Kaiser's forces. The formal successfully counter attacks and re-occupied practically the same territory, are going to expand their businesses of \$66,885,020,670,000 on January 1, 1916, tory.—The British have also captured the proposes of \$66,480,000, in tute the chief activities. The Germans the chief activities and the chief activities. The Germans the chief activities and the chief activities. The chief activities and the chief activities. The Germans the chief activities and the chief activities. The Germans the chief activities and the chief activities. The Germans the chief activities and the chief activities. The Germans the chief activities and the chief activities. The Germans the chief activities and the chief activities. The Germans the chief activities and the chief activities and the chief activities. The Germans the chief activities and the chief activities and the chief activities. The Germans the chief activities and the chief activities and

grain markets upon the receipt of any of the country are more numerous gal measures.

General Lyautey, war minister of France, has been made solely responsible for the execution of the policy of as they may relate to the prospect of as they may relate to the prospect of as of course, greatly stimulated by the country, as well as of So far as foreign agricultural compe- foreign demand, although domestic tition is concerned, there would appear consumption has not greatly fallen off to be little to fear except through the with the existing high prices which development of rich new country, such have prevailed during recent months, as is available in large areas only in due to the fact that labor is well em-Russia. The territory occupied by the central powers has long been intensively farmed, and it is not a reasonable supposition that a large surplus of agricultural products can be produced for export in countries which have of agricultural products can be produc- appears to be bright for live stock prolong had difficulty in producing suffi- the further sacrifice of breeding stock cient for their own needs, except as a upon the altar of present high prices surplus along some line of special pro- would seem inadvisable from every

state of agricultural productivity. The been reached. Upon a careful analysis white population of the world is in the future would seem to be as bright creasing at a rapid rate; it is estimat- for the producer as the present is for

> Studying Farm Anderson's address at Costs. ing which appeared in past

siderable annual magnitude all along the last issue, illustrates the complicain the business of dairying in which so for the initial day many factors must be taken into consideration. It is thus apparent that in arriving at even approximate farm costs in this branch of agriculture it is

Department of Agri- an official study of the problem has culture publishes an been undertaken to arrive at fairly deestimate of the numbers and value of pendable figures regarding the actual live stock in the country. This esti- cost of producing milk upon the averby the farmers of the world, including mate is compiled from reports of cor- age dairy farm. Similar official studrespondents and agents throughout the ies would undoubtedly be profitable in country and is thus a fairly dependa- other departments of farm production. ble, index of conditions. This report Wherever they have been undertaken shows a slight decrease in the number valuable results have been attained, of horses, the estimated number being but conditions are perhaps less con-99.8 per cent of last year's estimate. stant in other lines of production, and estimate. Milch cows have made the under the conditions which obtain in

The European War.—The Russians have pierced the line of the Teutonic allies over a front of nearly two miles on the Bukowina-Roumania frontier. Berlin admits the withdrawal of troops in this district. Numerous prisoners Berlin admits the withdrawal of troops in this district. Numerous prisoners and a considerable amount of munitions fell into the hands of the Russians.—In northwestern Russia on the Riga sector much fighting continues. Following the recent heavy drive here by the Germans the Czar's forces have succeeded in checking the advance and now the contest appears to be a draw.—On the Macedonian and Italian fronts artillery engagements and operations by small raiding parties constitute the chief activities. The Germans launched another offensive before Ver-

foreign trade, particularly in South marketing of stock of all kinds, and is that the very contrary is true, a state of affairs being created by the tension exhibited by the stock and It is thus doubtful whether the herds establish the justification of their ille-

sources of the country, as well as of the army. The object of this move is the army. The object of this move is to end all army politics. Great Britain has decided to arm her

merchant marine with heavier guns. She will uphold the neutrality of the United States by removing all but one of these guns at Halifax when vessels

National.

Employes of sugar refineries in Brooklyn are on strike and when shifts were being made early this week a riot was started by the strikers which last-

present legislature a law prohibiting the manufacture and sale of liquor

as the present is for without a provision for a referendum.

At a meeting of publishers in Chicago the prediction was made that by reason of the present high prices of print paper, the one-cent newspaper the Live Stock meet-

ing which appeared in the last issue, illustrates the complications which arise in the making of an accurate estimate of the cost of producing dairy products. Perhaps in no other department of farming is it so difficult to arrive at accurate costs as with the largest attendance on record in the largest attendance at the largest attendance on record in the largest attendance at th

FARMERS' INSTITUTES FOR FEBRUARY.

County Institutes.

costs in this branch of agriculture it is necessary to make a more comprehensive study and analysis of the contributing factors than is the case in almost any other department of farm production.

For this reason it is fortunate that an official study of the problem has been undertaken to arrive at fairly dependable figures regarding the actual cost of producing milk upon the average dairy farm. Similar official studies would undoubtedly be profitable in other departments of farm production.

Wherever they have been undertaken valuable results have been attained, but conditions are perhaps less constant in other lines of production, and every farmer should undertake for himself a study of costs of production under the conditions which obtain in his locality.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—The Russians have pierced the line of the Teutonic allies over a front of nearly two miles

Monroe, Feb. 7; Raisinville, Feb. 8; Milan, Feb. 26-27.

Tuscola Co., Unionville, Feb. 1; Akron, Feb. 2; Reese, Feb. 3;, Vassar Feb. 5; Fostoria, Feb. 6; Mayville, Feb. 7; Kingston, Feb. 8; Cass City, Feb. 9. Feb. 9.

Lapeer Co., Columbiaville, Feb. 1. Isabella Co., Shepherd, Feb. 2-3. Eaton Co., Mulliken, Feb. 2; Dimondale, Feb. 24.

dale, Feb. 24.

Montcalm Co., Greenville, Feb. 3;
Coral, Feb. 5; Howard City, Feb. 6;
Six Lakes, Feb. 7; Vestaburg, Feb. 8;
Stanton, Feb. 9; Carson City, Feb. 10;
Sheridan, Feb. 12.
Ionia Co., Danby, Feb. 5; Clarksville,
Feb. 6; South Boston, Feb. 7; Orleans,
Feb. 8; Orange, Feb. 9; Ionia, Feb.
23-24

Feb. 8; Orange, Feb. 9; Ionia, Feb. 23.24.

Washtenaw Co., Salem, Feb. 5; Cherry Hill, Feb. 6; Ypsilanti, Feb. 7; Northfield, Feb. 8; North Lake, Feb. 9; Chelsea, Feb. 10; Willis, Feb. 12; Saline, Feb. 13; Manchester, Feb. 15.

Jackson Co., Concord, Feb. 5; Parma, Feb. 6; Devereaux, Feb. 7; Tompkins, Feb. 8; Rives, Feb. 9; Layton's Corners, Feb. 10; West Liberty, Feb. 12; Napoleon, Feb. 14; Michigan Center, Feb. 15; Grass Lake, Feb. 16; Waterloo, Feb. 17.

Shiawassee Co., Henderson, Feb. 7; New Haven, Feb. 8; Perry, Feb. 9.

Oakland Co., Ortonville, Feb. 10; Waterford, Feb. 12; Highland, Feb. 13.

Livingston Co., Cohoctah, Feb. 12; Hamburg, Feb. 13; Brighton, Feb. 14; Fowlerville, Feb. 15; Pinckney, Feb. 16; Gregory, Feb. 17.

Arenac Co., Sterling, Feb. 20; Arenac, Feb. 21.

What Is the Matter With Our County Fair

HAT is a question propounded to himself by many a thoughtful his county fair last fall. It is plain to keenest and the most active. those who have given this matter serfair-no matter what part of the counquately accomplishing the purpose for which it is supposed to be held.

agricultural education, not necessarily knowledge, however gained.

course in the agricultural college or school have secured the basis of a fair agricultural education through the me- principal states of the Union. dium of the agricultural papers and the publications available through the state experiment stations and the Department of Agriculture at Washington. To such men there is little in the county fair, as it is usually conducted, to attract a deep interest. In the majority of instances, owing to the character which the county fair has been permitted to assume, it is regarded as a good place for the politicians to strengthen their fences and as an excellent opportunity to make a break in the monotony of everyday life. As to educational features, the average county fair is marked by their absence in any except in that rudimentary degree which follows the simple competition of exhibits. There are a number of causes for this condition of affairs, the principal ones being here enumerated: Causes of Decadence of County Fairs.

(1) A board of directors who intrust the active management of the fair to officials who have neither an adequate conception of the real purposes of a fair nor the ability to master the they ought, as an educational influence problems which stand between them in the order named, the first one will fair is bound to slip backward in popuand the successful acquisition of such be found to be more uniformly existent lar favor when it commences to be

(2) A board of directors which repor adjacent to the town where the fair

of secretary around among prominent and it is not long before the director- tion, the members of which, or at members of the association regardless of the qualifications possessed for discharging the duties of the office.

(4) A policy which requires the fair to show a big net profit, giving no consideration to the fact that a fair held on a real educational basis, confers on the residents of the county something, the value of which cannot be expressed in terms of dollars and cents.

(5) Making the so-called midway a too prominent feature of the fair and in using too little discrimination in the character of attractions permitted to occupy it.

(6) A lack of knowledge, on the part of the management, relating to securing for the fair the sort of publicity that will arouse interest in it and secure for it a large attendance; but more especially the attendance of such residents of the county as are likely to be interested and benefited by the educational features which should

Educational Fairs Would be Appreciated.

There is scarcely a county in which agriculture is the predominating indus- best farming element in the county. loss for the cause of the failure of quantities of muck clung to the roots try in any state, where a fair conduct- Under such conditions the fair rapidly their annual fairs to compare favor- of the shrubs that were thus snagged ed mainly on educational lines would assumes a character which destroys ably with those of another association out, and these were hauled onto an not be appreciated. Farmers, their its influence in an educational way. in a neighboring county, although fav- adjoining field. wives and their children are eager to avail themselves of every scrap of county with and near a very large city, This fair has gone back a little each ter this dirt will cramble off these knowledge which might tend to make had four city men on its board of six year for several years. Exhibits have roots when they are drawn to a pile to their labors more productive or to im- directors. The year the writer attend- decreased and the attendance has be- be burned. The muck which crumbles prove the conditions surrounding their ed the fair of this association, it was come smaller than it was ten years off will fertilize the field with humus work, in a degree never before no- an undoubted success from a financial ago although the county has experienc- and nitrogen. The ashes from the

By H. L. ALLEN

ious attention that the average county tioned as contributing to the failure of hibits representing the products of the dents of towns adjoining the town in a county fair to enlist the interest of farms in the county, indeed the exhib- which the fair was held. And that try it may be located in-is not ade- those persons who wish to take ad- its of that character in the agricultur- town, it may be stated, is located clear A county fair should present to the found holding back about every county inferior character that they would bet- wonder that the people in the towns farmers in whose midst it is held, a fair in the country except in the few ter have been left at home, so far as located in distant parts of the country practical demonstration of the value of cases where a survey of conditions by their possession of any educational have lost interest in this fair? the practical minds in the management value was concerned. college or school education exclusively, has resulted in the abandonment of Every member of the county fair dibut that which has come from practical old methods and the adoption of new rectorate should be a progressive farm- nearly every fair association, at one Most of the farmers of this period guesswork. It is the result of personal by the condition of his own affairs; To the successful administration of who have not had the advantage of a observation regarding county fair man- one who appreciates the responsibilithe office of secretary, more than to agement and its results at a large ties of the position and who will give any other one thing, connected with number of such fairs in five of the generously of his time and his brains; the management, depends the success

The Fair Should be Directed by Farmers.

concerns, all for sale; the wmidway oc- was held. The second vice-president Three or four of the six causes men- cupied more space than any two ex- and two of the directors were resivantage of every possible opportunity al, horticultural and stock breeding de- to one side of the county, at one of its to add to their knowledge, may be partments were so few and of such an boundary lines, to be exact. Is it any

first vice-president, secretary, treasurer and four of the six directors were farmer on his way home from persons whose interest ought to be exhibits of industrial and mercantile residents of the town in which the fair

A Competent Secretary is Essential. Cause number three is one which

ones. This statement is not based on er of some executive ability as shown time or another, has run up against. one who knows the value of a fair's of the fair; and the men who possess educational work and who is capable the qualifications which a good secreof doing "team-work" with his associ- tary must have are not found in large If we consider the causes which are ates to make the educational features numbers in any county. With a constantly changing board of directors and a new president nearly every year as is the case in the average fair association, the work of mapping out the course of the association and pushing the plans outlined to a successful conclusion devolves largely on the secretary

To be successful in the highest degree a secretary must not only have a practical knowledge of the different branches of agriculture and live stock breeding but he must be a man who quickly and naturally makes and holds acquaintances; he must have exceptional ability; in other words, be a good organizer; he must have or be so constituted as to develop a fair understanding of the value of publicity to his association and the proper course to pursue to get publicity through such channels as will be productive of the greatest amount of good.

(Continued next week).



Hauling Muck Covered Snags onto an Adjacent Cleared Field.

mainly responsible for the failure of of the fair as prominent as possible. our county fairs to occupy the position commencement the fair organization number of men the board of directors resents only that part of the county in may have started out right; but later, consists of, they should represent thorin far too many cases, a little ring has oughly every part of the county. There (3) The custom of passing the office the election of directors and officers of a rich farming state, a fair associa-

Sectionalism is Fatal to the Fair-

Now comes cause number two: Any than any one of the others. In the known as a "one-town fair." Whatever been formed, petty politics is played in is today, in one of the richest counties ate fails to be representative of the least some of them-profess to be at a



Open Ditch for Draining Swamp Along the Side of a Cleared Field.

form of interest among the class of tion buildings were largely filled with and it was found that the president, able to grain because of the excessive

It is not surprising that the failure from the city—was very large. The population. Some remarks made by for this field.

CLEARING AND DRAINING LAND IN SOUTHERN MICHIGAN.

Clearing land for farm purposes has been a leading occupation in Michigan for many years. Although the forest line has been steadily pushed back there are still numerous cat holes, small-swamps, and wood-lots in the southern counties to be cleared and drained. These are generally composed of muck or rich loam and, when properly cleared, are the most valuable land we have for farm purposes.

There were two small swamps on my farm in Oakland county and last fall I decided to drain and clear one of them. I had tried to drain it two years ago by use of a six-inch tile. This was entirely inadequate to carry off the water and in September I dug an open ditch along my line fence and let the water out.

I would not recommend an open ditch across a field, but where it can be dug along the side so as not to interfere with cultivation it is sometimes preferable to tiling. We dug this ditch entirely by use of plow and scraper, using a side scraper for the bottom of the ditch.

We then cut all large trees and dynamited the stumps. We drew the small shrubs out with team and log chain, and hauled all loose parts of stumps out on a stone-boat. Large

One fair association located in a ored with greater natural advantages. After freezing and thawing all winviewpoint. The attendance-mostly ed a more than healthy increase in brush when burned, will furnish potash

of the average county fair manage- horse racing-which is a legitimate persons on the grounds within hearment to fill this all-prevailing desire feature of a well conducted fair—was ing of the writer led to an examina- muck swamp, I will seed to timothy for knowledge results in a very mild given undue importance; the exhibition of the list of directors and officers and alsike clover. Hay will be prefer-



The Bull Comwittee Pull" The Tractor That Does Things

Here's what a Big Bull Tractor did for J. H. Algard, Watertown, S. D.

Plowed 221/2 acres in 261/2 hours.

Hulled clover for 36 days at a total expense of \$7 per day, including hired help. Mr. Algard received \$50 a day, leaving him a net profit of \$43 a day or \$1548 in all.

Hauled a forty-inch separator, weighing 8000 lbs., 14 miles into the country and returned with another the same day.

Dragged 100 miles of road for which the County Road Commissioner paid Mr. Algard \$50.00.

Ran the whole season, doing many different kinds of work, without costing a penny for repairs.

Kerosene or Gasoline

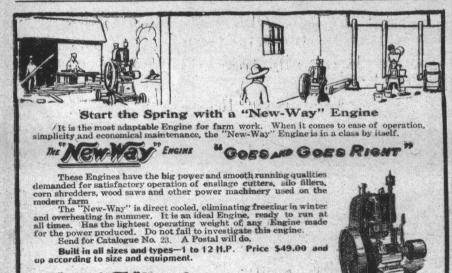
You get, in the "Big Bull," a sturdy light-weight, self-steering tractor that delivers full 10 H. P. at the draw-bar and 20 H. P. at the belt, that is most economical in fuel and upkeep cost and is backed by a real service.

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clear and drain a swamp, but it can farmer, comparable to this. best be done in the fall of the year the lowest spot of the swamp and drainage effected in that way.

Oakland Co. C. W. MELICK.

LILLIE FARMSTEAD NOTES.

Harvesting the Ice Crop.

did crop this year, ten inches thick and price. clear blue ice. A little ice is a great favorable. Good ice, splendid sleigh- ple in with their brawn and muscle. ing and cold weather to store.

Losses in Live Stock.

avoid them in the future. We, how "rotten spot" is in this plan. ever, occasionally have losses. Just ever hear of such a thing? Yes, I have. do not belong. amount to a considerable sum.

Fixing the Price of Farm Products.

are we to determine the cost of pro- but throw them if he does nothing. duction when this cost varies in differ-

percentage of nitrogen in muck as com- ent communities, in different years, pared to the phosphoric acid and pot- and even with different individuals, ash. If a grain crop were to be plant- the same year in the same community." ed there, a considerable quantity of That this is the great question I will phosphoric acid and potash would be admit. But now I believe we have facilities which if properly utilized will give a very satisfactory answer to this

In many counties we have agriculmost any crop when sufficient potash tural agents, and we should have them and phosphoric acid are used. The and will eventually have them in every quantity of each to be used depends county, not only in this state but in every state. Why can they not ascer-On account of the excessive quan- tain the average cost of production of tity of humus in swamp land, it is very various crops in their respective couneasily worked when properly cleared, ties? Farms could be selected in and is very valuable for farming or various communities, and accurate cost trucking. I consider an acre of my data kept under that year's conditions. cleared swamp worth three acres of These men are competent for such work and it seems to me that they It requires a lot of hard work to could do nothing for the benefit of the

The findings of all the counties in when farm work is slack. It is well the state could be compared and averworth the time of any farmer who has aged in such a way that the price such a swamp to fit it for cultivation. would be fair to the farmer and to the If there is not sufficient fall for drain- consumer. Why not? The consumer age a well may sometimes be dug in could find no fault with this because he ought to be willing that the farmer have a fair profit. When this price is fixed let the farmer control the market by refusing to sell below this minimum price. You say that some farmers must sell, and others would sell regardless of the price. But this would We have just completed putting up affect the market but little, if a good the ice for another year. It is a splen- per cent of the farmers stuck to the

Is there anything unlawful about luxury in hot weather. In fact, almost this? Not a thing that I can see. Don't a necessity. When we do not ship automobile manufacturers and furnisweet cream it is not absolutely a ture and implement manufacturers, necessity, but after one has used it a and clothing manufacturers, and in fact few years it is thought to be a neces- all manufacturers, employ experts to sity, but of course it is not, people ascertain the cost of production? And used to get along without it, in fact, don't the various manufacturers fix the never thought of storing ice for sum- price by adding a profit to the cost? mer use. The cost, however, is so And hadn't they ought to have the small that any farmer can afford this right to do so? Certainly. The farmer luxury. The principal cost is the ice don't want those manufacturers to sell house, and we are reducing this cost at a loss. The whole foundation of to a minimum by utilizing one of the business would crumble if they did. silos as an ice house. Of course, if Likewise the whole structure of agrione only had one silo this could not culture, the foundation of all other busbe done, but having three we can al- iness is bound to crumble if someways utilize one for ice. One silo is thing is not done so the farmer don't always fed out before time to store ice have to work for nothing and board and by the time to fill with our sweet- himself. He has done that very thing corn stalks the weather has changed many, many times in the past and it is so ice is not so necessary. This year high time that individually and collecice hauling came when everything was tively they put a little business princi-

The agricultural agent is the man to do this work of ascertaining the cost. don't think people realize how A district committee of county agents much live stock they lose. They for- could ascertain approximate conditions get about it. They have grown up with for a district, a state committee for the idea that "They that have must the various districts could determine lose," and as there is no use in crying cost for a whole state. A meeting of over "spilled milk" they forget their states could fix the minimum price for losses as soon as possible and try and the whole country. Tell me where the

We don't want this work carried on this week a yearling heifer choked by any present farmers' organization. herself with the tie chain. Did you They are not big enough. All farmers We don't need new It doesn't happen very often, but it has laws, so we don't need any farmers, or happened before, and it will happen laws, and we don't need any farmers' again. This heifer was in the same or agrarian political party. All we want stall, tied in the same way as always. is a farmers' or producers' business She and eighteen others have stood in organization, for it is purely a matthese stalls, tied in the same way, all ter of business, and very important winter and others have stood in these business, too, not only for the farmer same stalls previous winters and noth- but for the whole people. The perpeting of this sort ever occurred before. uation of American manhood and wom-I hope it never will again. She must anhood is at stake. Do we want this have stepped back in her stall too far country to eventually become a landwhen she went to lie down, and the lord country, with the farmer and farm chain around her neck pulled in such a laborers, mere serfs working for a pitway as to strangle her. At any rate, tance? Do we want the farmers' wives she was dead when discovered in the and daughters of this country to be morning. I am of the opinion that if compelled to labor in the fields, as they we had reliable information of loss of do in some foreign countries. If such live stock by accident alone, it would conditions ever come it will be because the farmers of this country allow it. They can prevent it.

A friend writes me that he was We now have a market commissiongreatly pleased with my farm notes of er. He has ability and energy. Give a previous issue, relative to the farmer him power, give him authority, furnish fixing the minimum price of products, him money, let him work this problem based on the cost of production and a out. He can do it. Don't throw bricks reasonable profit. But he writes, "how at his head if he does a good thing,"

COLON C. LILLIE.

Applying the Rural Credit Act By JAMES N. McBRIDE

flocks of sheep kept within a fair de- er, are the vast areas of cut-over land, gree of profit. There is a prevailing the ample credit capacity and under opinion now that pasturage for sheep the law available to the southern Michis not profitable on these high-priced igan farmer, and the necessity and lands, or possibly that dairying and profit in sheep raising. sheep do not work well together. Whatever the facts or reasons are the sheep have gone from these farms largely, romantic and possibly the heroic that and at the present time the sheep industry offers exceptional profits. There is an approaching wool shortage and lambs have reached record prices this winter. Under existing conditions there is the opportunity for the re-establishment of the sheep industry and with it some of the glamor and romance that attached to the range country and sheep years ago in the west.

An Opportunity for Young Men.

This is the opportunity of the young come too late to participate in the ormight yet be a participant in a modiover lands which are adapted to sheep, of their holdings valuable. and the aforesaid young man who has of the correspondence school, "be one his hands. Every rural neighborhood shop, because the farm was not big enough for he and his brothers.

Let this young man find in the northern counties a tract of cut-over land adapted for sheep. If he does not know where, or has hazy ideas, men like W. F. Raven, of the Agricultural College, could give him a world of information on sheep possibilities and lands. Let us assume that he finds a tract of two or three sections that can be easily fenced and with good pasture and water conditions, and secures an option on the land. Then his next move is to find, for example, ten farmers who have ample winter feed benefit. and shed room on their home farms and who want a safe and profitable investment in the sheep business. Let us assume that these men buy this price and buy 100 ewes each to put on and sheds put up sufficient to care for spring storms.

A Practical Arrangement.

The young man who promotes the enterprise should have a salary of say \$1,000 per year, and devote his time to the care of the sheep, during the pasturage season, and also be staked for some portion of the land which the farm to pasturage, and back.

careful figuring it would seem that er which will be reasonably effective. this investment would pay for itself in I don't know but what you may alten or fifteen years, and also a five per ready have been harping on that subcent dividend, without any actual in- ject, and the whole trouble may be what was obtained under the rural er has surely been very slow to take credits act, and which would be paid on an expense which does not point to from the earnings of the enterprise, very prompt recompense. It seems to annually, on the amortization plan. It me, however, if nothing has been done Is also a fair presumption that in the that something should be done to meantime the property would double arouse sentiment toward the prevenin value, although in any enterprise no tion of these big losses which are ocset rules for each and every one can curring too frequently. be set down. Undoubtedly there will

HERE are many farms in older be cases of more, and others of less, settled sections in Michigan efficiency and interest and attention to where formerly there were large detail. The outstanding facts, howev-

The Pioneer Live Stock Men.

There is a certain element of the in early days caused the younger sons of Scotch and English landlords to make their way into the west, also into Australia, and start those countries along the lines of live stock raising. These men had a great deal to do with bringing in good stock and improving flocks and herds. In fact, a great deal of the impetus to western live stock development came from this type of men.

It is at this point that the northern man in the neighborhood who has counties need young men who have capital back of them and capacity to iginal notion of pioneering but who build up the live stock lines to which Northern Michigan is well suited. It fled way. The facts to be hitched up is more than probable that extensive together are the farms needing sheep land owners would be financially interin the southern counties, for winter ested so that the land would be had feed, the northern counties with cut- at a low price to make the remainder

The average well-to-do farmer in a taste for pioneering and a liking for Michigan would find his vacation very sheep. One starting point would be much more to his liking to stop for a for the young man who has standing at few weeks on his property, to live in home but who also has the instinct to the ranch guest chamber, and renew get out for himself, and in the language his acquaintance with the newer lands. There is not much enjoyment for the who directs" and uses his brains with farmer at the so-called vacation idling places, which are expensive and unsathas this type, which may be even tem- isfying. In these ranch homes would porarily trying himself out in some be found the renewal of a saner outdoor country life than is elsewhere offered the young man of live stock tastes, and at a price that would compensate. To the northern country he would bring an interest in live stock matters that would prove immensely profitable. To the railroads there would be increased traffic and the upbuilding of a country now not well occupied nor settled. It would simply be the union of genius, men, money and opportunity. Address W. W. Flanagan, Secretary Rural Credits Board, Treasury Bldg., Washington, D. C., for advices as to using this act for your

FIRE PROTECTION.

I went out in the country tonight tract of land and secure the purchase and witnessed the burning of a dairy barn. Fourteen or fifteen head of catthis land. The land should be fenced tle and two horses and a quantity of hay and ensilage, beside the buildings, the sheep in case of early summer or were lost. The thing that impressed me is the utter lack of fire protection on all, or practically all, farms. No one would think of being so poorly protected in the city where a like investment is at stake. Is it indifference on the part of the farmer, or failure to recognize its possibilities on the part of the manufacturers of fire-fighting appliances? To be sure, it presents would ultimately make him a share- a more difficult problem in the country holder in the enterprise. The ewes than in the city, on account of freezwould probably be for some time win- ing. Obviously, in order to be adetered and the lambs dropped on the quate, appliances must be automatic home farm, and shipped by rail from and non-freezing, and appliances of that nature are at present prohibitive Such a plan would probably involve as regards price. It makes one feel an initial outlay of \$30,000, or \$3,000 like getting busy right away and findper man who participated. From some ing a means of protection for the farm-

vestment of outside funds beyond with the people themselves. The farm-

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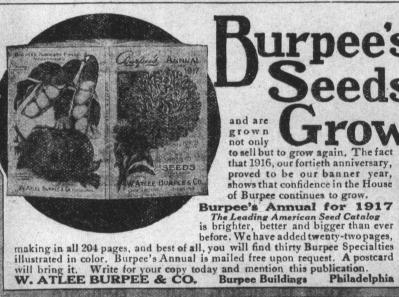
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Mich. Bean Jobbers' Meeting

ers as well as jobbers.

In his opening address President W. future use. J. Orr. of the Bean Jobbers' Association, reviewed the history of the rela- subject of an interesting address by tions between the organized bean grow- Hon. Charles Denby, former consulers and bean jobbers during the past general at Vienna. He voiced the contwo seasons, noting the fact that in clusion, after a careful study of the sitboth seasons the bean market had kept uation, that official statistics available ahead of the minimum price demands from the bean-producing sections of of the growers, notwithstanding the Europe are not reliable and should not fact that the price asked for the 1916 be given too serious consideration in crop seemed ridiculously high when estimating the available world crop. named. He attributed the strong up- He diverged from his subject in a most ward trend of the market to early interesting manner to comment upon frosts following an unfavorable grow- the conditions which brought on the ing season, which reduced the yield European war, and the industrial rebelow earlier estimates.

ed, and recommended action by the agricultural lines would be more keen deplored the misleading and false maimed, the very young and the very statements which have been circulated old could aid in agricultural producby the "shorts" and advocated the pas- for productive labor along other comsage of a law by the legislature pro- mercial lines. viding for threshers' reports to the Hon. Frank curate data as to the acreage and yield to the Secretary of State and the Secdate each year.

Speaking of the future of the market potatoes at \$1.50 and wheat at \$2. As to complaining consumers, he said they present prices. would be welcomed to the country to assist in producing crops and equalize more fairly the distribution of labor which at this time seems very necessary. For the coming year he prophesied a larger acreage of beans and a crop of good quality so far as disease conditions are concerned. This predicof good clean seed is available this year, and that notwithstanding the poses, the cost per acre for seed will range between \$3 and \$4 as compared with a cost of \$15 to \$20 per acre for seed potatoes. He urged that the Bean Jobbers' Association and the bankers of the state give liberal assistance wherever needed to farmers who may be handicapped in the securing of seed

different fungous diseases which at- ships and three from the city. tack it were thrown upon the screen. nature of these several diseases and for good roads. disease-free seed and the development the trunk lines across the county. of disease resistant plants. The first According to present plans the prothe last named method gives promise Covert act. the desirability of obtaining disease- the value of roads they build. conditions of last year had accomplish- hauling same.

The midwinter meeting of the Mich- ed much the same results in the proigan Bean Jobbers' Association, held duction of disease-free seed as would at the Hotel Cadillac in Detroit on be accomplished by this other method, Wednesday, January 24, to which ses- and that the present year would be an sion bean growers were invited, excellent time to begin the hand selecbrought out a good attendance of grow- tion of disease-free pods for the purpose of producing disease-free seed for

"Foreign Bean Statistics" was the sult which might be expected follow-He strongly condemned the selling ing its close. In this connection he adof futures before the crop was assur- vanced the idea that competition along Association to curtail this practice. He than along commercial lines, since the with regard to the season's bean yield tion where they would be unavailable

Hon. Frank W. Merrick, Banking county clerk of each county, giving ac- Commissioner, gave an interesting address on "How Your Banker Should threshed, the county clerks to report be Treated." Other subjects of interest to the jobbers rather than the retary of State to compile the reports growers made up the balance of the for publication twice each month, so program with the exception of a talk that both growers and dealers may on "Bean Statistics," by V. H. Church, have an accurate knowledge of the ac- Michigan Field Agent of the U.S. Detual bean yield at the earliest possible partment of Agriculture, who has specialized on bean statistics.

Another interesting feature of the President Orr expressed the hope that program was an address by Hon. Jas. beans might remain at \$6 per bushel, N. McBride, State Market Director, on the attitude of the growers toward

GOOD ROADS IN MICHIGAN.

The road commissioners of Calhoun county will ask the supervisors for \$370,000 for building good roads this year under the \$800,000 bond issue voted in November. This is in addition tion is based upon the fact that plenty to the \$80,000 raised by direct taxation for road construction. The bond issue will permit the building of three miles high price of beans for seeding pur- of road in each township. Six miles of concrete road is included in this year's program.

An enthusiastic road meeting was held recently at Sault Ste. Marie, Chippewa county, and a resolution was adopted recommending that the state take over all trunk line roads and complete the same, charging back to each for the planting of next year's bean county its just proportion of cost after deduction of state and federal award "Bean Diseases and Control of moneys. A legislative measure to this Same," was the subject of an excellent effect will be introduced. A standing illustrated address by W. W. Gilbert, committee was appointed to boost the Pathologist of the Bureau of Plant In- cause of good roads in Chippewa coundustry of the Department of Agriculty, composed of Sherman T. Handy, of Remarkably good illustrations Sault Ste. Marie as chairman, and six of the effect upon the bean plant of the other members, three from the town-

Branch county will vote April 2 on Mr. Gilbert explained very clearly the the question of a bond issue of \$600,000

the best methods for their control. Jackson county will vote at the April were shown to be of election on the proposition of bonding two classes, namely, the planting of for \$900,000 to build concrete road on

named method is best suited to the ef- posed stone road from Saginaw to Midforts of the individual grower, while land will be built this year under the

of good results in the hands of the State Commissioner Rogers will ask skilled plant breeder. Mr. Gilbert em- the legislature for an appropriation of phasized the desirability of growers \$450,000 to cover work outlined for the planting a seed-producing plot with the next two years, which is half of what seed from hand-selected pods, in order the federal government will spend. The to produce the cleanest seed possible amount is apportioned in the counties for the commercial crop. He spoke of according to their road systems and

free seed by growing the seed beans in Ottawa county will build about 10 the semi-arid climate of the western miles of road during the winter, letting states, but observed that the seasonal contracts for screened gravel and for ALMOND GRIFFEN.

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Limiting Factors In Fruit Production

were allowed to consume it.

be brought up to a level with the other dollars' worth of fertilizer used per factors. The expenditure of a few dol- year was simply so much money burlars on the limiting factor will often ied in the ground. On the other hand bring about such a balanced condition experiments in Massachusetts, Pennand thereby give better results than sylvania and Missouri on light soils the expenditure of many times that have amply repaid the fruit grower. amount on other factors.

The Adaptability of Varieties.

planting of apple varieties not climat- the orchard or put it in sod. The Hitchically suited or else not adapted to the ings orchard in New York has producmer temperature is too low, the ap-fruit is intensely individual. ples will be smaller, less colored and have a tendency to scald in storage. will drop early or even rot on the trees. certain soils for their development. regularly to produce a crop. The Rhode Island Greening, for instance, requires a heavy loam underexacting in its soil requirements.

Orchards.

and equipment and to maintain the er varieties. fertility.

fied fruit grower may develop a thriv- of the United States Bureau of Plant ing business.

hairs. Micro-organisms play an import-fully in apples. ant part by breaking down mineral The Importance of Good Pollination. combinations and organic matter. Fordrainage is lacking.

The Value of Fertilizers.

chard. The soil was a light loam un- but even these varieties produce larger

RCHARD operations may be lik- derlaid by an open shale sub-soil. The ened to links in a chain. It is only element lacking was nitrogen. The evident that the chain can be no addition of potash or phosphorus was stronger than the weakest link, or the a useless expenditure until the nitrolimiting factor. Strengthening the oth- gen content had been brought up to er links will not strengthen the chain the proper percentage. For about oneuntil this weak link is brought up to half of the soils east of the Mississippi the strength of the remaining links. River, the limiting factor is phosphor-For instance, it would be poor economy us. Many soils are also in need of to spend money on the care of an or-liming for best results. If the apple chard if no labor was available to har- orchard is on a fairly heavy loam, fervest the crop, or if worms and insects tilizers will probably not be necessary. Experiments carried on for the last fif-Here the insects or a lack of labor teen years at Geneva, New York, have would be the limiting factor that must shown that for their soil the hundred

Is Cultivation Necessary?

This naturally leads up to the ques-A very common limiting factor is the tion, of whether we should cultivate Methods of culture will be of lit- ed more prize winning apples than any tle avail where climatic conditions of orchard in the United States. These air or soil are uncongenial. Every va- results have been secured from trees riety has an average temperature at in sod. The orchard has received both which it reaches its best development. commendation and condemnation for, Any departure from this limiting fac- when other men followed Mr. Hitchtor of summer temperature gives infering's example of sowing down the orior fruit according to the degree of de-chard the crop immediately fell short. parture for the variety in question. In These fruit growers found out by exgeneral, Professor Shaw, of Massachu- perience that sod culture can only be setts, found that the best apple district profitably used on deep, rich soils, rehad an average summer temperature tentive of moisture or upon hillsides of 64 degrees F. Any apple variety subject to washing or covered with should be grown as far north as possi- rocks. The limiting soil factor must ble to fully mature it. The summers first be found out and methods should should be very long and fairly constant then be adopted to fit those particular in temperature. If the average sum- conditions for the business of growing

A more clear-cut illustration of a limiting factor in orchard operations can But if the summer temperature is too hardly be found than the very common high for the variety, the apples will trees along year after year at heavy be mealy, small in size, lack flavor and practice of carrying non-producing expense. It is fully as necessary for The most careful growers have also the fruit grower to know the record of learned through experience to discrim- trees as it is for the dairyman to know inate closely in choosing the proper va- what each cow is producing. Five milriety for their soil. The general pre- lion dairy cows, according to the Uniscription is for a deep, well drained ted States Department of Agriculture, soil, but growers have found after annually return a loss to the farmer. years of waiting and at a heavy ex- But how many million fruit trees are pense, that certain varieties demand there that are well cared for but fail

Keep Production Records.

An accurate account was kept of the laid by a clay loam, but such a soil performance of each tree in a large orwould not do at all for the Hubbards- chard in the Shenandoah Valley, Virton. The Northern Spy is also most ginia. Sixteen per cent of the trees were found to be producing at a loss Number of Varieties for Commercial to grower and one-third of the trees were producing two-thirds of the crop. Another common limiting factor aris- It is very near impossible to start a es in the number of varieties planted, new tree in an old orchard. But this In this age of specialization, many ad- is not necessary for the non-producing vise planting a single commercial va- trees can be brought into bearing by riety. The questions that come up are: special fertilizing, the use of cover (1) would it not be better to extend crops to check growth, by ringing or the season by planting other varieties by certain methods of pruning or if all or by growing other farm crops to give these methods should fail, the non-proa better seasoned distribution of labor ducing trees may be top-worked to oth-

The question arises, did these poor (2) The type of market may often yielding trees come from poor yielding call for a small amount of different parents, vice versa, will buds or cions fruits throughout the season, and by taken from high-yielding parents give a catering to such a demand the diversi- high-yielding offspring? Dr. Shumal, Industry, has found that bud propaga-Fertilizers may be the limiting faction from high-yielding orange trees tor, especially in old orchards. A fruit gave an offspring with a uniformly tree demands a balanced ration much high crop record. But up to date no the same as a dairy cow. The plant conclusive evidence has been produced food must be in solution and available showing that these desirable fruiting before being absorbed by the root characters are transmitted as faith-

It is a common experience to see tunately the proper cultivation of the fruit trees that will bloom profusely soil also gives ideal conditions for soil but fail to set any fruit. Very often bacteria. For instance, the addition of the limiting factor is weak pollination. fertilizer will be of little value if Experiments carried on in Oregon for the past ten years show the absolute dependency upon cross pollination of An interesting fertilizing experiment nearly all varieties of apples. A very was carried on in a West Virginia or- few varieties may pollinate themselves len. Ninety-nine per cent of the pollen the market. is carried by insects, in most cases the honey bee. Our dependence upon the limiting factor.

The Market as a Limiting Factor.

marketing has brought about the down- ple production of the six western apple fall of more growers than any other states is only one-half that of the state one thing. Increased crop production of New York. Along with wider maris of growing importance, and will be kets and increased consumption even more necessary in the future, but through advertising must come better

and more uniform crops when another been of relatively little help in the sovariety is interplanted. Not all varie- lution of the marketing question in genties cross with each other, but many eral. Only a small part of the fruit of the proper combinations have been trade demands can be grown close marked out. Both varieties should be enough to a city to use the public marof commercial importance, should ket place. The busy farmer can hardly come into bearing at the same time, afford to leave his farm to wait around should blossom together and should on the market, neither can the houseproduce abundant and congenial pol- wife leave her family duties to go to

The Value of Co-operative Effort. The question of marketing is so comhoney bee for a good fruit crop is well plicated and involved that the solution shown by work at Geneva, New York. is beyond any one individual. The Cal-Two thousand three hundred and forty ifornia Citrus Fruit Exchange grew apple blossoms were protected from out of conditions similar to those that the bees during the blossoming period. threaten the present apple growers. The resulting crop consisted of one Under the expert inspection of local lone apple. An Oregon cherry grower co-operative organizations in Califorincreased his cherry crop fifty tons an- nia, the fruit has been carefully picked nually by placing bees in his orchard. and then uniformly packed and graded. Keep bees and they will keep you. Be This standardized pack was so universure to plant the right combinations of sally advertised that today the orange varieties, then see that plenty of bees is a more universal fruit in the United are working in the orchard and you States than the apple. The same rehave eliminated another very common sults have been secured for western grown apples. Everybody knows about Hood River or Yakima Valley apples As a limiting factor, the question of yet few people know that the total ap-



Orchard Success Consists in Strengthening Weak Links in Orchard Work.

corn has increased forty-two per cent expense and profit. come of the service demanded by the consumer. A smaller profit for the rebring better prices to all.

consumer and even the elimination of the fruit business. the middlemen. The parcel post was created largely with this end in view but to date it has failed to fulfill this function, very evident and clearly needed. The following are some of the reasons why country shippers have failed in their direct dealing with the retail trade.

Reasons for Failure in Direct Marketing.

The quality and quantity of the fruit shipped from the country points is altogether too variable for the definite needs of a retail trade.

(2) Most fruit growers lack the storage facilities to meet the long seasoned demands of a retail trade.

(3) Business relations are hard to establish and maintain on a strictly cash basis with such a fluctuating me-

ducer and consumer may meet, has insect is not the common wireworm

the great and immediate need seems to methods of distribution. Michigan apbe for smoother marketing machinery. ples can be used at home when West Many growers have become tired of Virginia apples are being shipped to dipping into their pockets to meet the Michigan at the same time that the transportation charges and have united cars of Michigan friut are being billed with the general public in condemning out for Virginia. A smoother distributhe whole system of marketing as it tion of a standardized pack as the reexists today. The price of apples has sult of the co-operative organizations failed to keep pace with that of other of growers will automatically reduce farm products. In the last ten years much of the middleman's share of the

on the New York market. Cotton has The question of marketing will alincreased sixty-four per cent, hay twen- ways be the most difficult limiting facty-eight per cent, but apples bring up tor in orchard operations. The Office the rear with a gain of only nine and of Markets of the United States Dea half per cent. Even then the fruit partment of Agriculture has already grower receives only one-third of the done some very effective work largely selling price of his fruit. A seemingly through the accumulation of market large portion of the balance goes to statistics and conditions and by issuthe retailer but this is the logical out- ing a telegraphic report to avoid congested markets.

Other limiting factors are, however, tailer and a quicker turnover of the within the direct control of the grower. stock would help all along the line and a proper selection of varieties, soil, ferilizers, and type of farming, coupled Much of the marketing criticism has with the elimination of the non-producbeen centered around the middleman, ing trees and better pollination of the Many people demand a more direct sys- balance usually constitutes the differtem of marketing from producer to ence between success and failure in

R. W. PETERSON.

TROUBLE DEPARTMENT.

Cabbage Maggot.

so full of a very fine white wireworms that we are unable to get usable radishes, turnips or similar root crops, although they have not troubled pota-toes, carrots or parsnips, and onion maggots have ruined our onions the past two seasons. We have seen fall plowing advised as a remedy for wire-worms, but owing to the snow drifting on this ground and preventing sufficient frost going into the ground to kill off the worms, we will appreciate very much a suggestion of some other method as, on account of the garden being so convenient to the house. being so convenient to the house, we do not want to move it.

D. E. W. Kent Co.

Practical means are wanted for the control of cabbage maggot which in-The public market place where pro- fests your radishes and turnips. This

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Free Farm and Garden Guide The Page-Philipps Seed Co. Toledo, Obio

ed stick, beneath each plant into which and turnips. will also have a beneficial effect. Both control.

as you think, but has habits very sim- these methods entail considerable la- injuring or possibly killing the trees. ilar to those of the onion maggot. bor and expense, and it is doubtful

they put a teaspoonful of carbon bisul- Rotation of crops and the destruc- 2 axle grease, which can be bought at phide. The sprinkling of a half cup of tion of old cabbage stumps after har- a reasonable price in bulk. Clean the carbolic emulsion around each plant vest are the only practical means of

The Garden Acre

author relates that more than twelve hundred bushels of potatoes have been grown on an acre.

this.

early potatoes, lettuce, onions and cel- ket them by the first week of July. better will be the price.

Getting An Early Start.

the fall and wintered them in cold what is called "The New Onion Culweather. This involves considerable ture," which is growing them from labor, time and care, with more or less risk. The last three seasons I have improved on this method by purchasing southern grown plants. These other early growing plants. When reseem to be quite as hardy as home grown, and in every way as satisfactory. I try to get them set by the fifteenth of April, in which case I am usually able to begin cutting by the last week of June.

Potatoes are put in shallow boxes around the middle of March, and plac- attractive appearance. According to ed in a light room where the temper. the production last year, an acre would ature is from 50 to 60 degrees. By the have produced 864 bushels. As they time the garden is ready to receive them they have thrown out green, strong sprouts and are cut so that each one to grow. piece will contain but one eye, or sprout. A good deal of care is necessary in planting not to break the sprout, and to see that the tuber is so placed that the sprout will be uppermost, which will facilitate its early reaching the surface. Furrows are made with the single shovel plow that will admit of seed, which when fully

Before starting the youngsters to school give them a piping hot cup of

Instant Postum

School teachers, doctors and food experts agree on two points—that the child needs a hot drink, and that the drink shouldn't be coffee.

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"There's a Reason"

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N "Ten Acres and Liberty" the covered will be about four inches deep. Early Potatoes.

I cover lightly at first which gives them the advantage of reaching the While not disputing it, I must ac- surface and light as soon as possible. I assume that it is not known just filled and if frost should threaten, I the production of any crop. In our that they can push themselves through wind and sleet storms. garden there is just about an acre and it. By cutting to a single eye I can on this I grow a diversity of crops. plant as closely as ten or twelve inchcialize in, and it is of these that I pro- where two or more sprouts occupy the grow and heal the scar. pose to write. They are early cabbage, hill. In average years I begin to mar-

ery. The first four of these I aim to Lettuce (Big Boston) is set at about cover the trunks of from six to a dozen get out in the garden just as soon as the same time that the cabbages are spring conditions will allow, as, not set, or the potatoes planted. These are only are weather conditions more con- grown on the same plot as the others, genial in the early season, but the ear- the reason being that these crops will till the warm sunshine of the early lier I can get them in the market the all be off by the middle of July when summer. I begin to set celery as a second crop.

For two years I have been experi-Formerly I grew cabbage plants in menting with Prizetaker onions by Carolina. I receive them early, by express, along with cabbage, lettuce and ceived they are of the size of a lead pencil or larger, having bulbs, some as large as a half-inch or more, and are well rooted, giving them a quick start. Grown in rows fourteen inches apart and sets four inches apart in the row they grow to a large size and have an were sold at a \$1.60 per bushel it will be seen that the crop is a profitable

Cabbage and Celery.

Copenhagen market cabbage I grow mainly, it being but little later than the Wakefield, grows a larger head, is very solid, and rarely bursts. They are sold mostly at retail, last year bringing three cents per pound. Potatoes sold at 50 cents per peck and lettuce at eight cents per head.

Just as soon as these early crops are off, the ground is well cultivated and leveled, when Golden Self-blanching celery is set. Thorough and freble rows, the rows being six inches apart, and the plants set every six land they grow almost as large as in which at retail, as they are usually bers. sold, they bring not less than five cents per plant, which, taken together with the early crops it will be seen that the profit from an acre is high.

B. F. MACK. New York.

PROTECTING YOUNG FRUIT TREES.

around the trees may girdle the bark, retary, Benton Harbor, Mich.

A safe and easy way to guard small Some growers, especially those rais- whether it would be profitable to use trees and valuable shrubbery against ing cabbage, make a hole with a point- them, especially in treating radishes rabbits and mice is to purchase some soft compression grease, or grade No. grass close to ground around the trees then with a pair of leather mittens begin close to the ground and spread a fine coat of the soft grease on the trunk of the tree. Near fences and where the snow is liable to be deep, carefully spread the grease on the branches which are within the reach of mice or rabbits.

Being a mineral grease rabbits and mice will not bother the trees and it knowledge that I have never been able If the entire covering was put on at has the advantage over other tree proto more than approximate one-third of once they would be retarded. After tectors in that it guards the tree from they are up the furrow is gradually as close to the ground as necessary to the trunk and branches as high as needwhat an acre of land is capable of in cover them with soil, not so much but ed, and does not chafe the bark in

Should the trees have the bark damaged apply the grease, rubbing it well While growing most crops adapted to es in the row. In this way I grow larg- into the wood, and wind with strips our climate there are a few that I spe- er and more uniform tubers than of cloth or burlap, and the bark will

> This form of protection is cheap and easy to apply. A pound of grease will trees, according to size. Once applied it will cling to the bark through all kinds of winter weather and last well

Gladwin Co. H. G. KERSWILL.

PLANTING APPLE SEEDS.

ture," which is growing them from When do you plant apple seeds, and plants, grown by my grower in South also what about root gall, will it kill apple trees? Oakland Co.

Spring is considered the best time for the planting of apple seeds for the purpose of growing seedlings.

There are very few who grow apple seedlings in this country, on account of the cost of producing them and the uncertainty of results, should they be left to grow until bearing age. Usually the nurserymen import their apple seedlings from Europe, where they can be grown very economically on ac-count of the low cost of labor. Should you desire to propagate your own apple trees, I would suggest that you buy or make root cuttings from which to grow your grafting stock.

Root gall does not often kill apple trees, but usually greatly interferes with their normal development, especially if young trees are infected. Old trees are often vigorous enough to withstand the effects of the gall.

THE HOT-BED.

Regarding the use of hot-beds Prof. C. B. Sayre, of Purdue, said every quent cultivation is given and nitrate home garden should have one. They of soda at the rate of 100 pounds per are easily constructed and operated. acre is strewn along the rows when Either a surface or a pit bed can be the plants are well started, and again used, with fermented manure a foot when half grown. I grow them in dou- deep at the bottom and good loam soil on top. When the temperature of the bed is brought to 85 degrees it is inches, there being five feet between safe to plant. The hot-bed should be the double rows. I find that on rich started about March 1 and planting can be safely done about March 15. Early single rows and are banked with but relishes may be grown first and then little more labor than single rows, the hot-bed can be used for starting early extra space being of advantage in plants for transplanting. Later the banking. Grown in this way I estimate hot-bed may be used for growing an mately 30,000 plants per acre, extra fancy crop of melons or cucum-

STATE HORTICULTURAL MEET-

The midwinter meeting of the State Horticultural Society will be held in Benton Harbor, February 20-21, 1917. This is to be the big meeting of the winter. Splendid speakers have been During the winter months when the secured, both of national and state repground is covered with snow small utation, and the program will be of unfruit trees and other shrubbery are usual interest and full of upt-o-date topliable to be injured by rabbits girdling ics. No fruit grower can afford to miss the bark and limbs. Also, moles and this meeting. For information and parfield mice nesting in grass and leaves ticulars address Robt. A. Smythe, Sec-

Sheep for Upper Michigan

Address by Prof. J. A. Jeffrey, Delivered at the Recent Meeting of the Michigan Sheep Breeders and Feeders' Association at M. A. C.

to \$10.70 per hundred. Lambs wool. were bringing \$11.16 to \$14.15 per hun-

33 to 46 cents per pound.

AST Monday wethers were bring- ed to the production of sheep, both for ing on the Chicago market \$9.60 mutton and quality and quantity of

We have the soils; we have the feed; we have the climate. Every-Michigan wool was quoted on the where, upon soils ranging from sandy Boston market at prices ranging from loams to heavy clays is to be seen growths of alsike clover, timothy and During the first week in December blue grass (along highways, in slashthere was held in Chicago a great conings, on burned-over lands), self-seedference of sheep men and others inter- ed, the first seedings coming originally ested in mutton and wool. It was a from the hay drawn in over the tote conference—not a convention—a gath- roads to the logging camps. The deering at which men talked heart to gree to which this self-seeding has exheart on questions ranging from the tended itself is in a sense amazing. In impractical to the practical, but all re- my own territory, we have one area, lating to the sheep industry and all in-exceeding 100 square miles, from dicating the intense interest that now which the standing timber has been exists in the sheep and associated in- entirely removed, either by the woodsdustries. This conference was attend- man's ax or by fires. Some of the ed by men high, or once high, in the stumps and some of the down timber nation's government. Among them, only remain. This area has become Ex-secretary Wilson and members of heavily self-seeded to clover and grassthe National Bureau of Animal Hus- es, interspersed by poplars and wilbandry. There were representatives of lows. This region seems to be espenational sheep breeders' associations, cially adapted to sheep. The soil in railroad men, wool buyers, manufactur- this case is largely heavy soil. We ers, wholesalers, retail clothiers, etc. have other areas of a similar character Discussions covered a large range of but of smaller size. This region lies



Stump Land in the Ontonagon Valley Self-seeded to Alsike Clover.

subjects. The purport of it all was in the Ontonagon Valley and adjacent more sheep, more mutton, more wool. to the beautiful Lake Gogebic. Farther

of a southern state called attention of ley, with lighter soils but similar consheep men to the millions of acres of ditions. Chippewa county in the vicinland in his state suited to the sheep ity of the Soo is unquestionably the industry. Representatives of railroads home of the oldest agriculture in the are calling attention to large tracts state of Michigan. For years this realong their lines suited to and ready gion has been noted, not so much for for the industry in its various forms. the numbers of sheep produced, as for And all this because the long used the quality of carcass. ranges of the southwest, west and Sheep thrive to a remarkable degree

The representative of the governor to the east lies the Sturgeon River Val-

northwest are becoming greatly and upon these native clovers and grasses, rapidly restricted because of the en- which are supplemented in the wild



The Efficient Work of Sheep in Clearing Land of Brush.

riculture.

sheep. We could as well produce ten mention of this will be made later. million as not. This state has paid more than ten million dollars in a sin- ing the adaptability of the climate of gle year for feeding lambs, all of which upper Michigan to not only the varimight have been produced within our ous branches of animal industry, but own borders without being detrimental to crop production as well. As a matto our other live stock interests."

before the sheep men of Michigan and the several branches of animal industell of what my territory has to offer try and associated lines of agriculture. in developing a greater sheep industry. Our blanket of snow not only accen-Upper Michigan is pre-eminently suit- tuates our uniformity of winter tem-

croachment of general and special ag- lands to no small degree by the feed offered by the poplar, willow and other The secretary of one of your great small brush. And this is proven not national sheep breeders' associations only by the quality of the meat and recently made this statement: "Mich- wool, but by the amount and rapidity igan today has only about two million with which they are taken off. Further

Doubt is so often expressed concernter of faet, every phase of our climatic I am glad for this privilege to come conditions is favorable in general to



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e genanne without the signature U.S.& DANADAS. CLEVELAND.O

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Your Gombault's Caustic Balsam is the best liniment I know of. I have bought four bottles for my neighbors, and two for myself. I have cured a sweenied horse with the Balsam.

—Louis Miller, Sharon, Wis.

GOMBAULT'S JAUSTIC BALSAM IS EXCELLENT.

Having read an advertisement in Wisconsin Agriculturist about your Gombanit's Caustic Balsam, I have tried some of it and think it excellent.—J. M. Worazdovsky, Big Flats, Wis.

Sole Agents for the United States and Canada. The Lawrence-Williams Co. TORONTO, ONT. CLEVELAND, OHIO.



of every type—as well as Tanks, Silos, Roofing, Siding and all forms of exposed sheet metal work, give greatest service and resistance to rust, if made from

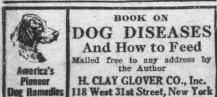
Apollo-Keystone COPPER STEEL

ERICAN SHEET AND TIN PLATE COMPANY, General Offices: Frick Building, Pittsburgh, Pa

COLEMAN GAS LANTER!

Makes and Burns Its Own Gas











Attach to any sulky, gang or tracter plow. Pulverize the germinate the seed evenly and get bigger crops. By us "Krainer" you can do several operations in one without cost. Write today for special proposition and let us sho how to save time, labor and money.

KRAMER ROTARY HARROW CO.

Dept. 12

SELF-OILING WINDMILL With INCLOSED MOTOR Keeping OUT DUST and RAIN-Keeping IN OIL



DOUBLE GEARS - Each Carrying Half the Load Every feature desirable in a windmill in the AUTO-OILED AERMOTOR Write AERMOTOR CO. 2550 West 12th Street CHIC

perature, but protects every crop and know, are never grained in preparing insures early spring pasture. Before for market, but listen: the snow has disappeared in spring all and energetic growth. I have not yet to such a degree of perfection. heard of a case of winter-killing of clolatitude of Lansing, and even of the sheep were too fat. southern tier of counties in Michigan.

The distribution of rainfall is remarkably uniform and insures a larger kets from upper Michigan topped the percentage of feeding days from May market by six cents for two weeks. to November than is found farther memory of any of the residents with ing market. whom I talked.

tionably, climatic energy has a bearing manded fifteen cents, home. not only upon the uman body, but the of body and mind resulting from cli- much attention. These regions lie

Ohio sheep men who sometimes visit frost has disappeared from the ground the Soo in the autumn find it difficult and the vegetation which has thus to believe that the mutton carcasess been protected throughout the winter they see hanging upon the hooks is vigorous and ready for immediate have not been grained to bring them

Farmers south of McMillan in Luce ver or of alfalfa, and I think I am county, have told me that they were safe in saying that live stock will take unable to command top market prices advantage of the pastures in the upper for their sheep because the local buypeninsula earlier than they will in the ers have declared (falsely) that their

About the middle of October last, a bunch of sheep sent to Chicago mar-

More recently a part of a carload of south. During the past season a three lambs not so well graded for size weeks' drought occurred which was brought within thirty cents per hunthe longest drought experienced in the dred of the top of the market on a fall-

A small flock of Shropshires that re-Climatic energy is a term of rather ceived only a poor quality of hay durrecent origin. In an article prepared ing the winter and gathers its own some time ago by Prof. Huntington of feed in summer, in which the lambs one of the eastern universities, he de- are dropped from the first to the midclared that the most progressive and dle of June, produced lambs whose carenergetic races of men, both mentally casses averaged forty-five pounds by and physically, are those found in the November 1. These carcasses comtemperate-perhaps the highest tem- manded twelve and a half cents F. O. perate regions of the globe. Unques- B., home. This year, they have com-

At the present time, the Ontonagon animal body as well. Climatic energy and Sturgeon Valleys are being given may be roughly defined as the energy much publicity and are attracting



matic environment, and it is claimed within forty to 100 miles of the mining to the highest degree.

The boat crews of Duluth, Minn., are boat crews of the continent, and it is claimed that this is due in no small one market. The Bessemer-Ironwood degree to the temperature conditions region undoubtedly consumes as many, under which the crews train.

The rare day in June of which the poet speaks is the one in which to luxuriate, but it is when the frost is on the pumpkin and the corn is in the shock that one can eat the full meal and do, and enjoy, a full day's work. Every one of you who comes from the farm can testify to the joy of labor on a crisp autumn day. The effect on the beast is fully as marked. In southern Michigan the feeding of the steer is done in the open shed or under the open sky rather than in the stall. Every milk tester knows that it is in the crisp dry weather that the milk flow is kept up and that a change to damp and warm weather results in a falling off of feed and reduction of flow and

In the last few years, upper Michigan has produced some remarkable this record farther south." I think there is no question that the climatic isting with us. conditions existing in this region are decided assets rather than liabilities, of these lands that they are willing to and will go far in making for a larger prove their faith by deeds in a most sheep industry in that region.

Sheep in upper Michigan, so far as I

Seven-months'-old Ewes on the Farm of A. K. Barnes, Ontonagon County.

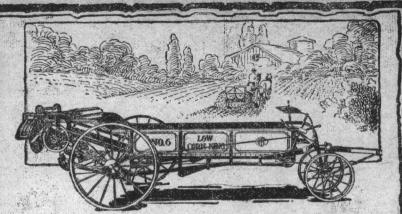
that in regions of moderately lower regions of the Upper Peninsula. At temperature, this energy is developed the present time, 160 mutton carcasses per week are distributed through the Ishpeming market alone. This means "far and ahead" the champions of the over 8,000 carcasses per year, and in practically one county only through while the Copper country region undoubtedly requires a larger number.

The actual running time from the Ontonagon and Sturgeon Valleys to Chicago under single carload conditions is twenty-two and a half hours; in small train lots it would be considerably less.

As indicated at the beginning of this talk, the great sheep ranges of the west are becoming greatly restricted and the sheep men are looking elsewhere for range territory. They have discovered us and our grazing lands and have started to personally examine our conditions. One of these men recently visiting this region, declared that the conditions were pre-eminently good for the sheep industry and now plans to bring in a flock of 1500 ewes in early spring. With him will probably come a number of his neighbors. Other western sheep men we confidentdairy records, and an owner of one of ly expect will unquestionably come the now famous cows of that region in with even larger flocks. Ohio, Indiana referring to the record she had just and Illinois sheep men are wanting "to closed, said: "She could not have made know" and we are receiving numerous inquiries concerning the conditions ex-

So great is the faith of the owners practical way. They are offering free (Continued on page 134).





Settle the Spreader Question

HE farmer who uses a Low Cloverleaf, Low Corn King or Low 20th Century spreader these days is the man who makes the most money. His land increases in value when regularly fertilized. His crops grow better fertilized. His crops grow better in quality and larger in yield when supplied with available plant food. Of all the spreaders on the market, the Low Cloverleaf, Low Corn King and Low 20th Century come nearest to doing this work as it

and Low 20th Century come nearest to doing this work as it should be done.

It is a long jump from the ordinary machine to the modern low spreader with its double beater and wide spread. Every farmer who knows the value of good spreading is buying one of these wide spread machines. As a matter of fact, no farmer can afford to buy any other kind, because the saving of time and labor and the better job of spreading done by a Low Cloverleaf, Low Corn King or Low 20th Century makes them worth more than ordinary spreaders.

Complete information about these machines is worth money to you. Drop us a line at the address below and we will show you very plainly why it will pay you to buy a Low Cloverleaf, Low Corn King or Low 20th Century spreader.

International Harvester Company of America (Incorporated)

CHICAGO

Champion Deering McCormick

Milwaukee Osborne

USA Plano

MUTUAL INSURANCE COMPANIES

Meet in Lansing, February 7th.

Attorney Liebrand, of Lansing, has been requested to speak on the question of how best to handle delinquent assessments. Mr. Liebrand has had much experience in enforcing the collection of assessments in mutual companies. It seems that nearly every mutual company is troubled with a few who like to accept all the benefits under the policy until the time of the assessment and then they conveniently neglect to pay. Just as the dead beat in the city finds no fault with the house he is living in until the rent becomes due. Under the Supreme Court decisions it seems that these assessments can be enforced, and, after the assessment has been paid, if a man wishes, he can send in his policy and have it legally cancelled. In as much as nearly every mutual company is vitally interested in this question, this will be a live topic at the State Association.



Dakota Hardy Does Not Winter Kill
Our Disco Alfalfa and Seed Book gives full information about Dakota Grimm. Baltic and Registared
Alfalfas. Sent free. DAKOTA IMPROVED SEED
CO., 804 Lawler Street, Mitchell, South Dakota

CLOVER AND TIMOTHY 4:00

YOUNG-RANDOLPH SEED CO.,

CLOVER SEED

Write us and we will send free sample envelopes. Then send us a sample of your clover seed and let us make you an offer either machine run or after cleaning. W. L. IRELAND & CO., Grand Ledge, Mich.

Seed Oats and Corn. Best Varieties.

Seed Corn, Seed Oats, Olover, Alfalfa and Timothy seed. Everything in Farm Seeds. Catalog free. McCartney Bros., Greenville, Ohio. Northern Grown, Seed Mahogany Kidney beans for sole, not diseased. Write for sample and prices. Louis G. Hutzler, South Manitou Isle, Mich.



Model L-12-20 Horse Power

Model L-12-20 Horse Power

A four-cylinder, 2-speed, light-wieght done by the State Sanitary Live Stock Commission, during the past year.

Be it Resolved, that we extend to President Schantz our hearty thanks you now have on your farm—gang plows, har-rows, movers, binders, manure spreaders, road drags, or graders. Will also operate your ensilage catter, feed grinder, circular saw, etc. Does more work than harses—costs less and is so simple anyone can run it.

Emerson-Brasilogham Implement Co. (inc.) 78 W. Fron St., Rocklers, Ill Please send me free literature on articles checked:

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WHITE SWEET \$ 60 Per CLOVER Bu.

Owosso, Mich.

(Continued from page 132). sit feeding. They are doing more, H. H. Halladay, Clinton. They are offering what is equivalent to gratuitous leases upon considerable tracts for a sufficient period to prove out the possibilities of these lands for sheep breeding industries.

to do her part.

wool, etc., that favors the greatest Mason, Mich. growth of rich feed during the growing season, due in no small part to our Stead, of St. Johns, Mich., carried off even distribution of rainfall and hours the blue on a high-class colt. of sunlight and twilight.

The amount of sunshine at Calumet from spring to fall exceeds the amount filly. H. B. Peters, of Carland, Mich., of sunshine at Chicago for the same reason by approximately ninety hours while the amount of twilight at Calumet exceeds for the same period that

at Chicago by 110 hours.

A climate whose winters scarcely require a longer feeding season than do your winters of southern Michigan, but which possesses much better feeding and more healthful conditions and moreover insures protection to, and a vigorous growthy condition of perennial and biennial crops when the snow has disappeared.

THE LIVE STOCK MESTING.

(Continued from last week).

At the Thursday afternoon session of the annual meeting of the Michigan Improved Live Stock Breeders' and Feeders' Association, held at the Agricultural College, as noted in the last issue, the first address was on the subject of "Beef Production on Michigan Farms," by I. R. Waterbury, Editor of the Michigan Farmer, which was followed by an address on "The Year's Work in Control of Contagious Diseases," by H. H. Halliday, President of the Live Stock Sanitary Commission. A synopsis of those features will be given in a future issue.

The report of the committee on resolutions was adopted as follows:

Election of officers for the ensuing

ear resulted as follows:

Whereas, The Michigan Agricultural College has extended to the Michigan Live Stock Breeders' and Feeders Association, with cordial hospitality, the use of its buildings and grounds,

Be it Resolved, that we, as members of this Association express to them our earnest appreciation, for these courte-

earnest appreciation, for these courte-sies, and, also, to the State Board of Agriculture for the splendid banquet which they tendered our organization. Be it Resolved, that our Association

of this Association express to them our earnest appreciation, for these courtesies, and, also, to the State Board of Agriculture for the splendid banquet which they tendered our organization.

Be it Resolved, that our Association expresses its approval of the work done by the State Sanitary Live Stock Commission, during the past year.

Be it Resolved, that we extend to President Schantz our hearty thanks for his continued interest and work.

Whereas, During the past year death has taken three of our esteemed members, Frank T. Crandall, Howell; Wm. Stoll, Lansing, and G. A. Dimmock, Kalamazoo.

Be it Resolved, that this Association is keenly aware of the great loss that it has thereby sustained.

Also, be it Resolved, that a copy of this resolution be sent with our sincere sympathy to the bereaved families.

President, I. R. Waterbury, Detroit; vice-president, Colon C. Lillie, Coopersville; secretary, George A. Brown, East Lansing; assistant secretary, W. E. J. Edwards, East Lansing; treasurer, C. P. Reed, East Lansing; executive committee, C. G. Parnall, Jackson; J. School of the state Board of Agriculture for the splendid banquet which they tendered our organization. Okemos, Mich.—Cows.—Baron's Dorothy, 177349, J. A. Craig, Stockbridge, \$170; Oakland Lady, 177350, J. M. Hicks & Sons, \$170; Oakland Lady, 177350, J. M. Hicks & Sons, \$170; Oakland Lady, 177350, J. M. Hicks & Sons, \$170; Oakland Lady, 177350, J. M. Hicks & Sons, \$170; Oakland Lady, 177350, J. M. Hicks & Sons, \$170; Oakland Lady, 177350, J. M. Hoopingarner, Consigned by O. A. Hoopingarner, Bronson, Mich.—Cows.—Red Rose 2d, 514555, Dr. Rice, Flint, \$190. Bulls.—Student Lady, 177349, J. A. Craig, Stockbridge, \$170; Oakland Lady, 177350, J. M. Hicks & Sons, \$170; Oakland Lady, 177350, J. M. Hoopingarner, Consigned by Michigan Agricultural College, East Lansing, Consigned by Michigan Agricultural College, East Lansing, 1840, 1841, 184 committee, C. G. Parnall, Jackson; J.

Fred Smith, Byron; Hon. A. T. Robpasturage for a single season for tran- erts, Marquette; Jacob DeGeus, Alicia;

MICHIGAN COLT SHOW.

The third annual colt show, held at M. A. C., East Lansing, January 18-19, East, west, north and south there is was the most successful and largest growing interest and growing activity, attended event of the kind ever held and unless all signs fail we are on the in Michigan. Thursday at 3:00 p. m., eve of a "long pull, a strong pull, and J. S. Montgomery, of Minnesota, an a pull altogether," the land over, for a expert judge of draft colts, tied the greater sheep industry in this country. ribbons as follows: In the class for Michigan is able and probably ready Registered Percheron stallions under one year, nine well-bred and well-fed The Upper Peninsula clover land colts faced the judge. After a thorbrings as offering in the development ough tryout the blue ribbon went to a of this greater sheep industry for our black ten-months-old colt weighing commonwealth, resources unsurpassed, 1140 pounds, owned by J. M. Hicks & if indeed, equaled elsewhere for the Sons, of St. Johns, Mich., which was sold to Eli Sprunger, of Saginaw, for These offerings include: A soil, un- \$290. In the class for Registered Persurpassed in this great state, to pro- cheron fillies under one year, six highduce pasture and feed, including clo- class colts were lined up. First place vers, grasses and alfalfa. A climate went to a gray filly from Hicks & that stimulates the animal machine to Sons' stable. Second place was won its greatest capacity to transform feed by M. A. C. Third place by Hicks & into finished products-meat, milk, Sons, and fourth by Bullen Bros., of

In the class for Belgian fillies, Thos.

Champion honors of the colt show went to M. A. C. on a fine Clydesdale was second, and Wm Small, of Grand Ledge, Mich., was third on Registered Percheron stallion.

THE SHORTHORN BREEDERS! SALE.

The following is a list of the individual sales at the Shorthorn sale held under the auspices of the Michigan Shorthorn Breeders' Association at the recent live stock meeting at M. A. C., averages for which were published in the last issue. in the last issue:

in the last issue:

Consigned by A. E. Stevenson, Port Huron, Mich.—Cows.—White Gloster Girl, 209433, W. W. Knapp, Howell, Mich., \$225; White Gloster Beauty, 497371, W. W. Knapp, \$225; Bulls.—Orange Hero, 497336, W. J. Hosley, Howell, \$270; Gloster Diamond, 410477, H. Kellerman, Elkton, \$260; Sunnyside Monarch, 497368, W. W. Knapp, Howell, \$2500; Tulliy's Last, 209432, W. W. Knapp, \$275.

Consigned by John Lessiter's Sons, Clarkston, Mich.—Cows.—Ella White, 511909, Wm. H. Pearson, St. Johns, \$215; Bulls.—Don's Victor, 511906, M. N. Byrum, Leslie, Mich., \$260.

Consigned by F. Rohrabacher, Langsburg.—Cows.—Jessie Pride 2nd,

\$215; Bulls.—Don's Victor, 51f906, M. N. Byrum, Leslie, Mich., \$260.
Consigned by F. Rohrabacher, Laingsburg.—Cows.—Jessie Pride 2nd, 196186, Frank Sours, Elk Rapids, \$130; Marigold Pride 3d, 234554, J. C. Boyd, Ithaca, \$15; Marigold Beaufort, G. C. Boyd, Ithaca, \$160; Marigold Lavender, 140154, G. C. Boyd, \$125. Bulls.—Silver Sultan, 472959, G. W. Smith, Albion, \$130; Kelvindale 3d, 517477, J. L. Barclay, Homer, \$160.
Consigned by H. B. Peters, Carland, Mich.—Cows.—Scottish Dewdrop, 475-533, M. H. Bowman, Rockford, \$140, Chloris 12th, 475523, M. J. Bishop, Ionia, \$150; Fancy Belle, 495927, Patrick Pettit, East Lansing, \$155; Fairfield Beauty, 76336, C. E. Barker, Grand Rapids, \$135. Bulls.—Fairfield Goods, M. P. Cook, Flint, \$175.
Consigned by Stimson Bros., Oxford, Mich.—Cows.—Bess 9th, 233895, J. Stimson, Flint, \$190; Rebecca 5th, 223899, Dr. Rice, Flint, \$240. Bulls.—First choice 442738, M. H. Bowman, Rockford, \$205.
Consigned by M. A. Bray & Sons,

choice 442 ford, \$205.

(Continued on page 153),

Stopping Dairy Losses

to be credited. The latter, however, tolerating a big leak in his business. fails to discern any evidence of his opulence and is apt to suspect the mid-

very often lacks efficiency in a greater differs according to requirements. ly in his own hands.

Good Producers Profit Makers.

are cows that do not possess the nec- anced for a cow at one period is not essary characteristics for profitable a balanced ration for the same cow at milk production. Either they are low another period. Thus when formulat-

HEN Mrs. Consumer lays in her the maximum of milk at the minimum daily or weekly stock of milk, cost. Similarly, whole herds have been cream, butter or cheese, she is raised to the 10,000 pound class. The frequently inclined to register a com- dairyman who does not try out this plaint regarding the high cost of liv- system of taking the measure of his ing for which the farmer is pretty sure cows is losing money. He is simply

Feeding for Results. Many a dollar might be saved to the dleman of annexing more than a fair dairyman by intelligent feeding. Comshare of the proceeds. Usually he looks mon sense reasoning has established a upon that individual as a necessary balanced ration-one that will accomevil and is content to let it go at that. plish a purpose more efficiently and The main trouble is that he, himself, more economically than any other, and or less degree in connection with vital wonder how many farmers pay the phases of the industry. He fails to same attention to feeding the cow recognize certain leaks through which when she is dry as during the flush of some of his legitimate profits are get- her lactation period? In my experiting away, or seeing, neglects to apply ence, it is mighty poor economy to negthe proper remedy. Hence the oppor- lect a dry cow and there is no better tunity for bettering conditions is large- investment of time and feed than in providing bountifully for her requirements. Whichever way it goes, wheth-For instance, one cause for the loss er up or down, the milk result is regisof money in dairy farming may be trac- tered in the milk pail. The feeder must ed to the kind of cows kept. There remember, however, that a ration bal-



Two Dutch-beited Cattle which Promise to be Profit Makers.

dairymen keep any record whatever of clover or alfalfa. cow yields and are equally careless concerning the amount and value of should know and be interested in.

it is necessary to know whether Bess whether for every dollar's worth of feed consumed she gives a return of ones retained that guesswork would have sent to the butcher.

Keeping Records of Practical Value. Some farmers claim that all this talk than for that eaten at any other period. about book-keeping for cows is pure has been forced up to the limit of her after all the business can offer. capacity. Thus it is possible to obtain

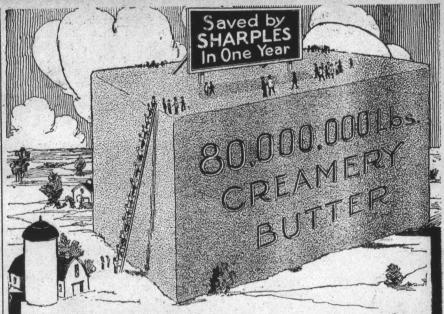
in capacity, or, if high in this respect, ing a ration for the dry cow, note must require the consumption of so much be taken of the fact that besides confeed as to practically wipe out the pos- ditioning the cow we must take into sibility of net returns. It would seem account the developing of an unborn with all the agitation regarding the calf. If it be summer time, nothing keeping of records of each cow in the excels good pasture as a basic ration, herd, selling the "sponger" and raising but if in winter, substitutes in the form calves from the best individuals, that of silage, roots or other succulent food the advise would be taken more ser- should be used freely in conjunction iously. However, comparatively few with some leguminous hay, such as

The Balanced Ration.

Whether summer or winter condifeed consumed. These are things they tions exist, a concentrated ration properly balanced should be fed. A mixture Now if we are to accomplish some- consisting of two parts ground oats, thing in the way of plugging the leaks, one part oil meal, one part bran and one part corn meal will, as a rule, or Spot returns \$5 or \$50 net profit, prove efficient. From six to twelve pounds may be fed daily, to good advantage, the exact amount, of course, ninety cents or \$2.50, whether the milk depending on the feeding qualities and cost sixty cents per hundred to produce condition of the cow. It should be or \$1.40. This we may learn only by borne in mind that feed given during a daily use of scales and test. The the resting period is far from wasted. poor cow is eliminated and many good Even though nothing is returned directly, she is making good use of the food, and later will return more profit for feed consumed while she is dry

After freshening, we have a cow fussiness-that it takes too much time that is strong, fleshy and ready for -and time is money these days. Per work. She has much extra fat stored sonally, then, I must confess to being up in her body which she converts into he fussy kind, for I have had milk and butter-fat. The purpose of scales hanging in my stable for fifteen needing is to encourage the transferyears, and I doubt if there has been a ing of the fat from the body to the pail. day during that time that the milk of Succulent foods and those rich in proeach cow has not been weighed. Not tein stimulate milk secretion at the exonly am I able to state positively which pense of body fat. Gradually, the cow are my best cows, what were their best loses much of the beefy conformation years, and why, but I have a reliable that her pre-freshening feeding producguide in feeding. By referring to the ed, and takes on a decided dairy form. daily record of any cow I know at once This is the ideal working form for the if she has dropped a pound in the dairy cow, and the problem is to hold amount of milk production for the day it. Recognizing that some foods tend and at once take steps to ascertain the to create energy and fatten the animal cause and provide the remedy. More- while others furnish milk-making nuover, these records tell me when to trients, it is plain what should be the call a halt in the case of a cow that feeding policy of the dairyman who is

For a number of years I have had



The height of this print of 80,000,000 lbs. of butter is 90 feet its length 180 feet. An average loss of 10 lbs. of butter per cow by all separators except Sharples causes this appalling yearly cream loss in the United States alone. If all separators were Sharples this immense pile would be savea annually. For this reason: Sharples is the *only* separator that skims clean regardless of speed. Look back over your past experience with separators. Many a day you determined to turn at top speed and not lose cream. But unconsciously, little by little, you slackened and lost cream. That separator was not a

REAM SEPARATO

If it were you could have slowed down and still gotten every particle of cream. Sharples is the only separator that "meets the moods"—almost

human in its adaptability to every day condi-tions. It's the separator that not only can do unequalled work, but will do it, regardless of unfavorable circumstances. Sharples is

-the only separator that skims clean at widely varying speeds.

varying speeds.

-the only separator that delivers cream of unchanging thickness—all speeds.

-the only separator you can turn faster and finish skimming quicker.

-the only separator with just one piece in the bowl-no discs, easiest to clean.

-the only separator with knee-low supply tank and a once-a-month oiling system.

Over a million users! Made and strongly guaranteed by the oldest and greatest separator factory in America. Many a Sharples has been in constant use for 25 years at trifling repair cost. Send for free Catalog to Dept. 18.



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Also Sharples Milkers and Gasoline Engines

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(ALAMAZOC

Will Solve Your Silo Problems

They're built to meet the exacting farmers' needs and are the best in design, material and workmanship-combining every desirable feature a silo should have and embodying the "know how" acquired through more than twenty years experience in silo building.

Glazed Tile Silos This construction is fire-proof, frost-proof, storm-proof, decay-proof, vermin-proof. Galvanized reinforcing. Requires no paint, no upkeep expense or repairs. First cost is the last cost—a written guarantee goes with every one.

Wood Stave Silos

Your choice of four time-defying woods. The Kalamazoo is the only factory where this outfit is manufactured complete from the raw material to the finished product. Our silos are quickly and easily erected by inexperienced home labor. All Kalamazoo Silos are made with Galvanized Steel Door Frames, continuous doors, forming safe ladder entire height of silo.

booklet, and early sales plan. Write today for our free de KALAMAZOO TANK & SILO COMPANY, Dept. 100 Kalamazoo, Mich.



Fill Your Own Silo

BE independent of the cutter crew! Thomas Gallik, Prompton, Pa., has tried this plan with great success. He says: "Have just finished my second season's cutting with Papec Cutter No. 10. I operate it with a 5 H. P. Engine and it makes a dandy outfit." The Papee is guaranteed to fill ANY height silo at 600 R. P. M. Operates on 1-5 less horse power than any other blower cutter. Sizes for H. P. engine and up—capacities 2 to 30 tons per hour. A Papec insures more and better silage. Write today for 1917 catalog—free. It tells how you can save from \$75 to \$100.

Papec Machine Co., 50 Main St., Shortsville, N.Y.

SENSATIONAL OFFER ON CREAM SEPARATORS

der any size Majestic Cream Separator yo t—no deposit—no C. O. D.—no security. Whe separator comes, work it 30 days and if you ar fully satisfied with it, send it back at our expens you will not be out one cent. If you are come ely convinced that the "Majestic" is a wonderfu

FULL YEAR TO PAY



wreka Mulcher Seeder





NEW 1917 Cord Wood Saws



Made of Crucible steel, every blade guaranteed given uniform and fough tem to the very points of the teeth Hand set and filed. Arbor hole-1%". Satisfaction guaranteed. Size Price Size Pri

SMOKERS GET BUSY! Send 25c P.O.

busy and we have no labor problem cottonseed and oil meal. when spring comes. For markets we depend on the cheese factory for sum- results by feeding cottonseed meal mer and the condenser for winter. This alone with silage and clover hay. But eliminates the fodder cheese trouble in this case you must be careful and and has proved to be a satisfactory ar- not feed too much cottonseed meal. rangement in forcing larger profits out of the business.

through an impure milk supply. Over dry up the cows. ripe, tainted and gassy milk will require from one to three pounds more to make a pound of cheese than sweet nish a good source of roughage for good flavored milk. Butter produced cows. They should not however coneven a low grade market, let alone cow should have more of a variety the other hand, losses may be traced but bean pods I am inclined to think J. H. MCKENNEY. Canada.

DAIRY PROBLEMS.

What Breed to Start With.

We are just starting out on uncleared land and for a number of years shall have only temporary buildings that will keep the cows fairly comfortable. able. Have lots of pasture from which I expect them to get their living as many months in the year as they can. Now would you advise me to start with Now would you advise me to start with the same breed that I shall expect to keep right along? And what do you think of the Guernseys? Or would some other breed do better under my conditions? One college man near here thinks the Ayrshires the thing. Yet they have never been tried out around here that I know of. I want to do dairwing on a small scale. do dairying on a small scale. Mackinac Co. C.

C. W. C. I see no reason why you should not starting with a full herd of pure-breds. feed a day of good hay. Registered dairy cattle will pay with you as well in your vicinity as anywhere. Why not? They are hardy and should bring more profit.

Any kind of a cow must be properly taken care of, but you can have cows just as comfortable in log stables as in any; the cows won't care. A stable should be warm, light, well ventilated and dry. That is all there is to it.

Good pasture is good enough for any kind of a cow. It will probably pay to feed a little grain on pasture.

Guernsey cattle are calculated to be as good dairy cattle as any. There are others just as good but none better.

Experience is valuable.

T. A. N. Oscoda Co.

I know of nothing that will take the er than by increasing the number. place of corn and oats in a ration. You can get fair substitutes but nothing quite comes up to these foods. But you can get along fairly well without corn

about half of my herd freshen during pounds of oil meal once a day and two the fall and early winter. As a result, pounds of cottonseed meal once a day I am convinced that the old practice of on their silage and allowed them all only milking the cows for a few the clover hay and silage they would months while they are on pasture is a eat. Dried beet pulp will work in this losing proposition. Here are some ad-ration by cutting down the rich vantages of an all-the-year-round sys. meals to one and a half pounds each tem About twenty-five per cent more and feeding three or four pounds of milk is obtained during the year with beet pulp. You can get some of the no increased cost of production, for prepared feeding stuffs that, by chemi-which a higher price is received. The cal analysis, will be good substitutés extra winter work keeps the hired man for corn and oats, and feed a little less

Some dairymen have reported good

Bean Pods for Cows.

of the business.

Perhaps there are many farmers who are unaware of what they lose through an impure milk supply.

Are bean pods good for cows? We are feeding them once a day and have been told that if we continue to feed through an impure milk supply.

Over the weak several tons) they will

A moderate amount of bean pods furfrom a similar source would soon lose stitute the sole source of roughage. A making any money for the maker. On than that. If one would feed nothing to bad practices and poor equipment at a cow would not do well after a while. the factory. Or it may be that the But if fed once a day and hay once a scheme of selling is faulty. It is a day you will experience no difficulty. rare system that has no leaks. All the It is not the bean pods especially that way from stable to market the farmer dry up the cow, but a poor system of will need to insert a few plugs here feeding. Bean pods are not good and there in order to save his profits. enough to be used in place of good mixed or clover hay.

Not Sufficient Protein.

Not Sufficient Protein.

I have been feeding wet brewers' grains; the milk then ran 2.80 lbs. a day. I cannot get the grains and longer and when I started giving them prepared feed the milk dropped to 2.25 in a month's time. The rough feed is corn fodder. I wonder if you could tell me just what to feed them in order to bring the milk up again?

Wayne Co.

I think the retter to 4.50

I think the ration is deficient in protein. Cornstalks are quite deficient in this food constituent and requires a grain ration that has a liberal amount. I would advise feeding distillers' grain and wheat bran mixed equal parts by weight. Feed one pound of grain for every three or four pounds of milk produced.

It is not good feeding to confine the start at once with the breed you like cows entirely to cornstalks for roughbest. If you do not care to start with age. This is not variety enough to a full quota of pure-bred or registered give best results. Cows will not do cows, you could start with a few pure- their best for any considerable time on bred cows and some grade cows, and just cornstalks for roughage. They tire then gradually build up your herd by of them and will not give maximum growing the pure-bred heifer calves, production. The price of hay would This would probably be better than warrant you in feeding at least one

COLON C. LILLIE.

FEEDING THE COW.

The well fed cow will return more profit than the poorly fed one. A poorly fed cow will often be found to give no profit. At the Ohio Experiment Station, a cow increased her milk production eighty per cent through better feeding. This increased quantity of milk cost seventy-seven cents less per hundred pounds than what she produced on the small quantity of feed and the butter-fat cost twenty-three cents less per pound. This extra feed would If you have had little experience in not have been sufficient to feed anothdairying, better work into it gradually. er cow. By feeding the one cow well about as much milk is secured as by What Will Take the Place of Corn and feeding two cows poorly. And feeding I have clover hay, silage and cotton-seed meal. What feed could I buy to take the place of corn and oats to bal-ance a ration?

the one cow well required less work, less barn room, less feed and less pas-tures. In many cases the quickest way to increase the profits from a herd is the one cow well required less work, to feed and care for them better rath-

CARE OF DAIRY UTENSILS.

Absolute cleanliness is essential in and oats as long as you have clover the care of dairy utensils. Carelesshay and silage. Feed cottonseed meal ness will result in an increase in the Order or Stamps and we will send post paid a beautiful dark rich manogany colored wood pipe, beautiful dark rich manogany colo



Simplest - Most Complete Dairy Machine

"We have milked our dairy of 48 cows for nearly two years and have never missed a milking. It is the simplest, most complete dairy machine in use. It solves the labor proposition." Frontier Farms, Erie, Pa. E. W. Merrill, Supt.

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So simple, even a boy can milk 18 to 25 cows an hour. Mean bigger dairy profits. Save where the only saving is possible in a dairy—hand labor. Its simplicity also means low cost both to install and operate.

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to 950 lbs.

skimming capacity per

hr. Shipped from Waterloo factories, St. Paul, Kansas City, Chi-

milk dries on. Where water is abun- gradually changed to skim-milk. The dant it is a good plan to fill the pails whole milk should not be fed, even to with it as soon as the milk has been the largest calf, in excess of threeemptied out and slip the strainer into quarts, or about six pounds, at a feed one of them, or in a pan by itself. Af- twice a day. The small calf, such as a ter the preliminary rinsing as describ- Jersey, does not need more than two der recommended for the purpose, ter the calf has been changed to skimby a liberal scalding with boiling water a day. Such feeding should be supplefastens the albumen in the form of a pea hay, may be given. yellowish deposit very difficult of reer after it has been used awhile.

An ideal place for milking pails and cans after they have been sterilized is place several pegs at convenient angle calf on a grain ration. around the post so the utensils may be or can to a peg, which must, of course, be sufficiently long to support it.

E. E. ROCKWOOD. Genesee Co.

TWO PLANS OFFERED FOR RAIS-ING DAIRY CALVES.

Probably the best way for the dairyfoundation cows are good producers grees F. for one-half hour and cooled products, the expense of raising the per feed twice a day. One should have such conditions existed, but this prac- a man selling milk at a high price at tice is no longer economical.

that the calves be fed whole milk for fresh milk .- Mo. Ag. College.

with cold or tepid water before the the first two or three weeks and then ed, wash the utensils in plenty of hot quarts at a feed. When larger amounts water, using some good cleansing pow- are given scours are apt to result. Af-Avoid soap as even the best of it con- milk the amount may be increased tains impurities. Finish the operation gradually to fourteen or sixteen pounds or with live steam and turn bottom mented with grain, preferably ground side up to dry without wiping. Science corn or a mixture of three parts of shows that even a clean appearing corn and one part of oats by weight. cloth may contain millions of microbes. Calves should be allowed to nibble hay The heat of the tin will quickly dry as soon as they begin to eat grain. Timthe article by evaporation in a much othy or mixed hay should be fed durbetter way. Scalding a milk vessel be- ing the first two or three months. Then fore it has been thoroughly cleansed some legume, alfalfa, clover, or cow-

The farmers who sell whole milk moval. This is also the cause of clog- have another problem. Experience has ging in the meshes of the wire strainer taught that the only method of replenand the cheesy smell of a cloth strain- ishing a herd and advancing production is to raise the heifer calves. The plan in general use at present is to feed a minimum amount of milk along a post set in the ground in a sunny with grain, or to give the calf a good spot away from danger of flying start and take the milk away after dust. Bore augur holes in the post and about two months, and then put the

Many attempts have been made to placed bottom up upon them, one pail find milk substitutes. Oil meal, blood flour, and wheat middlings or flour have made up the major portion of most of them. Those which have proved most successful have contained a small portion of powdered skim-milk. When they are fed, whole milk is given for about the first month and the calves are gradually changed to the man to maintain and build up his herd calf meal. This is fed as a gruel which is to raise his heifer calves. If his has been previously heated to 145 deand if he uses a tested sire, he can be to about 90 degrees F. at feeding time. reasonably sure that the heifer calves The amount of feed depends upon the will be good producers. But with the size of the calf, but should not be in fast advance in prices of land and farm excess of one and one-fourth pounds calves is increasing. When the young had experience in raising calves before were allowed to suckle their dams no trying this method. Such feeds enable retail or wholesale to raise his calves Where cream is sold it is suggested more cheaply than he could by feeding

It isn't a question of sentiment

It isn't a question of sentiment whether or not your cows are in the pink of condition—but it does make a big difference in your bank account. Since you are keeping cows for milk instead of for meat, better see to it that their milk-producing organs are kept working normally.

At the first sign of decreasing milkflow, look for the cause. Ten to one it is due to some trouble with the digestive or genital organs, and such disorders are best set right by the use of Kow-Kure, a cow medicine backed by twenty years of success. Try Kow-Kure on your poor milkers and watch results. Hundreds of doubting cow owners have been convinced that this old remedy has no equal for the prevention and cure of Abortion, Barrenness, Retained Afterbirth, Milk Fever, Lost Appetite, Scouring, Bunches, etc.

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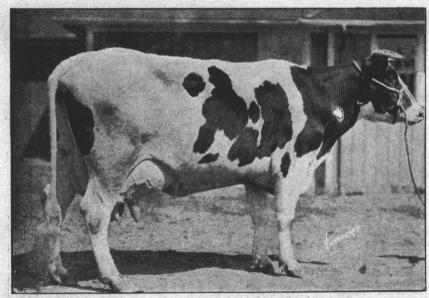


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A Fifty-Pound Cow



Segis Fayne Johanna, a Holstein-Friesian cow owned by Pine Grove Farms, New York, today is world's champion, having produced in an official test, the equivalent of over 50 lbs. of butter in one week. The test, which started December 28, was conducted under the supervision of the New York Stafe Agricultural College of Ithaca.

Up to this time no other cow of any breed has been able to attain the 50-lb. mark. Johanna's record for the seven consecutive days is equal to 50.68 lbs. of butter, and she produced in the same time 730.8 lbs. of milk. The average butter-fat percentage was 5.547. The previous high record was made by a cow owned by M. J. Smiley, of South Dakota, and falls 3.91 lbs. below the new mark.

What the 50-lb mark really means can be realized from the fact that

What the 50-lb. mark really means can be realized from the fact that there are today only 15 cows in the world that, under official test, have managed to cross the 40-lb. mark. These are all Holstein-Friesians. The record of 46.772 lbs. of butter obtained by Mr. Smiley's cow was regarded as a phenominal one, and many leading breeders and authorities then believed the

nominal one, and many leading breeders and authorities then believed the limit had been reached.

Segis Fayne Johanna is an ideal type of the big-patterned Black-and-White species; some of her pronounced characteristics being her deep barrel, square udder, well-placed teats, remarkable development of the mammary veins and her rugged and vigorous disnosition. She was allowed to go dry three months before freshening. December 22 last, and at this time had run her weight up to 1,900 lbs. Her normal weight is 1,450 lbs.

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HE FARMER who buys a De Laval this year will get bigger and better value for his money than ever before.

Not only will he get a better machine, a simpler machine, a machine that will

skim even closer than any previous De Laval, but he will get a machine of larger capacity.

And the price has not been increased one cent.

Just think what that means to cow owners in the face of rising prices on almost everything else the farmer has to buy, including other cream separators.

Only the tremendous volume of De Laval sales makes it possible to give the farmer more for his money when others are giving less.

The NEW De Laval is the culmination of nearly forty years of experience and development by the largest and oldest cream separator concern in the world. It represents

The greatest improvement in separator construction in the last thirty years.

If you are trying to get along without a cream separator, or with a half-worn-out or unreliable machine, why not get a NEW De Laval NOW and stop your cream waste? You don't need to count the c st, because the De Laval will soon pay

for itself.

There is a De Laval agent near you who will be glad to explain all the improvements and advantages of the NEW De Laval, and who will set and start a machine for you on your farm and let you try it for yourself.

If you haven't the spare cash right now, that need not stand in the way of your having the use of a NEW De Laval the rest of the winter. We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at the time of purchase and the balance in several installments—so that your De Laval will actually pay for itself while you are using it and getting the benefit from it.

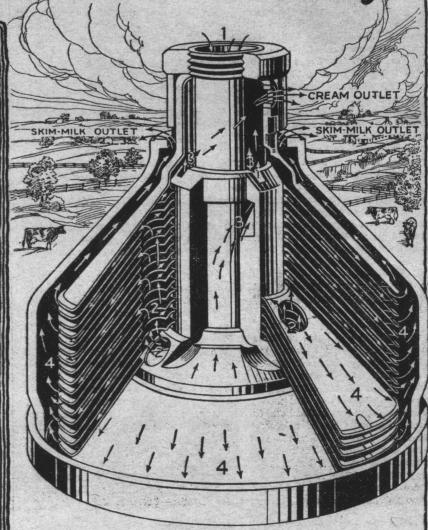
Why not see the nearest De Laval agent at once? If you do not know him, write to the nearest office for any desired information.

Every NEW DE LAVAL is now equipped with a Bell Speed-Indicator

The "Warning Signal"
which insures proper speed
and uniform cream

Because nine people out of ten turn the separator handle too slowly and because this always means loss of cream and cream of uneven thickness, every cream separator should be equipped with a reliable speed indicator.

Every NEW De Laval is now so equipped. The De Laval Bell Speed-Indicator is simple. It is accurate. It is reliable. There is nothing to wear out or get out of order. No matter who runs your De Laval, the "warning signal" will tell you when the speed is not right. You hear it and do not need to see it.



THE NEW SELF-CENTERING DE LAVAL BOWL

Some of the points of superiority of the

NEW DE LAVAL

The New De Laval bowl design and the new method of delivering the milk into the discs give increased capacity without increasing the weight or size of the bowl or increasing its speed. The incoming whole milk is delivered beyond the cream wall, and this, in conjunction with the improved design of the bowl, makes possible closer skimming than ever before especially under the more difficult conditions of separation, such as skimming a very heavy cream or separating milk below usual temperature.

The much lower speed of the De Laval than other cream separators (in most cases from one-half to one-third less) insures minimum wear of gears and much longer life of the machine.

The New De Laval concave-bottom. self-centering bowl is so designed and so supported by the detached spindle that it will run true and do perfect work even after long wear, the great importance of which every separator user will appreciate.

There are fewer discs in the New De Laval bowl, and all discs are unnumbered and are interchangeable. By reason of its simpler construction and the fewer number of discs, the New De Laval bowl is more easily washed and cleansed.

All New De Lavals are automatically oiled, every moving part of the machine being bathed in a constant film of oil. There are no oil holes anywhere on the machine, and the sight feed oil cup on the top of the frame provides for a constant supply of fresh oil.

The gears, pinions and other moving parts of the De Laval are exceedingly simple in arrangement, substantial in dimensions and always interchangeable.

The De Laval tinware is sturdy and heavily tinned, well suited for long and hard wear, and easy to clean.

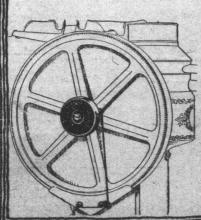
The low speed of the De Laval bowl, in combination with greater capacity for a given size and weight of bowl than is found in other separators and the automatic De Laval oiling system make the De Laval the easiest cream separator to turn.

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LITERATURE POETRY HISTORY and INFORMATION



The FARM BOY and GIRL SCIENTIFIC and MECHANICAL

This Magazine Section forms a part of our paper every week.

Every article is written especially for it, and does not appear elsewhere

Clover to a germ astride a particle of soil that was being wafted along in the current of a gentle breeze blowing over the field. The germ turn-June's voice and swung his steed to- sorry plight," here his tone softened a that it could scarcely be heard above proached in his riding habit, she was hung her head.

call of street girls? I am a genuine away from home." gentleman germ and go in high society. Were it not for the fact that I am in a had become so shaken with feeling your mouth," she hesitated, then went of some good excuse for his unbecom-

OME here," called charming June Clover to a germ astride a parti-

By M. J. ERWIN

ashamed for having been so bold and of bravado he rejoined with pride, "the went on rather hurriedly: other germs call our house 'The No-

ward the ground with a sudden jerk at bit and he went on, "kicked out of the rustle of the soft winds. His brown other one of this rich family had given ward the ground with a sudden jerk at the home by my parents—they say there is eyes met understandingly those of the his parents the site upon which to haughty look of the germ as he ap- no room for me in the big house we modest yet entrancing June. She shyly build "The Nodule." He stared blankly children helped to build." With an air raised her crimson-kissed cheeks and at the rosy cheeked maiden in the

Well, what do you want? Do you dule.' It was all so comfortable and by on your gallant steed, I recognized the wrong a right? His brain was a think I stoop to answer the beck and pretty but now—I must turn my face you as one of the influential Bacteria muddle of thoughts, yet he dare not By this time his former haughty tone coat-of-arms distinguishes you, but as mistake. Hurriedly, he tried to think

on, "seemed to droop at the corners, ! spoke, thinking perhaps there might be something I could do.'

Azoto Bacter, for that was his name, looked sad. He had taken the lovely June Clover for a street girl. Instead she was one of the rich Legumes. Angrayish-green suit. He had made a "My dear sir, when I saw you riding fearful blunder-how could he make family who live in 'The Nodule.' Your speak for fear he would make a worse

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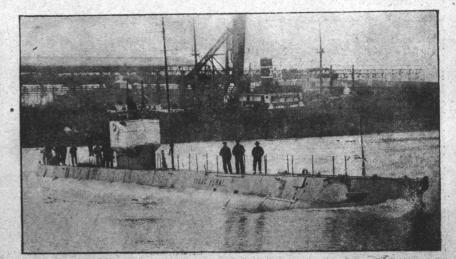
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o close estate, I offer farm of 127 Acres, nearly llage f Hanover, Mich., on main traveled road, 60 rods som depot, and 3 mile from 12 grade High School, cod stock and grain land, 5 acres timber, 25 acres seture, 22 acres lowland, 75 acres good farm land, ordering lake. Nine room house, bank barn, 30x40; taachlons for 12 head cattle; sheep barn 16x36; granty, good silo, 12x30, windmill and supply tank; 2 corne (ts, hen house, tool shed, etc. Price \$5000. Terms: haft own balance at 6%. Fred Folks, Administrator, Hanover, Mich.

THE JUDITH BASIN ree information and prices sent on request. Add k-Reynolds Co., Box W1405 Lewistown, Monta

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Orchard at Ann Arbor, Mich., 1100 apple trees, 1400 pear trees, bearing, or will arrange to have it worked on shares; good house, barn, shed and cold storage plant, but renter would have to furnish all equipment. For full particulars address, WM. INGLIS, 61 E. Woodbridge Street, Detroit, Michigan.

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IDEAL DAIRY FARM—280 acres fine level dark loam with clay subsoil, flowing well, spring stream. Best dairy proposition in Gladwin Co. Two celephone lines. R. F. D. 4 miles to Gladwin. Write at once for full description. I have other small farms. U. G. REYNOLDS, owner. Gladwin. Mich.

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a farm of 70 acres clay loam soil, good buildings;
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FARM 180 acres, Loam soil, well fenced, 20 acres wood lot, good well, good barn, 30x30 with wing 35x30 ft. Stare Silo 12x40, also stock and tools, four miles from town, Clarence Sisson, Elmira, Michigan

3100 an acre land for \$50. Good house, silo, 4 large barns, clay loam, all level. 215 A. plow land 25 A. good timber, On milk route, good road, near to market whence. Terms easy. M. Holtfurth. Howell Mich.

Georgia \$7.00 acre up, rich soil, ranches, farms, gate. H. LEE DAVIS, AIKEN, S. C.

ing conduct to her of the nobility. With knees trembling, he managed to C. quaver out, "I am so lonesome-I have no home-Oh! Please lady, forgive me for being so rude. If you can help me, I will gladly be your servant. What can I do?"

houses are all filled. No—yes, they Cup).

Class 11—Best single ear of Dent are, too. I thought the Colony house First, L. E. Wooden, Hanover. (Michwas empty but I remember that it was igan Farmer Cup).

taken last week." Suddenly, "I have Class 12—Best ear of Pickett Yellow Dent. First, Floyd Bergey, Caledonia. it!" Azoto's skies looked brighter while June rejoined: "I have one runwhile June rejoined: "I have one run-down farm that has no house on it. Pickett, Caledonia; 2nd, Leo Wooden, There are only a few mulleins that can Hanover; 3rd, Robert Duncan, Vicks-There are only a few mulleins that can be used for house making and the place is a long way back from the main road. Can you use this site?" She queried as she looked quizzically at Azoto. "It is the best I can do lop, Grand Rapids. Class 15—White Wheat.—First, C. P. Milham, Kalamazoo; 2nd, J. O. Reid, Hubbardston; 3rd, J. J. Nyenhuis, ing, "Oh, I think I can use that. Any Hudsonville place is a long way back from the

ing, "Oh, I think I can use that. Any place is better than no home," and place is better than no home," and with this he loosened the saddle from the good steed Soil Particle and turnthe good steed Soil Par ed her out to search for food. He left the main road of air and trudged weary and hungry down through the thick soil until he at last came to the root of the Clover estate. "The left root at the first right cross roads," these were W the directions June had given him.

He stepped joyfully across the boundary, glad that he could here build a home of his own. Alas, alack! The dark dismal dreariness that met his gaze caused the joy to leap from his

Grain Company Trophy).

Class 19—Any variety of rye.—First, tures, "Faring Growing," (Goemann Grow gaze caused the joy to leap from his heart, and a terrible fear gripped his being as though some perilous creature was at hand.

(Part II next week).

STATE CORN AND GRAIN SHOW.

The Sixth Annual Grain and Corn Show of the Michigan Experiment Association, now known as the Michigan Crop Improvement Association was However, the attendance was good of the state.

follows:

Corn.

(District 1 .- Southern four tiers of counties). Class 1-

counties).
Class 1—Ten ears of Yellow Dent.—
First, Earl Pickett, Caledonia; 2nd,
Glen Turner, Mosherville; 3rd, J. F.
Bugbee, Adrian.
Class 2—Ten ears of White Dent.—
First, C. P. Milham, Kalamazoo; 2nd,
M. E. Farley, Albion; 3rd, Garfield
Farley, Albion.
Class 3—Ten ears of White Cap or
any other Dent.—First, Glen Turner,
Mosherville.

Mosherville.
(District 2.—Remainder of State)

Class 4—Ten ears of Yellow Dent. First, J. H. Landes, Shepherd; 2nd,

First, J. H. Landes, Shepherd; 2nd, A. B. Shovar, Carrollton; 3rd, John Strobel, Saginaw, W. S.
Class 6—Ten ears of White Cap or any other variety.—First, George V. Rice, Portland.
(Following classes open to all state).
Class 7—Ten ears of Flint.—First, C. L. Clark, Otter Lake.

Class 8-Ten ears of Popcorn. First, F. Milham, Kalamazoo. Class 9—Ten ears of Dent. (Grown

by boy or girl under 18 years). First, Floyd Bergey, Caledonia. (Michigan Bankers' Association Cup); 2nd, Kenneth Garrett, Delton; 3rd, Glenn Whit-

by, Delton.
Class 10—Sweepstakes Premium for "Let me see," said June as she press the best ten-ear sample of Dent). First, ed her finger into a dainty cheek. My Earl Pickett, Caledonia. (Gleaner (Gleaner

Small Grains.

Hudsonville.

Class 17—Any other variety of oats.-First, Chas. Gottschalk, Saginaw, W.; 2nd, David Dunlop, Grand Rapids; 3rd, J. O. Reid, Hubbardston.

Class 18—Any variety of barley.— First, L. L. Lawrence, Decatur; 2nd, W. H. Dane, Jeddo; 3rd, David Dunlop, Grand Rapids.

E. Evans, West Branch; 3rd, Foster Armstrong, Alden. Premiums in this class are offered by Michigan Bean Jobbers' Associa-

Class 22—Any variety of soy beans. First, E. N. Evans, West Branch; 2d, 7. N. Dane, Jeddo; 3rd, J. R. Duncan,

W. N. Dane, sedde, Vicksburg.
Class 23—Any variety of cow peas.
—First, J. Robert Duncan, Vicksburg.
Class 26—Medium or Mammoth Clover.—First, J. J. Nyenhuis, Hudson-

Plans were made and adopted at the meeting with the view of making the show next year the biggest and best ever. Each member carrying on co-operative demonstrations in small grain under the direction of the College and Michigan Crop Improvement Association is requested to exhibit a one-peck sample at the Seventh Annual Grain and Corn Show to be held next year. The co-operation of all members is desired in placing a large exhibit of farm grown pedigreed grains at state and local fairs next year, thereby bringing before and demonstrating to the farmers of Michigan and other states the value and superiority of pedigreed grains.

Professor A. N. TenEyck, formerly of Kansas Station, now located at Rockford, Ill., was chief judge, with the result that everybody was more than pleased with the decisions. Two very interesting and instructive lec tures, "Farm Management," and "Corn Growing," (illustrated), were delivered by him and very much appreciated by

"Mister 44" E. J. RATH

CHAPTER XIV. Rescue.

Sadie insisted that she be allowed held at the Michigan Agricultural Col- to share in the heavy work of moving lege, January 15-16, 1917. Though a dead logs. Stoddard was obliged to rather poor crop year, the show was a consent, against his instinctive dislike decided success, especially from the to see a woman engaged in toil that standpoint of quality of exhibits, the usually falls to the lot of a lumberman. and represented practically every part sturdy arms. Without her their raft own weight. would have lacked more than one subplace.

Nor did he find the participation of preconceived notions as he anticipated. their needs. There was something rather magnificent about it as she bowed her back to the toil. Her confident young strength and her ardent will to put it forth o the utmost aroused admiration in him as well as astonishment.

He found himself unconsciously pausing in his work to watch her. She found joy in the hardest tasks and in-A. spiration in a drudgery that would have appalled the women of his own world. She knew that his eyes were often upon her, a fact that spurred her; she would prove to him her competence to live in the big outdoors.

While the heart of the little woods

that clothed their island vielded some of the material that went into the raft, the greater part was found as a result of repeated expeditions along the shore, where there were dead stumps, branches, and portions of tree-trunks, stripped of their bark and dried to the core by sun and wind. In the woods number being a trifle below normal. But long before the task was over he the fallen trees were apt to be damp was glad to have the help of her and rotted, scarce able to float their

Their work had to be done with no The principal awards were made as stantial timber that he, single-handed, tool save Stoddard's knife. An ax could not have moved from its resting- would have made raft-building easy; without it they were forced to use only the wood that nature and the elements Sadie in this labor so distasteful to his had felled; nor could they shape it to

> Stoddard selected a shallow, sheltered cove as a shipyard. Here, frequently waist-deep in the water, he began the actual putting together of what Sadie had already chistened The Ark. It was weary and often discouraging work. Such logs as he had bristled with knots and jagged branches and would not lie evenly together. The dead limbs were often small and twisted, and scores of them were needed to make up the deficiency of solid timber.

> While he thus labored Sadie combed the woods for roots, vines, and green withes that would serve to hold their makeshift craft together, for nails and ropes were denied them. It took a tremendous quantity of fiber-binding to make the Ark even reasonably secure. Now and then Stoddard would test its carrying capacity by climbing upon it, only to shake his head as it dipped from side to side under his weight.

Their big timber exhausted, he set Sadie to work tying together bundle after bundle of small dry twigs. These he thrust underneath the raft to give added buoyancy. It was like building a ship out of matchwood, but necessity gave Stoddard no choice.

As the raft grew and he found that it bore his own weight easily, he made tests with the added weight of Sadie. She was quite willing to wade into the water and clamber aboard, but Stoddard saw no need of that. Instead he went to the rock where she was standing and picked her up in his arms as



Two of King Boreas' Uniformed Subjects Doing their Fancy Skating Stunt Before His Royal Highness and His Court at Outdoor Carnival.

if she were no more than a mite of a girl.

Sadie uttered an involuntary exclamation of astonishment as she was thus lifted from her feet and borne to the floating platform of the Ark. She knew that Stoddard was strong, but this was a demonstration that filled her with new surprise. It also brought a flush to her cheeks. For the first time in her life she found herself in a man's arms; in addition she was being handled as if she were a veritable baby

Placing her in the center of the raft, Stoddard climbed up beside her. It rocked ominously; then began to settle on one side. Before the water reached their feet, he leaped off again, picked Sadie up and carried her ashore on his shoulder.

"More wood," he told her briefly.

This made necessary a new expedition along shore, where they gathered up material at first contemptuously rejected. Bit by bit they added to their craft. Engineer though he was, Stoddard had no means of calculating displacement and net tonnage for the Ark. It was built by rule of thumb, and nothing short of actual trial would prove its capacity.

Several times more he transported Sadie to the undulating, nondescript platform, always to her secret delight and wonder. It was with a little sigh that she finally received his announcement that the Ark would carry them both.

"Just how it 'll navigate I can't tell," he told her. "But it will float any-

"Could we make a sail?" she asked.
"I thought of it. But the best we can do is a thatch of balsam-boughs.
They may help a little."

Sadie promptly ran back to the camp and began dismantling her shelter in order to obtain the material. At one end of the raft Stoddard managed to erect a sort of screen, three or four feet in height, that would serve to catch a little wind.

"If the breeze holds this way we'll get some benefit from it," he said. "But you mustn't expect much speed."

"I ain't in a hurry," she answered. In fact, far from being in haste Sadie found herself, as the time for embarkation approached, decidedly reluctant to set forth at all. It was not that she was timorous concerning the seaworthiness of the Ark; she had implicit confidence in it and much pride, for it represented her own handiwork as well as that of No. 44. But she was reluctant to leave their island elysium. She had in truth fallen in love with it, and had come to look upon it as something that was her very own.

"I hate to quit it," she confessed to him. "It's like sayin' good-by to a friend."

"It was pretty friendly a couple of nights ago," he admitted. "But we mustn't outstay our welcome."

"It's been friendly all the time," she asserted stoutly. "And some day I'm comin' back to it and say 'Hello!'"

Stoddard paid a visit to the old camp at the farther end of the island, returning with the box that had been used as a cupboard. This he placed upon the Ark as a seat for Sadie. He had also picked up a few nails, with which he contrived to fasten a couple of small boards to the ends of saplings, which he intended should serve as paddles.

"Now for the grub," he declared.

The provisioning of the Ark was a trifling task. All they possessed were a few strips of porcupine and half a dozen treasured crackers.

"I'm glad an appetite don't weigh anything," observed Sadie. "If it did the Ark 'd never hold you and me, No. 44."

It was midafternoon when Stoddard for the last time carried Sadie aboard, seated her upon the box, and enjoined her to remain quite still and in no wise do anything to disturb the trim of their ragmuffin craft.

She burst out laughing as he climbed



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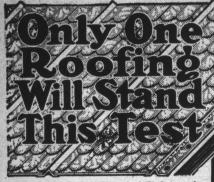
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described as the stern-sheets.

"I was just thinkin'," she said, "that ing navigation in the woods-country. you don't look much like Noah."

age I will before it's over," he answer- she declared. ed, feeling the stubble of beard on his face.

"But you won't be six hundred years old, No. 44. That's what Noah was. And it says he lived three hundred and fifty years after he got ashore. You got quite a spell ahead of you. Where do you guess we'll find Ararat?"

"Somewhere outside of Pickerel Bay, there?" I hope."

He picked up one of the paddles and As they floated clear of the island Sadie looked back wistfully.

"And the Ark went upon the face of her. the waters'," she quoted solemnly.

Stoddard looked at her with new interest.

membering. How much can you quote?"

"Just little bits in spots," she answered. "I've read it all, once over. But there's parts of it I've read lots of times—the parts with adventures in 'em."

"Adventures?"

"Sure. Why, it's just full of grand adventures, No. 44.! It's got fights and battles and explorin' and lots of excitin' things. They never had no trouble about outdoors in them days. It must 've been pretty good times, livin' without all the trimmin's."

As the Ark reached deep water Stoddard with a final thrust of his longhandled paddle against the bottom, slewed the bow gently around till it pointed in the direction of the South Arm. The wind was not dead astern, but he figured that it would serve. This proved to be the case, for the raft gathered way gradually and set off at a drifting pace parallel to the shore of

their craft. The sail of balsam-boughs breast-"and I feel it-always!" "leaked" far more wind than it held, but despite its shortcomings, it fur-times I feel it, too." nished steerage-way, and by cautious paddling he accelerated their speed a you?" she demanded eagerly. trifle. Soon the last point of the island slipped past them.

wave of her hand. "Comin' again some day."

freedom, but for the reason that it was dure. Sadie pointed. born of her own suggestion, and she thus felt a peculiar responsibility for plained. "The rest will follow by would take too long." it. As to the freedom part, she was and by." not sure that it lay ahead of them. like freedom to Sadie.

"If this breeze holds," Stoddard told her, "we'll make as far as the South laughed. Arm by sundown."

"Then what?"

right on for the hotel."

Sadie dubiously as she surveyed her ones. You don't never quite catch up, shield a match from the wind. costume. Two days on the island, com- but it's kind of excitin' tryin' to." bined with several hours of raft-buildhavoc with the he added. had played sad ıng, suit that had been so new and stylish when she left Buffalo.

"They'll fix you out with clothes," he assured her.

"Think they can fit me?"

Now that he thought of it Stoddard was doubtful. Women like Sadie were rare in the Deepwater. For that matter, they were rare anywhere, so far as his experience was concerned.

After a little while she wanted to paddle, but he shook his head. He did not manded. care to risk the balance of the Ark, nor was he sure that the fabric would hold together if the vigorous arms of Sadie added to his own efforts. She was disappointed, but he promised to anyhow." teach her to paddle a canoe some day,

after her and took his place in what he whereupon she brightened and launched into a fusilade of questions concern-

"And I'll learn to go over waterfalls, about that." "If it's going to be a Noah's Ark voy- too, like you when I first seen you,"

> glance appraising her for the hundredth time.

> "Do you suppose I could ever be a guide, like you told me about?" she asked presently.

> "I never heard of a woman guide, Sadie."

"There ain't a law against it, is

"No, I don't think there is."

"Because I'd like it better than washbegan pushing out of the little cove. in' dishes, No. 44. I'd feel like I was really doin' something."

"Guides wash dishes," he informed her.

"Maybe. But they do other things, too. Big things!"

She threw her arms wide in a ges-"You've been doing some reading, ture, as if she would embrace and hold telle. You're afraid I'll think you're Sadie," he commented. "Also some refast forever this outdoors that had not well enough dressed. You're—" fast forever this outdoors that had not well enough dressed. You'recome to her so magically from the land of her dreams.

> "I want to live where I can have all of it!" she exclaimed. "I want the Estelle; I always contrast you," he exwoods and the water and all the sun- plained. "You can't make a comparilight. And I want the nights when I son in a case like that. And it wouldn't can see the stars shinin' through the do for you to dress as they do, Sadie." trees, and its all still and sort of creepy and sets you tinglin'. And the wind blowin' through the leaves, 'stead defiance in her voice. of comin' in through the windows. And -and- Oh, I just got to have it-

> In her face, uplifted to the sky, Stoddard seemed to see her very soul. Her his meaning. She did not dare look words, the unconscious pose of her out- at him. For the moment she wished her gray eyes were happiness and wanted to run. Something made her yearning and exaltation.

Suddenly, as if for a little she had that. been oblivious to his presence, she dropped her arms and looked at him with an embarrassed smile.

Pickerel Bay was pleasantly rippled some of it seems as if it shouldn't be distressed over its disorder. by the breeze. On such a surface Stod- said, except like sayin' prayers. But dard had no fears for the stability of it's here"-she laid her hand on her anything. What was a girl expected

"I know," he said, nodding. "Some-fully-embarrassed.

"No; I wouldn't."

"Good-by, friend," said Sadie with a "Nobody could when they feel it."

ward. She was proud of the Ark and anx- green and placid in the light of the for the ears of the other kind? Yet he ious that it should acquit itself with afternoon sun, save for a spot, that hesitated; then shook his head. credit, not because it meant a way to blazed scarlet, half-hidden in the ver-

"I bet it's as proud as a girl springin" Their island had seemed wonderfully the first new style in town," was her comment.

"Then you know how it feels," he

are going well we may be able to make everybody gets 'em. By the time they

"Who?"

"I was just using an illustration."

"I get you. But who are they?" Sadie did not know that she was frowning slightly.

'Two girls back in New York."

"Friends of yours?"

"Oh, yes."

"Lookers?"

"Why-Kitty is." "And the other one?" she de-

"Not so much, although some people

think so.' "Rich?"

"They're supposed to be. Estelle is,

'Swells?"

"They're pretty strong for society." "Good dressers?"

"I guess so. I don't know much

Sadie glanced down at her cheap skirt, now shorn of its new smartness. "I believe you could," he said, his She sighed softly. She knew how tawdry she must seem in the eyes of No. 44.

She wished he had not told her of Kitty and Estelle. Of course, she understood that the girls he knew were very different from herself; that the people of his world were not those of hers.

But, even though she knew that it was false and shadowy, she had been cherishing an illusion; now it had gone from her abruptly. She saw herself once more as she knew he must see

Stoddard, watching her, understood. "Sadie," he said, smiling faintly, "you're worrying because you think I am comparing you to Kitty and Es-

"Stop readin' my mind, No. 44," she interrupted.

"I never compare you to Kitty and

"Why not?"

There was a note of resentment and

"Because, Sadie, it wouldn't be fair to Kitty and Estelle. What would they do, then?"

Slowly she reddened as she caught stretched arms, stirred him. Deep in she as quite off their little Ark; she shy and timid when he said things like

She knew he was looking down at her, probably at her hair, because her face was hidden from him. He was "I can't say it right, No. 44. And always looking at her hair. She was

> She wondered if she ought to say to do? She was painfully-delight-

mes I feel it, too."

"I guess I got to thank you for "And you wouldn't give it up, would that, No. 44," she whispered finally. "It's all right now-about the clothes."

Stoddard had it on his lips to say "Why, you couldn't!" she exclaimed. more. This woman in front of him was beautiful, and in a wondrous way The Ark moved methodically on that was utterly new to him. Why not A mile astern lay the island, tell her so? Why was such speech only

"If I tell her the truth," he thought, "we'll both be so flustered that we'll "It's a maple, turning early," he ex- want to jump off the raft. Beside, it

The Ark was moving faster, under the impulse of a wind that freshened. Sadie, to spare herself from meeting his glance, turned about on her box and peered through the interstices of the balsam-sail, watching the bluff-"No-o; not exactly. Guess you don't point ahead that marked the entrance know much about new styles. They're to Pickerel Bay. Stoddard remembered Depends on circumstances. If things high, first; then they get cheaper and that he had half a pipeful of tobacco, carefully plugged, into the bowl with a get to you-I mean me-everybody has wad of paper. He decided to smoke it. "And me in this outfit," commented 'em and the swells are wearin' new Kneeling on the raft, he crouched to

A minute later, when his pipe as "Trying to catch Kitty and Estelle," drawing safely, he looked up. Slowly an expression of amazement spread over his face.

Sadie had been sitting less than ten feet away. Now she was fifty feet away, still perched on her box and still intent upon the course ahead.

There were two rafts instead of one. Stoddard leaped to his feet, perilously rocking his half of the dismembered Ark, and shouted.

Sadie turned, gasped and started to stand up.

"Down! Sit down!" he yelled as the forward section of the Ark also tipped and swayed.

Sadie obeyed at once.

'Sit perfectly still!" he called. "Wait till I get there."

He seized one of the clurky paldles

and fell to work. The logs under his feet squirmed and strained at their lashings, threatening to fly apart as the result of his exertions. The afterpart of the Ark as almost square and balked steadily at attempts to navigate it. Stoddard found it as reluctant to make progress in any single direction as a tub. He tried sculling from the stern, and found that this threatened to split the frail platform into further divisions.

Sadie called to him; he glanced over his shoulder. She as more than a hundred feet now distant.

"Don't be scared! I'llget there."

He bent anew to the task of trying to reunite the pieces of the Ark. The blade of his paddle, nailed flimsily to the shaft, dropped off and floated astern. He turned to seize the other paddle, but found none. It was with Sadie.

The distance since he had last looked was nearly doubled. Sadie's half of the Ark was sailing serenely on, its speed accelerated by lightened weight. "Take down the sail!" he cried.

She turned and began tearing the thatch of balsam into fragments. She made short work of it, but the halves of the sundered Ark were a hundred yards apart by the time she had accomplished it.

Stoddard paddled desperately with a bare stick, but might as well have been using his fingers. Apparently he could not gain an inch on Sadie; in fact he lost more ground, because the fore-part of the raft had not yet yielded all of the momentum supplied by the sail.

"I'll try to paddle to you!"

"No! Don't touch it! You may noset."

The platform upon which Stoddard stood showed further signs of disintegrating. The withes that fastened the logs together loosened till he found himself in the position of a man trying to ride two horses. Only with a great effort could he keep the structure from splitting completely apart.

Rather earnestly he cursed himself for hasty and faulty building. He wondered now, as he saw the lashings loosen one by one, how the Ark had managed to hold together as long as it did. Eventually he was forced to abandon all efforts to propel himself toward Sadie and, instead, had to devote his entire attention to keeping his precarious craft together.

Sadie meanwhile was sitting perfectly quiet, as ordered. She was not alarmed. On the contrary the episode furnished her with some amusement, for occasionally she laughed at the frantic efforts of Stoddard to bring them together. She sat on her box with her hands folded, calling encouragement to him. She hoped he was not aware of her mirth.

Only one thing prevented him from that Sadie's half of the Ark would not swimming to join her—his knowledge be sufficient to sustain both of them He could easily reach her, but would have to content himself with clinging to the edge, his body in the water, and he could see nothing to be gained by such a maneuver.

It was near sunset. The vagaries of the breeze were increasing the distance between them. The forward and after-parts of the Ark appeared to have an antipathy for each other. They resisted all efforts to a union.

Stoddard realized that their situation was ridiculous; yet he saw a serious side, too, for if nightfall found them thus he would be greatly worried about Sadie. Before that event happened, however, he resolved that he would swim to her, so as to be near her. Perhaps, too, by clinging to her platform and kicking vigorously he might guide the way to shore again.

Sadie was calling again. He looked up. She had half risen from her seat and was pointing at something in another direction. Close to the point ahead was a canoe, moving slowly.

(Continued next week).



Automobile Insurance Is Popular Among The Farmers in Michigan

The Citizens' Mutual Automobile Insurance Company, of Howell, closed the second fiscal year with 15,337 members. The Company paid 102 claims for liability, 36 claims for fire, and 38 claims for theft during the year 1916; the Company was able to meet these claims promptly.

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of today. dency of the times has not robbed this vate citizen is confronted daily with market seems fairly well stocked, a profession of its romance.

the work and accomplishments of law- if rightly handled. Litigation could of- lawyer, when asked, "Where would you yers. The great men of early days who ten be avoided and expense spared if advise a young man to begin the pracfirst legal regulations were no common ling worth. The names of Adams, Jef- cases. ferson, Webster, Lincoln, McKinley, scores of others, are ornaments for any page, and graceful for any profession; of population toward the great centers Probably a majority of the men who gives rise to a special situation of have filled executive or legislative offi- acuteness which has never before been 182 Fifth Street ces have come from the ranks of the realized. The struggle to find a suitlawyers. The judicial department of able place to live is of absorbing inour government, of course, from John terest. Every contestant, whether he Hay to legal lights of our own times, has been in the hands of the legal pro-

> A young man, therefore, who looks to the law as a possible life work is looking in the light of worthy deeds and noble achievements. A father may feel a just pride in that son who decides to study law.

> It is a little unfortunate that the habit of sneering at the lawyer is so widespread as to almost impeach the integrity of the profession. The profession has been made to suffer for the sins of unworthy members, but in spite of that there is need of the advice and counsel of honest men who are familiar with the essential workings of the laws of state and nation.

Legal forms and processes are more or less unfamiliar to the average man. affords basis for interesting work. In Records, contracts, modes of procedure, terms used in buying and selling, show the worthy place the honest lawthe rights of individuals, the claims of the state or community upon men, and a score of other common matters need safe and careful interpretation. And when one goes into the realm of big and universities with regularly organbusiness, where gigantic interests are ized law departments. A host of young handled, the need of careful and com- lawyers is graduated every year. Some petent lawyers is even more evident.

the trickster. His is the abnormal case lished law firms are on the watch for and is outside of the usual methods of bright young men. Many a man gets treatment. But the community wel- his start in that way. Others are less comes the lawyer of honest intentions, fortunate and a long struggle is necesand will give him a warm welcome. sary before success comes. Some of The measure of his value depends up- course, gravitate to other lines of work, on the needs of the circle which he such as real estate, collections, literaserves and the efficiency he brings to ture or business. the task.

the bases of large visions for however good his intentions may be. this, too, in spite of the fact that it is young men (and young women), The lawyer can do much to safeguard estimated that over eighteen hundred The commercializing ten- the interests of all concerned. The pri- men are practicing law in Detroit. The The history of the nation is full of of these tangles could be easily solved bear in mind. An old and successful helped to form the constitution and our the right counsel could be secured. tice?" made the reply. The lawyer who wishes to keep faith men. The generations that followed with truth and honesty has a rare op- town where there is more room." them were of sturdy stock, and ster-portunity of real service in all such

city and on the farm, due to the drift knows it or not, is working under definite laws. A correct observance of fractions are made and sometimes rights are positively set aside. To help to a correct understanding is a considerable task. But the well versed lawyer finds in just such situations many opportunities of service.

The great influx of foreign population brings its problems both for the natural born citizen and the newcomer. A man whose specialty lies in handling work of that kind is in demand, and his time is well spent. The rights of employer and employe furnish the ground of another set of delicate adjustments. Accidents to workmen, or on the streets, to indivdiuals or to property, call out a well defined set of cases. Insurance, both fire and life, fact, instances might be multiplied to yer may properly occupy, and incidentally the service he may render.

The demand for men in this field of activity is met by the great colleges of these men rapidly rise to places of Of course, no plea can be made for profit and influence. Offices of estab-

The actual practice of law, so far as Rapidly changing modes of life, and cases in court are concerned, is condevelopment of resources call for care-ducted by a limited number of firms, ful legal guidance. The town that sud- the old established ones. A glance denly grows to city size is confronted over the docket of a prospective court with numerous needs. The re-adjust- session reveals surprisingly few lawment of ordinances, traffic regulation, yers' names. In such courts, for inpublic utilities and private holdings stance, as convene in the city of Deare of too much importance to be left troit, perhaps the major part of work

HE study and practice of law are to the efforts of the ordinary citizen, done is by less than twenty firms. And situations which are perplexing. Many fact that the prospective lawyer should

"Go out to some hustling smaller

Politics, now as formerly, is a road to success chosen by many. A fortu-The growing up of a tenant class in nate run for office gives wide acquaintance. Men who win in politics are fairly sure of preferment in legal practice. The number of offices, however, are limited, and campaigns sometimes come to grief. Besides, politics presents many dangers and temptations. Someone may be inclined to laugh a little at the mere suggestion of dangers and temptations, but they are not them is often impossible, unwitting in- only possible, but very often actual and real. A young friend of mine, a recent graduate from Ann Arbor law department, is hesitating just now, about beginning the practice of law, giving as his reasons:

> "I do not wish to lower my ideals." Personally, I think his scruples are overdrawn, but he sees, or thinks he sees, some of the dangers to which I

We hear, sometimes, of princely sums lawyers receive as fees for services rendered. After talking with a number of men, on that subject I am inclined to think that the compensation of lawyers is a variable amount. and in the great majority of instances bound to be meagre. Great corporation lawyers may be rich, and "criminal lawyers," so-called, may get big fees, but these are the exception and not the rule. However, if any young person is in doubt in regard to the matter, let him talk with lawyers with whom he may be acquainted. The writer remembers very well four young men, law students, and associates of his college days. All were bright and talented, stood high in college work, active in athletics, and winners in inter-collegiate debates and oratorical contests. One of them, in middle life, is a teacher of commercial law and science, in a city high school, another has a fairly good practice in a small town, but has not won fame or riches; still another keeps up appearances in an office at the county seat while his wife takes in boarders; and the fourth, a member of the school board of a large city, has a reputation for skill and shrewdness in handling real estate. I may say, in all fairness, however, that I know one or two lawyers who are said, by others, to be wealthy

It seems to the writer, therefore, after quite close observation that the law, as a profession is, like other lines of work, one of the ways in which men may truly serve their fellow men. It has its prizes, it compensates, and also its problems. The man who devotes a lifetime to its study and practice will find much to delight, charm and inspire. He will find, too, some times of sacrifice, and some places of hard, unremitting and underpaid toil.

O, yes, the law as a profession is a good choice! It will stand close crossexamination, however.

(Next article, "The Doctor's Way.")

Courage, the highest gift, that scorns to bend To mean devices for a sordid end.

To mean devices for a sordid end.
Courage—an independent spark from
Heaven's bright throne,
By which the soul stands raised, triumphant, high, alone,
Great in itself, not praises of the crowd
Above all vice, it stoops not to be
proud.

-George Farquhar.

Carl and Walter Webber, Oakland Co. Boys and their "Bag" of 16 Rabbits.



The Only Unpaid Wage Earner they also be under the under they also be under the u

tired reader from Iowa.

ing into any of her sins of omission or equal. commission I should say she was entitled to a year's vacation here and ter. They are going on the theory starting wrong, go on a strike today. now, and a crown in Heaven a little that marriage is equal partnership, Do your share, but no more, and then later.

borne five children and raised them fields, and that if they do their part it as a right, if you must. The hardsuccessfully through babyhood and well they are entitled to share equally working wife is a wage earner in the childhood is entitled to every consider- in the returns. And the young men, truest sense of the word, and the only ation whether she does any work about starting on this basis in the honey- one on record who is never paid what the house or not. To do one's full moon days, find it a much more satis- she earns. duty by five children, see that they are factory arrangement than the old feudproperly fed, properly clothed, properly darned and buttoned up, bathed daily, or even twice a week, helped at home with school work, directed in play and taught their duties to the state and God, is all that one woman should be asked to do. Of course, it is not half that 999 out of 1000 mothers do, but it is enough to tax the patience and do should his wife suddenly die, and cuts this average may be put down to nice brown. even peeved, if his wife suggests that the care of five children is real work.

When added to the work and worry of bringing up children the wife has further to do all the housework on a farm, with the lack of conveniences prevalent in most farm homes, she has more than her share. Cooking for hunments necessary to be worn in farm meat substitutes, so that she may add Cook until soft, or about two hours. If work, making garden, tending poultry and usually carrying wood and water, would pretty comfortably fill a day, if there were no babies to mind or older children to look after in between.

And when, added to this, the wife is asked to go out into the fields and help, as happens in some homes, the last word in serfdom is reached. The wife who will do this in order to make the year's work a success, is entitled to all the consideration possible to be shown by husband and children, and unlimited power to spend half the year's earnings as she sees fit.

She is entitled to these things, I say. But all too often she gets neither. Usually the wife who is willing to do all in her power, and in fact away beyond her strength, gets far less consideration than the woman who lies down on the job, says, "I can't," or "I won't," and lets husband and family worry along the best they can. These latter women get the attention and the moners are completely ignored when the around them and serve hot. crops are sold and money brought home, and she just loves to stay there. syrup,

homes. But that it still lingers in some them in a baking pan with half-inch milk gravy. is evidenced by the letters which oc- pieces of cheese on top. Break an egg young husband, make the mistake of it hot. that the wife will do everything he boils. When tender stir in a table- to be served. Dip the tomato sauce ov-

7 HAT is a wife entitled to who wants, and from asking her help as a has five children, done all her favor he begins to demand it as a own work without a girl, and right. After a few years, the wife helped in the field as well?" queries a wakes up to find herself little better than a slave, living on the sufferance Right off the reel, and without look- of an arrogant lord she married as an bad time to begin new methods. But

To begin with, a woman who has much importance as the work in the not beg for money as a favor. Demand

al system. At the end of ten years than a broken down, overworked woman who is always too tired to be pleasant and too poorly dressed to be shown off with pride.

After the children have arrived is a an arrogant lord she married as an bad time to begin new methods. But still it has been done. If you are one of the wives who made the mistake of these columns, Jell-O is so easily made on the theory starting wrong, go on a strike today. that the work in the home is of as quietly take what you have earned. Do

DEBORAH.

When the Meat Barrel Is Empty

By LULU G. PARKER

yet the average husband thinks he one-sixth of the total expenditure for could do the job successfully in his food, and the ration will then be better

But notwithstanding statistics the bill of fare which must be filled. For it is melted. this emergency the farm wife should variety to her table as well as to cut down the high cost of living.

staple. But beans are not the only sub- one egg, one scant tablespoonful of butbutter and bananas, used singly or in fry in deep fat. combinations are meat substitutes.

household

to be served. While they are boiling lightly beaten, one small onion chopprepare a milk gravy with one table- ped fine, one-half cup of strained tospoonful of sifted flour. Mix these in mato sauce this may be omitted), one a hot kettle until smooth and add one teaspoonful of salt, one tablespoonful cup of milk. Stir constantly until it of melted butter, and one cup of milk. boils, then add half a teaspoonful of Combine the ingredients in the order them in half crosswise. Arrange on a meal when neither meat or potatoes ey, while the patient long-suffering toil- hot platter, pour the sauce over and appear.

home. Father then feels he is entitled eggs, add them to one and one-half other kind, two cups of dry bread to a day or two off, and mother stays cups of milk. Dip slices of stale bread crumbs, one egg and one cup of milk, home to see that the older boys do the into the mixture and fry a nice brown. one and one-half teaspoons of salt, a chores. The baby needs her anyway, Season with salt and pepper while fry- speck of pepper and a few grains of and besides woman's place is in the ing. Serve plain or with sugar or nutmeg. Put the mixture into a but-

T has been estimated that in the spoonful of butter, a dash of pepper or United States nearly a third of the paprika, and two beaten yolks of egg. total expenditure for food of the Set away to cool. When cold form instrength, not to mention temper, of average household goes for meat. While to little balls or finger shaped croany normal woman. Indeed, it is more experts declare that with proper attenquettes, dip into the white of eggs, than the father could hire a woman to tion to marketing and choice of meat then into cracker crumbs and fry a

Cheese Croquettes .- (This is excellent to serve with the rice croquettes). spare moments, and is surprised, nay balanced as well as more economical. Melt three tablespoonfuls of butter, work in three tablespoonfuls of flour, fact remains that meat dishes are the add one-half teaspoonful of salt, a dash most important part of the menu of of pepper and one and one-half cups of folks who do farm work and other milk. Cook until smooth and creamy, manual labor, and when the meat bar- stirring all the time. Add one cup of rel is empty there is left a void in the chopped cheese and serve as soon as

> Lentil Croquettes .- Soak one-half familiarize herself with some of the cup of lentils or split peas over night. a bit of celery top or celery seed is at hand it will add to the flavor. When In the lumber camp a hard day's done drain and press through a sieve. work is often done on beans for the Add one cup of stale bread crumbs, stitutes which have the heat and enerter, a few drops of onion juice, and gy producing qualities of meat. Dried salt and pepper. Allow it to cool and peas, lentils, macaroni, peanuts, oat- shape into croquettes. Roll in crumbs, meal, whole wheat, cheese, milk, eggs, then in egg, then in crumbs again and

> Vegetable Loaf.—Two cups of boiled The following are some favorites of and mashed bean pulp, navy beans or a blue ribbon country cook and her any dried beans may be used, left-over baked beans will be just the thing. One Creamed Eggs.-Boil for fifteen min- cup of dry bread crumbs, one and oneutes one or more eggs for each person half cups of chopped peanuts, two eggs spoonful of butter and one table- mato, (if the beans were baked in tosalt and a dash of pepper. Remove the given. Form into a loaf and bake unshells from the boiled eggs and cut til a delicate brown. Serve this at a

Nut Loaf.-Mix together one cup of French Toast.—Beat two or more chopped peanuts, hazel nuts or any tered pan, dot the top with bits of but-Fortunately, this division of labor Cheese Savory.-Toast thin slices of ter, and bake until a nice brown. Turn and profits is dying out in most farm stale bread a light brown. Arrange it onto a hot platter and serve with

Spanish Eggs.-Empty a can of tocasionally find their way into this carefully on top of each piece and bake matoes into a frying pan. Thicken office. Ambitious women, anxious to in a hot oven until the eggs are set, with bread or cracker crumbs, add a be a help and not a burden on the Season with salt and pepper and serve sliced onion and a bit of pepper or a chopped green pepper. Add one teaoverdoing, forgetting that the willing Rice Croquettes .- Cook one cup of spoonful of melted butter, and salt to horse always draws the load. Friend rice in three cups of milk with a tea- taste. Let this simmer gently, then husband gets in the habit of thinking spoonful of salt added after the milk break into it one egg for each person



This isn't a fancy picture. Mamma has gone down town shopping. Nan, Betty and Bobbie are afraid she will not be back in time to make the promised Jell-O dessert for dinner, so they are

makes up into the most delicious des-serts and salads, and, as it costs only ten cents, is coming to be as generally used in small-town and farm homes as in the

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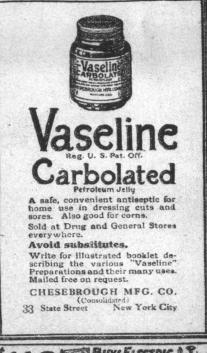
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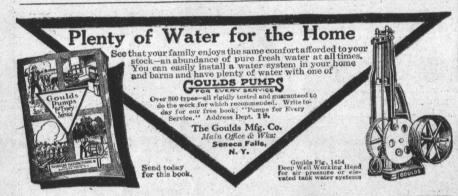
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If an inferior baking powder is used for a fine cake and the cake turns out a failure there is a waste of other materials worth much more than a whole can of the cheap baking powder.

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butter a shallow earthen dish, and fill ing women go on strike. it nearly full with seasoned mashed potatoes. Make indentations in the top THE CARE OF FLOOR COVERINGS. of the potato with a tablespoon and pour in a little melted fat or butter. Also brush the top of the potato. Drop brown on top.

CONVENIENCES FOR THE FARM HOME.

BY MRS ADA C. WORTMAN.

Next to water in the house comes the heating, lighting, and cooking ques- should not be swept very hard at first. tion. All of these have been solved by A carpet sweeper or new broom should men who know what they are doing, and the farmer who does not feel able nap. Do not be surprised if bits of to put in a furnace can still have his the rug or carpet sweep out at first, as the farm women.

There is a device now made for converting coal oil into gas, so that it can be burned in an ordinary cook stove. This device is dropped into the firebox of an ordinary cook stove, no matter it is far superior to the ordinary ker. never pulled out. osene stove, which cooks only over the tire top of the stove, and the oven as and obviates the necessity of carrying not be long before there will be a sim- the floor. ilar device for the heating stove. It

ket now which give good service and floor coverings, require padding unless the best of light. Some of them burn the floor is exceptionally smooth. Unkerosene, some gasoline, but all use a less this is done, it will be only a matmantle. There is a good deal of grief ter of time before the outline of the in learning to use a mantle lamp, but boards can be traced. If the linoleum when you have once learned the secret is a printed one, the design will wear joy as long as you use it. The main holes will appear. secret is in keeping the lamp turned smoke. The light is clear and white, laid; allow it to fit itself to the floor. just like daylight, and one lamp will

to the dweller on the farm, and there These destroy the discharges by the the wear and improves the appearance. be emptied only once a month. It is is badly faded one can use a plain colno more trouble than the emptying of ored paint. the ashes, for there is nothing offensive left. With the bath tub, the indoor toilet, and a wash stand with bowl and pitcher, the farmer need not be ashamed to show any friend into his bathroom.

quired, without touching it with the three teaspoons of baking powder. hands; the long-handled dust pan, White Cake without Eggs .- One cup floors-all of these and many more der. make for help and comfort on the Eggless Cake.-One-half cup sugar, modern labor-saving inventions. There of flour. are few farmers who would not be per- Doughnuts without Eggs,-To one

er the eggs until they are done. Serve They only need to be reminded. Those who do not supply their wives with Baked Eggs with Potato.—Grease or helps deserve to have the long-suffer-

BY DOROTHY CLARK.

It is the care as well as the wear an egg into each hollow and bake un- that makes our floor coverings wear til the eggs are set and the potato out. Take two pieces of carpet, two rugs, or two pieces of linoleum of the same kind, place them in two homes where they will receive equal wear, but different care, and you will see a vast difference in the life of the floor covering.

Axministers, velvets and Wiltons, be used and do not sweep against the meals cooked and his home lighted these kinds of rugs and carpets are without so much effort on the part of sheared when finished and some of the shearing falls back into the fabric.

Brussels rugs and carpets should not be swept until they have been used about ten days. This gives the loops time to become flattened down from wear before they are swept. 'If they what kind, and attached to a tank of are swept when first laid the loops are kerosene. The fire can be lighted, the apt to split, especially if a stiff broom kettle on, and breakfast cooking in five is used. If loose threads appear they minutes after entering the kitchen, and should be darned down or cut off but

Should the edges of your carpet or burner. The gas device heats the en. rug become frayed out bind them at once. Beating them on the line at well, to any degree of heat required, housecleaning time or allowing them to hang in a high wind often causes kindling, ashes and fuel. It is a boon this, therefore the edges should be to the farm woman. I dare say it will carefully examined before returning to

Be sure that your rug or carpet is is not necessary to make any changes well padded with the paper carpet linin the stove—just set the device in the ing or other suitable material. This firebox on the grate, and it is ready makes a vast difference in the amount of service you will get out of the rug There are several lamps on the mar- or carpet. Linoleum as well as other your lamp is a thing of service and a off along these lines and after a little

When purchasing linoleum in severe low enough so that it will never smoke cold weather it should be placed in a and after several trials you will learn warm room for a day or more before just how high to turn the wick in order it is unrolled, or it will break. Do not to get the maximum of light without tack linoleum down as soon as it is

Dirt of a gritty nature should be light an ordinary room so brightly that swept up at once so it will not become you can read in any corner of the room trodden into the linoleum. When washwith ease. I think one mantle lamp ing, use soft cloths and do not use will give more light than ten ordinary strong powders. Do not allow the floor number two lamps, and it is such a to become flooded with water, lest clear white light that it does not tire some of it should run around the edges or seams and get to the back where it An indoor closet is another blessing will loosen the burlap foundation.

It is a good plan to go over linoleum are a number of styles which can be once or twice a year with linseed oil used in a corner of the bath room, or linoleum varnish. This lengthens use of chemicals, and the closet has to On printed linoleums where the design

HOME QUERIES.

Cakes Without Eggs.

Applesauce Cake.—One and a half cups of apple sauce, one and a half There are so many other helps that cups of sugar, half cup butter, one cup may be briefly mentioned—the gaso- of raisins, half teaspoon each of nutline or kerosene iron; the bread mix- meg, cinnamon, cloves, pinch of salt, ers, which mix the bread stiff as is re- two and a half to three cups of flour,

which can be used without stooping; of sugar, one cup of sweet milk, three the vacuum sweeper; the dustless tablespoons of butter, two cups of siftduster; the oil mop for wood work and ed flour, two teaspoons of baking pow-

farm. It is high time that the women one teaspoon of soda stirred in one cup of the farm came into their rights, and of buttermilk, half cup of shortening, insisted upon having a share of the pinch of salt, cup of raisins, two cups

fectly willing to invest in such helps if cup of granulated sugar add one and a it were brought to their attention, half cups of sweet milk, one cup of mashed potatoes, and butter (melted) in potatoes), the size of an egg. Mix well, then add five level teaspoons of baking powder and just enough flour to roll. Flavor with nutmeg.

The following old family recipe calls for eggs, but is so good I pass it on:

Dough Cakes.-Three small cups of granulated sugar, one large cup of butter, three eggs (save whites of one for frosting), half cup of buttermilk, two teaspoons of cinnamon, one teaspoon of allspice, half teaspoon of cloves, one pint of bread dough raised very light. In mixing the cake set the yeast for the dough over night, and make as thin as possible as it will work into the cake better. Add other ingredients to the dough. The butter should be melted and allowed to cool. Add flour until the batter is a trifle thicker than for a layer cake. When the cake is cool; cover with the following frosting: One cup of raisins chopped very fine, one cup of sugar, four tablespoons of water :Boil sugar and water until it hairs, pour over the stiffly beaten egg white, and while still hot pour all over the chopped raisins and let set for five minutes. Then spread on cake.

HOME QUERIES.

Household Editor:—Can anyone tell me how to make Javelle water for bleaching linen, and how to use same without injuring the fabric?—Mrs. E. P., Hillsdale County.

Javelle water is made as follows: Mix thoroughly one pound of sal soda, one-fourth pound chloride of lime and two quarts of cold water. Let stand several hours and then pour off clear liquid and bottle for use. Keep in a cool, dark place. It will not injure the fabric if the article is not left in long, then rinsed quickly in cold water and lastly in ammonia water. You can use one pound of pearl ash instead of the sal soda if you prefer. The water is also good to clean out sinks and stained cooking utensils.

Household Editor:—How can a good rich pie crust be made without the use of lard?—Subscriber.

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veniences work savers. And they are big work savers, too. Here's add-ed value in Old Trusty Incubator—already the leader of the world in high quality at low price. 700,000 satisfied But what I want you to know about is my



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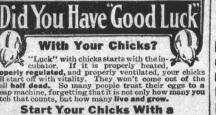
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the grain fed to them looms up out of poultryman. proportion to its sightful value as compared with the receipts. A simple rec- I always kept a record of how much their egg production. The Result of Poor Feeding.

Orpingtons that had given me a net less feed. profit of \$1.50 each that year, when I stock, and get half the receipts. From needing a change. the very start I could not get him to feed more than half enough. Every time he would send in a bill of the feed he would write that he feared I would think the bill too high, but I had wanted them fed heavily; making excuse His birds have plenty of time to mafor feeding so much, when he had fed but half as much as I had expected him to feed that number of chicks. I would write to that effect and urge heavier feeding, but it seemed that that farmer couldn't possibly make himself feed those chickens all they wanted to eat. ing the average production is increas-The broilers that I expected to come on in time for high prices came in with at a good profit. the rush and brought ten or fifteen cents a pound less than they would if they had been fed well. One day I was out there and he was carrying a bashens coaxing him for something to eat. He had fed the hens, and I mentioned eat a bushel of corn right down if I hatched will be stronger, mature quickwould give it to them."

Plentiful Feeding Necessary.

I discovered it was perfectly useless to argue with him, and concluded to let him go his way for the season, hop- it is hatched from an egg in which the ing to break even. I got better prices germ cell has been weakened by heavy for the eggs than the year before, and laying, the hot weather stunts its whole flock than I had received from it is susceptible to colds, etc. As early my flock the year before. My hens chicks do not start laying until late, were not fat when he took them, yet they only have a short period to disthey averaged close to six pounds each, tribute their production, hence a few while my half of his flock when we eggs. sold them after the breeding season, If you will study your birds closely, averaged less than four pounds. I had you will find that the late hatched are kept a record of the cost of feed for not developed as the early birds in my hens, and I knew that less than ten growth of body and comb, etc., and are cents per month per hen would not the first to stop laying in July, while keep them in condition and make them the early bird, generally the high prolay, but thirty or forty dollars a month ducer, lays until September or October. for feed for hens seemed like throwing Over 75 per cent of the high producers money away to him. I sold two dollars in an experiment at Cornell were those worth of eggs for hatching from each starting to lay before January 1.

O department of the farm busi- just before he took them, but we sold a ness is so greatly michigand as trial. ness is so greatly misjudged as trifle less than ninety cents per hen the poultry. In other depart- from his flock, and I received \$4.00 per ments the tendency is to overestimate hundred for his eggs and only \$3.50 for the profits, but in the poultry depart- mine the year before. I had a customment underestimation is almost uni- er for every hatching egg produced, versal. The reason for this is easy to too. He was perfectly honest, and understand; money for the products of meant all right, but he just couldn't the other departments comes in large bring himself to feed the hens like he sums generally, and the expenditures would have fed hogs or cattle. We are distributed over a long period; on were mutually willing to quit, he with the other hand, the products of the a poor opinion of the poultry business, poultry yard are marketed in dribs, and and I with a poor opinion of him as a

Keep Poultry Records

The Value of Records.

ord of the poultry business for a year feed I gave the hens, and if they failor two would give a different impres- ed to eat it up at times I would give them a change, not cut down on the There are other values to be derived ration. My hens were never hungry from the record of still more import- enough to force their way into the hog ance than simply knowing what our pens to eat, for they didn't have to. hens are doing. This knowledge ena- My records showed that, summer or bles us to conduct the business intelli- winter, the flock paid its feed bill evgently. We can soon tell whether the ery month, and generally had somehens are giving us the returns they thing over for their keeper. If they should for the feed they consume, and averaged below a dozen eggs each per if they are not it is time we found out month from July to January they were the reason why. Experimenting will not up to the standard, and I hustled tell us what ration gives the best re- them a little by tempting their appesult, and what amount of feed is need- tites with something new. After Janed to keep the hens at the height of uary they always came up rapidly on their egg yield and held up until after the breeding season. Keeping hens is I have had rather sad experience in just like fattening hogs; it is to your this line. I had a fine flock of Buff interest to get them to eat more, not

Learn the feeding value of the difmoved into the city. I could not take ferent grains and meat meal and use my hens, so I arranged with a farmer accordingly, and plan to use the cheapto take my pure-bred flock, selling off er grains as much as possible. If corn his mixture. He was to rear the chick- is plentiful, feed corn, but remember ens, for which I supplied the eggs, as that corn is short on protein and sup-I kept my hens until after the breeding ply it with milk or meat meal, both season was over, at the market price more economical than grain to supply of hens. I was to market the eggs this element. Wheat is richer in procommercially except in the breeding tein and needs less milk or meat meal, season when I was to market the eggs but it is an expensive feed generally, for hatching. Each was to bear half and I used it only to boil for a treat the expense for feed, own half the at times when I thought the flock was

L. H. Совв. Kansas

EARLY CHICKS.

(Continued from first page).

ture, and lay during the winter. Sometimes they start laying in the fall and lay thirty or forty eggs, then moult in December. They can, nowever, be used as breeders with good results the following spring. By this early hatch-

There is a time to hatch chicks just as there is a season to plant corn, and two weeks makes a difference in ket in the barnyard with a flock of growth and maturity that often cannot be caught up.

ed to 120 to 150 eggs, which are sold

During the early part of a hen's laythat the hens seemed hungry. "Oh, ing period the eggs' germ is strongthey are always that way; they would er than toward the end, and the chick er, and have a long period to distribute her egg production. The mortality is also lower

The late hatched chick is weaker, as we had double the number of hens, yet growth, and it doesn't have time to mahe receipts were a third less from the ture before cold weather. Being weak

of my hens during the hatching season The highest market price for eggs

is obtained from September to January. Early hatching means an extra, investment for a number of hens to obtain sufficient eggs often in unfavorable weather, and the necessary incubating and brooding equipment, but it FRANK DU BOIS.

RATIONS FOR LAYING HENS.

I have a nice lot of pullets and a few yearling hens that I intend to winter and I would like very much if you would send me the formula for a balanced mash that I can feed either dry or wet, and not too expensive. I have tried several mashes but have not had good success in getting eggs, and I think they were not balanced right.

Berrien Co.

O. J. M.

The following mash is a good one for feeding laying hens: Wheat middlings, two parts by weight; bran, one part; corn meal, two parts; beef scraps, two parts; alfalfa, one part. This mash should be kept in hoppers before poultry all the time, and besides the hens

should receive feedings of grain morning and night. A good grain mixture is equal parts of wheat, corn and oats. Very often one feeds the poultry the proper food, but still does not get results as far as egg production is con-

cerned. This is because there are oth-

er things beside feed which are neces-

sary to make the flock produce eggs in winter.

For instance, the coop should be dry and well ventilated and free from all drafts, and everything about the coop should be kept in a sanitary condition. The hens should also be kept busy, and should be made to work for their grain. The best way to accomplish this is to throw the grain into deep litter. They should also have a supply of green food every day and sour milk should be fed if available, as it is one of the best egg producing foods known.

If the hens have not been bred for egg production, it is sometimes very hard to get results, regardless of what method of care has been used. People who have the greatest success with hens have paid special attention to keeping hens having an ancestry proficient in this respect.

FEEDING COAL TO LAYING HENS.

I had quite a little experience with feeding coal the past winter. During the forepart of the winter we were getting the ordinary number of eggs, when my husband put in our winter supply of coal. He got some of the slack, and not thinking it would do any harm let the hens run to it whenever they wished. They liked it very much and, in fact, would leave the corn and eat the coal in preference. As soon as they began eating the coal they ceased laying, but healthier or brighter hens I never saw, but when I would kill one I would find the egg pouch all dried and with no sign of eggs.

It was a mystery to me for some time as to why I got no eggs, for they were all healthy. I did not get an egg for nearly three months, when one day my husband said he did not see why the hens liked the coal so well. I wondered if it could be the coal that could have been the cause of the falling off in egg production. So to find out we took the coal away from them and in ten days we began to get a few eggs. Just as they began to recover from the influence of the coal ration, we began to get more eggs, until we got the usual number.

I feed a mixed ration of oats, barley, wheat and corn, with green food and mash once a day and some good egg tonic twice a week, and I have always had plenty of eggs in winter before.

I know charcoal is excellent for hens, with plenty of grit and oyster shell, but mine would leave everything else for the unburnt coal, and their droppings would be as black as coal.

I wonder if anyone else has ever had the same experience as mine. As it does not pay to have such experience I hope this may be of benefit to others. Calhoun Co. Mrs. C. F. S.

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Not a "bargain sale," but the most remarkable offer ever made by any reliable manufacturer of Poultry and Stock Regulators and Remedies. We are making it now—at tremendous cost to ourselves—in order to give you positive, practical proof of the real merit of our goods.

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Pratts Standard Preparations For Poultry and Live Stock

you will be convinced because you will have the evidence right before you. The results of the test will carry conviction better than all the arguments or promises we might present. If you really wish to know how to increase your profits, just try this plan now. Take the signed coupon and 50c to any Pratt dealer—there is one near you—and he will

give you your choice of either assortment of Pratts Preparations as stated in the coupon. Each assortment has a retail value of \$1.85, but now costs you but 50c. We stand the greater part of the cost, since we credit the dealer with \$1.35 for each coupon returned to us.

This Offer Good Only During February 1917

and each household is entitled to use but one coupon. Good only in the United States and Canada. The goods you will receive are standard packages taken directly from the dealer's stock. We have been in business nearly fifty years and have never before made such an offer. It may never be made again. Your big opportunity is NOW! See your dealer at once.

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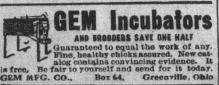
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Poultry on the Farm

few know how valuable it is. Do not keep chickens with long crowthat no record is kept. Also poultry is bodies or undeveloped combs. Do not not given a fair chance; by this the throw out a hen that is in good condiidea that an expensive poultry plant is tion just because she is old. In selectnecessary, is not meant to be convey- ing hens for layers those that moult ed. By a systematic study of the new late, say after October 1, are considerand practical methods employed by ed best. poultry raisers, the conditions of our poultry could be greatly improved.

Most farmers realize the importance poor results will follow. of thorough-bred stock, but few farmers use the same good judgment in cornfields and meadows are ideal for breeding their chickens. Thus chick- this, and the chickens are more of a

OST farmers keep poultry but to cull out the undesirables each year. This is due largely to the fact like heads, dull eyes, thin legs, short

It matters very little how good the breed is, if their housing is not good

The fowls need a large grassy run,



Feeding Poultry is an Interesting Diversion to the Young.

ens of all sizes, ages and colors are help than harm on such grounds as seen on the average farm.

Get Breed You Like Best.

To obtain best results select the breed you like best. It doesn't matter but usually those chickens eat more as well as lice and mites. than the smaller breeds. Then, taking any cross you can make with them.

The main point in successful chick- are good. stock raised from them is apt to inherit a tendency toward disease.

Use Two-year-old Hens for Breeding. It is claimed that best results are ob-

tained by breeding two-year-old hens in order to induce the fowls to work. instead of yearlings. In the first place you have an opportunity for proving first year they are quite apt never to regularly. be. In the second place the fowls are years old, thus the stock obtained from

To keep the breed pure and free directions. from ill-formed fowls, it is necessary

they destroy many insects that would prove injurious to the crops.

Keep Coops Clean.

There are so many different types of much which one as all have good and houses for chickens in use that it is bees cannot be overestimated. Throughpoor points, that nearly, if not quite, quite unnecessary to describe any. out the United States beekeepers lose make a balance. To be sure, some Most any farm "hen house" maybe at least ten per cent of their colonies breeds lay more than others, but it is transformed into comfortable poultry and in many cases as high as fifty per usually at a time when the price of quarters. There are however a few cent, due largely to carelessness and a eggs is low, while those that lay a less things that are necessary, among them lack of knowledge of proper wintering number usually lay them when the are cleanliness, ventilation and sun-conditions. This loss is avoidable and price is higher. It is true that some light. No chickens can thrive in althy should be reduced to less than one per breeds furnish more meat for the table houses as dirt always breeds disease cent if a few simple precautions are

If the chickens run over a large is gained by mixing breeds. Any of er must make the best of the grains cular exerition is furnished by food. the standard breeds will lay more than grown in his locality. All grains, such

milk or sour milk. If this cannot be find their way back. had, beef scrap will do.

green food, such as sprouted grain, quently more heat must be generated them. If they are not good layers the cabbage or sugar beets, should be fed by muscular exertion and more food

If the above conditions are observed

and the same amount of time that was used in the past is used systematically in the future, there is no reason why the farmers can't produce just as good poultry as anyone who makes poultry a specialty.

Eaton Co. E. BITTERMAN.

THE MEDICINAL VALUE OF SOUR MILK FOR POULTRY.

The value of sour milk in the ration for poultry of all ages is not fully understood. Not only does it supply considerable material for egg production and muscle building but it also possesses curative properties for certain bowel disorders. It is well known by certain growers as a useful agent in controlling diarrhoea, that scourge of the newly hatched chick. Supplied regularly it is equal to anything on the market for this purpose at a fraction of the cost. Moreover it has been known to cure cases clearly diagnosed as cholera in adult fowls, without any of the regularly prescribed remedies being given. One case which came under the writer's notice may be stated. A few hens in a certain flock developed the disease which was unsuspected until they became greatly emaciated. In fact, one of them was so weak when the caretaker discovered the true cause of the trouble that she could not walk. These fowls were at once isolated and as the merits of sour milk had been previously tested in cases of diarrhoea it was decided to give it a trial with the case in hand. The only food the birds received was clabbered milk, nor did they receive any medical aid of any kind. After a few days marked improvement in the nature of the discharges was seen and the fowls began to gain. Gradually they were brought back to their regular ration, but the milk was continued until they were completely recovered. Since then the curative properties of this article, so plentiful on almost every farm, have been repeatedly shown until by the writer it is considered an almost certain specific for bowel disorders of E. E. R.

CAREFUL WINTERING REDUCES BEE LOSSES.

The importance of care in wintering heeded.

Bees cluster at a temperature of 57 everything into consideration it will be range it is quite probable that they get degrees or lower to keep up the temfound that one breed is about as good suffcient food to do them from morn-perature of the hive and to reduce the as another. But whatever breed is se- ing to night, providing they are given radiation of the heat produced by muslected should be kept pure. Nothing liberal feeds then. In winter the feed- cular exertion. Energy for the mus-

Sufficient food is essential. Every as corn, wheat, barley and buckwheat colony should have at least thirty pounds of honey. White clover honey en breeding is strong, vigorous stock. A ration for laying hens should con- is best although any white honey is Nothing is gained by scrawny, poor- tain the foods necessary for the forma- good. Dark honey should be used sparlaying stock. It is well to remember tion of the egg and at the same time ingly; and honeydew honey not at all, that the defects in poultry is quite apt maintain the life of the bird. Such on account of the waste it contains. to be found in their progeny. Fowls foods as wheat bran, cut alfalfa and Bees never deposit fecal waste in the that have been cured of some disease the animal foods, help to supply the hive, but retain it in the large intesare all right for market or table, but deficiency of protein in the grain. If tine, where it causes dysentery unless are unfit for breeding as the organs much corn is fed it is better to have soon passed out. In attempting to rid that were diseased are very apt to suf- it coarsely cracked. Nothing is better themselves of this, the bees fly forth fer from disease in the future, or the to supply the animal food than butter- on cold days, become chilled and never

Lack of protection does not kill di-A litter ten or twelve inches deep is rectly and this fact has caused some necessary in which to scatter the grain beekeepers to imagine that bees needed no winter protection. Lack of pro-During the winter months some tection causes a loss of heat, consemust be eaten to supply the energy. Care must be taken to keep the wa- This overeating causes dysentery and not thoroughly developed until two ter pure. It is best to keep the pans other intestinal disorders harmful to away from the litter as the fowls do the colony, which may die or come them will not be as strong as required. not hesitate to scratch the straw in all through the winter too weak to produce much surplus honey.

Protection may be given by cellar

wintering, or by insulating the outdoor hives. The cellar should be dark, dry, well ventilated and kept at an even temperature of about 45 to 50 degrees. Hives may be insulated with a chaff hive, several thicknesses of tar paper, several inches of leaves, straw or excelsior kept in place by boards, wire netting or a packing case. An exit in all cases is necessary. Weak colonies are best wintered several under one cover and separated only by wire screen.

If from any cause the queen dies or is incapacitated in winter, the colony has no means of providing itself with another, and must soon die. The beekeeper should see that every colony has a vigorous young queen before going into winter.-Mo. Ag. College.

LIMBER NECK.

What is the disease that causes the trouble with our hens, and is it contagious? They twist their neck around and look up in the air as if they were trying to twist their neck off. One has gied with it, and two more have the same trouble.

Eaton Co.

Eaton Co. One of the most common causes of hens twisting their heads about is ptomaine poisoning, which is brought about by the birds eating spoiled or decaying food. This trouble partially paralyzes the muscles so that the chickens have no control of them, and in addition to the twisting of the neck, an unsteady gait is one of the symptoms of the trouble. Strychnine poisoning may also cause a lack of control of the neck muscles.

Of course, in either case, if the cause of the poisoning is not removed, the chickens will die and others in the flock will take on the trouble, but in neither case is the disease contagious.

This trouble is usually called "limber neck," and is very difficult to treat. The most satisfactory way of control would be to kill the birds affected and make sure that there is no poison about which the hens can get, also be sure that the food and water is sweet and clean. If all the food is not eaten at a meal, it should be cleaned up before it spoils.

FEEDING SPROUTED OATS.

During a dry season when the flocks of poultry are confined to yards it is often difficult to keep up the supply of green food. The yards become hard and bare and the necessary green food in the ration must be supplied from other sources. During a recent visit to the college experiment station the writer observed one of the caretakers feeding the yarded fowls on sprouted oats and the birds appeared to be in the finest of condition. The yards in many cases were entirely bare but the oats seemed to be a substitute for the green food that the birds would have gathered on a free range and they seemed to be making an excellent growth

In one of the small poultry houses wooden trays with screen bottoms were placed on long shelves. In these trays the oats have been sprouted during the summer without artificial heat and not a tray examined showed any sign of mould and the green food produced could scarcely be excelled for poultry. Many poultrymen prefer to use green food like mangels or cabbages which are more easily prepared for the flock but in cases where vegetables are lacking the fine green blades from the oats are greatly appreciated by the hens.

In the winter sprouted oats are valuable in the ration and they can be fed to advantage in varying the diet, even when the poultryman is well supplied with other green food. Oats at the present prices can still be used to advantage for sprouting for the flock, if the birds lack a range and have no other green food. R. G. KIRBY.

Ingham Co.

Wins in the Two BIGGEST HATCHING Contests Ever Held

Why take chances with untried machines when for only \$11 we guarantee to deliver safely, all freight charges paid (East of the Rockies) BOTH of these big prize winning machines fully equipped, set up ready for use? Why not own an Ironclad—the Incubator that has for two years in succession won in the GREATEST HATCHING CONTESTS EVER HELD? In the last contests conducted by the Missouri Valley Farmer and Nebraska Farm Journal, 2,000 Machines were entered, including practically every make, style and price. With the Ironclad—the same machine we offer with Brooder, freight paid, for only \$11 - Mrs. C. F. Merrick, Lockney, Texas, hatched 148 chicks from 148 eggs in last contest.



-Ten Years Guarantee You have nothing to risk. We will send machines—let you use them 30 days—urge you to compare them in quality of material, hatching ability, workmanship and price—and if you don't find them satisfactory send them back—we'll pay the freight charges and return your money. You are absolutely safe. We have to do as we advertise. If we didn't the publishers of this paper would not carry our advertising. CALIFORNIA CALIFONNOOT

his Book

Just Look

At All The Fine Chicks

My Mamma Hatched



With Her

X-RAY!

150-Egg Incubator—150-Chick Brooder

and Boilers

When an incubator is constructed of material of this kind it gives you the strongest and most durable incubator that can be made—a machine that will not warp or shrink, or open up at the seams, as every joint is lapped over with our galvanized iron covering—giving you a machine that will last a life time. Don't class this big, galvanized iron covered dependable hatcher with cheaply constructed machines. Ironclads are not covered with cheap thin metal and painted, like some do to cover up poor quality of material. Ironclads are shipped in their natural color—you can see exactly what you are getting. Don't buy any incubator until you know what it is made of. Note these Ironclad Specifications: Genuine California Redwood, triple walls, asbestos lining, galvanized iron covering. Galvanized iron legs, large egg tray, extra deep chick nursery—hot water top heat, copper tanks and boilers, self-regulator, Tycos Thermometer, glass in door, complete book of directions, and many other special features fully explained in free catalog. Write for it today or order direct from this advertisement and save time.

IRONCLAD INCUBATOR CO., Box 117

Racine, Wis.



Chicks From 14 Eggs!

Photo by Mrs. Fred C. Miller, Hillsdale, N.Y., showing result of X-Ray hatching. It should carry a message home to you. If you want the biggest hatches—and want to gain them at the least cost of money and time, you should, in all fairness to yourself, investigate the X-Ray.

Makes biggest hatches on one gallon of oil—one filling. Fill tank, light the lamp and you are through. Duplex Central Heating Plant directly underneath, furnishes natural, moist mother-hen heat. X-Ray Automatic Trip regulates flame—no cold corners—no overheated sides.

X-RAY INCUBATO

Fitted With 5 New 1917 Features—and Possessing 20 Improvements That Assure Bigger Hatches

andy Height—Achieved by deep lid that retains heat—ables egg-tray to come back to batching heat quicker.

lick-cooling Egg Tray—Level—easy to turn eggs—built the in frame, protected by new, deep lid—built of heavy transed wire mesh, tray—Absolutely sanitary—great convenience in noving chicks—provides ideal place for "dryingout" chicks whole tray easily removed and kept "clean as a whistle," stantaneous Egg-Tester—Reveals egg-fertility at a nuce—no trouble—least disturb—

ward and attaching the Patented X-Ray Egg-Testing Device (furnished free with every X-Ray Incubator) to lamp. X-Ray Gas Arrestor-Simple, yet marvelously perfect-positively prevents entrance of even one lota of gas or rumes from lamp into egg chamber. Investigate this incubator before you put your money into any incubator. Writs for the 1917 X-Ray Book. Send us your name and address on the coupon—or on a post eard.

DO THAT TONIGHT!

orbie-least disturbaall accomplished by
tank and lamp fortank and lamp for
crowd into the center-prevents injury to chicks due to crowding—X-ray Gas Arr
that keeps chick chamber free from drumes—New 1917 Canopy Top over exercising
room that gives protection from draughts and excessive sunlight.

WRITE TONIGHT—Get the 1917 X-Ray Book and he sure you are get-ting the best incubator and brooder any money can buy. X-RAY INCUBATOR COMPANY

Express Prepaid to Practically All Points

St. or R. R. No

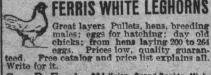
B. R. Cockerels best breeding: \$3 each, 2 for \$5, a. A. WOOD & SON. SALINE. MICH.

Bred to Pay Hatching eggs from my S. C.W. Leghorns 75c per 15. Cockerels \$2.00. White Line Poultry Farm, Hillsdale, Mich

"200-EGG" PEDIGREE WHITE LECHORNS

Several hundred choice White Leghorn pullets and cockerels for sale. These are from our "Bred-to-lay" strain, all sired by Missouri Experiment Station males with pedigrees of 20 to 214 eggs in one year. Pullets-51.00 to 51.50 each. Cockerels—\$2.00 each. Thousands of satisfied customers. Book your order at once for eggs for hatching and baby chicks of quality. Catalog. Michigan Poultry Farm, Lausing, Michigan "Michigan's Largest Poultry Farm"

Fowler's Buff Rocks A few choice sale, From \$2 to \$5. Also eggs in season. White Holand Turkeys all sold. R. B. Fowler, Hartford, Mich.



Geo. B. Ferris, 934 Union, Grand Rapids, Mich.

FOR SALE: R. C. Brown Leghern cockerels \$2.00 cach. B. P. Rock cockerels \$2.00 cach. E. Bellen, Whittemore, Michigan. FOR SALE Pure bred White Plymouth Rock Eggs for Hatching in season. CHAS. KLETZLEN, BATH, MICH.

Buff Leghorns Cockerels, cock birds, hens, pen or pullets. All at very reasonable prices. Dr. William A. Smith, Petersburg, Mich.

EGGS for setting from R. C. Brown Leg horns, leading strains in America Also W. Ohina'Geese and M. Pekin ducks. MRS. CLAUDIA BETTS, Hilledale, Michigan

HARRISON WHITE LEGHORNS \$20.00 for 20 yearlings or pullets. Cockerels 75c to \$1.50 Prices on these fine birds will be higher soon. HARRISON LEGHORN FARM, Shelby, Mich.

Improve Your Poultry. My Young's Strain S. C. White makers. Strong, vigorous, bred-to-layktock, Baby chicks St o 511 per 100. Satisfaction guaranteed. Large orders filled. Free catalogue. W. Van Appledorn, Holland, Mich., R. 7, Box 141.

TOHN'S Big Beautiful Barred Rocks are all hen hatched, developed quick, good layers, each \$3; pair \$5; solo on approval. Circulars, photos. John Northon, Clare, Mich

AYBILT S. C. W. Leghorns, large, great lavers, pure L white. No more—no less. Selected hatching eggs. Strong day-old chicks. Everfresh Egg Farm, Ionia. Mich.

Mammeth Bronze Turkeys and Toulouse Geess. A few Berk-shire gilts and sows. Chase Stock Farm, R.1. Marlette, Mich. Pine Crest White Orpingtons—pullets ready to lay, sell to make room for breeding pen. MRS. WILLIS HOUGH. Pine Crest Farm, Royal Oak, Michigan.

Plymouth Rock Cockerels Barred, White and Partridge, Pure bred. Sheridan Poultry Yards, Sheridan, Mich.

PHODE ISLAND REDS and PLYMOUTH ROCKS
Males 5 to 12 lbs. according to age \$2 to \$5; P. R. hemweight 5 to 10 lbs., eggs 15 for \$1.00; 100, \$5; 120, \$5
Mammoth Bronze Tom Turkeys, 8 to 881bs. according
to age \$6 to \$25, 10 eggs \$3. A. E. Cramton, Vassar, Mich

Ross and Single Comb R. I. Red cockerels for sale Fine stock, prices reason able. O. E. Hawley, Ludington, Mich.

Rose Comb Rhode Island Red Cockerels. Rose and Single Comb Red pullets and hens. JENNIE BUELL, Ann Arbor, R. S., Mich.

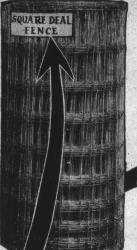
ROSE Comb Reds exclusively sixty large dark cherry red, breeding cockerel, price \$2 and \$3. Write for egg prices. Bidgman Red Farm, R. 4, Vassar, Mich. R. I. Red Chicks and Eggs. Both Combs. Dark Red. more Michigan farmers than any other strain Catalog free. Interlakes Farm, Box 39, Lawrence, Mich.

SILVER, Golden and White Wyandottes. Choice youns cockerels. Reasonable quality considered Ionia and Lausing winners. C.W. Browning. R.2, Portland, Mich

S.C. W. Leghorn Eggs for Hatching, also breeding win write us. "Hill-Crest Poultry Farm." Ypsilanti, Mich

S. C. BUFF ORPINGTONS
Worlds Greatest Egg Producers. Eggs or Chicks. Greaterfree. Will Schadt. Box 1037, Goshen, Indiana While Wyandottes cocks and cockerels snow white from fine stock and A 1 layers, \$2, \$3, and \$5 each. DAVID RAY, 202 Forest Ave., Ypsilanti, Michigan.

Poultry Ads. Continued on Page 154



When You Buy SQUARE DEAL FENCE



Be square with yourself when you buy fencing. You can't afford to put up a short-lived fence. You can't afford to make the mistake of buying any wire fence on "price" alone. Look out for light, imperfect, brittle wire; thin uneven galvanizing; weak, flimsy, half-tied knots, and out-of-date, clumsily woven, hard-to-put-up fencing. Buy the fence you KNOW you can depend on—one that will stand up tight and trim the whole year 'round—one that will give and take with sudden strains and season's changes—one that will last more years, cost less for repairs, require fewer, fence posts, turn all last more years, cost less for repairs, require fewer fence posts, turn all kinds of stock better, hold its shape and resist rust longest—in short, give you most for your money in real fence service and satisfaction. See -in short, give

before you buy. See the famous SQUARE DEAL LOCK—the double grip that will not slip. See the one-piece stay wires, the wavy, springy, strand wires, the perfect weaving, the heavy even galvanizing, the strong, flexible quality of square deal wire made in our own mills, not bought in the open market.

FREE To Landowners Only—If you want a SQUARE DEAL in farm fencing write our factory direct. We will send land owners FREE and postpaid our latest catalog; also a full-size copy (50c edition) of Ropp's New Calculator (if you have not already sent for one before)—160 pages of the greatest money—time—and labor-saving ideas ever published. All FREE. Write today.

KEYSTONE STEEL & WIRE CO.

2544 Industrial St., Peoria, Ilis.



PEERLESS FENCING That stiff one-piece cross bar, fastened with the famous Peerless Tie, puts an end to roaming. The Bull can't get over and the Pig can't get under.

Peerless Fencing Lasts

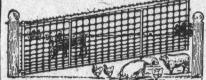
Those big open hearth steel, extra heavily galvanized wires will give you the best kind of service. It will give you more dollar for dollar, year after year, and all around satisfaction than any fence you ever put up.

And a good fence deserves a good gate. Peerless Gates are designed to match the Fencing. Big, heavy, high-carbon steel frames, filling of all No. 9 Wire Peerless close-woven fabric, put long life and all kinds of resistance in these gates.

Send for your copy of our big, free Fence Book showing a hundred styles of fencing and several types of gates. We can fit both your ideas and pocketbook.

The Peerless Self-Raising Gate

IS one of the best selling styles in our entire line. It is no longer necessary to lug around the old-fashioned sagging, dragging, heavy gates. The Peerless lifts automatically and swings over all obstructions, snow, ice, grass, and rubbish.



In addition to being self-raising, it is extra heavy in both frame and filling. Big, massive frames of 1%-inch tubing and close woven all No. 9 wire, close mesh filling, insures long life.

paint to wash or wear off in a year or two.

PEERLESS WIRE FENCE CO., 210 Michigan St., ADRIAN, MICH.

SWonderful New Brown F Fence Bargain Book F

Brown fence is made of Basic Open Hearth
Wire — DOUBLE GALVANIZED. Free
Book shows 150 styles. Also Gates, Barb
Wire and Steel Posts. Our prices save
you 25% to 40%. Write today for money
saving Free Book and sample to test.



You Get a - Farm Commerce.

Developing Co-operative Service

ciety. With the habit of working to- tral exchange. gether once established there is no

displace the local dealer. The second to place in a carload. step is now being considered. This on this step should be carefully exam- packing houses. ined and analyzed before the move is undertaken, that success may be more instructive. He says the great Cali- house manager where to ship it. fornia Exchange represents an invest-

the Central Exchange or the California or the local exchange officers. Fruit Growers' Exchange, with a central office at Los Angeles.

To form the first unit of the exchange several growers will band themselves together to prepare their fruit for shipment. By several it is unacreage and production enough or it may be several hundred. They first form an organization on a non-profit plan, elect a board of directors, usually of five members, give the association a name-something like the Pomona Fruit Growers' Associationand a manager and other necessary assistants are hired. They may buy, build or run a packing house, equip it properly, select the names for the different brands of fruit they intend to pack. The cost of the packing house and the equipment is paid by deducting five or ten cents a box on all fruit shipped through the house. When the fruit is delivered to the packing house it is separated into the different brands previously agreed upon and the weight of each brand for every load of every member is carefully recorded. This gives a basis for making the money return to the member. The returns for all the fruit shipped during a period of a week, two weeks or a month are called "pools." The length of these "pools" is decided by the direcshipped during a "pool" is averaged.

When a grower agrees to become a member of a packing house association as it is properly known, the local exchange, he agrees to stay in the association for a definite time, usually a year. He cannot withdraw on a short notice. Beyond this first unit there are two well defined units or divisions. the next being the sub-exchange. The affairs of a sub-exchange are managed as follows:

HE searching sting of a winter's He serves as a go-between or a clearcold and the penetrating rays of ing house for the main business details an August sun are no more ex- that would necessarily come up betensive in their action than are the op- tween the local exchange which he repportunities before the co-operative so- resents and the main office or the cen-

He directs the packing house manlimit to the things that can be done ager in the matter of the makeup of efficiently through these organizations. the cars of fruit as regards the brands The first work of the cooperative, or grades, the different grades, the difas we know it in Michigan, was to ferent sizes of each and the varieties

He arranges with the railroad comstep will reach to the next line of panies to have the right number of middlemen. All available experience empty cars placed at the different

He advises the packing house manager regarding the best time to harvest certainly insured. In this connection the fruit or any brand of the crop so the recent address by Prof. H. J. Eus- that it may reach the market at the tace, of the Michigan Agricultural Col-most advantageous time and attempts lege, before the Western New York in this way to keep the supply uniform. Horticultural Society, on the methods After the fruit is loaded in the car and employed by Pacific growers will be ready to ship, he informs the packing

The next unit in the organization is ment of two millions of dollars and a the central office, the correct name of normal commercial crop would fill which is the California Fruit Growers' about 50,000 cars with lemons and or- Exchange. Its policies and affairs are anges. It is a purely non-profit co-op- looked after by a board of seventeen erative organization through which directors, one from each of the sub-8,000 fruit growers market their fruit. exchanges. They have an open meet-There are three distinct units: First, ing in the central office in Los Aigeles the local packing house made up of every Wednesday morning. The funcgrowers. There are 170 of these. All tion of this central office is to sell the in a neighborhood are federated into fruit for the growers and attend to all what is called the sub-exchange for of the business matters of a general economy in handling business details. nature, such as railroad questions, There are seventeen of these sub-ex- claims, legal matters and advertising, changes in as many different districts while administration of the details is and these are in turn federated into left to the sub-exchange organizations

THE FARM SIGN BOARD.

Nearly every farm is provided with a blackboard on which may be listed derstood that it may be one if he has articles for sale. Many of these boards are furnished by some merchant in a nearby city who in ordering them constructed allows about four-fifths of the space for his own advertisement and one-fifth for the farmer to write down articles "Wanted or For Sale." The result is a very small space for the farmer and he can scarcely write or print words large enough to enable the passerby to clearly see them. In many instances farmers who frequently use their blackboards would find that it pays to make their own boards large enough for clear printing of their own business needs and then leave off the advertising of other business men.

In placing the sign board on the farm frontage it is customary to install it as near to the road as possible. This was an advantage when all vehicles were moving slowly. The use of the motor car is now quite prevalent in all rural districts and many farmers will find their best customers among motorists. The careful driver who seldom exceeds a rate of fifteen miles per hour will find great difficulty in reading the tors. This means that the money resign boards along the road because ceived for all the fruit of a like brand they come into the range of vision and pass out so quickly that it ble to focus the eyes on the reading matter. A sign clearly printed and placed fifteen or twenty feet back from the road will greatly increase the number of interested readers. This is a splendid time to prepare the board for erecting when the ground thaws.

R. G. KIRBY. Ingham Co.

The Chamber of Commerce of the by a board of directors composed of United States has appealed for legislaone representative from each of the tion to permit industrial combinations local exchanges. These directors or under supervision of the Federal ganize, elect officers and hire a man-Trade Commission in cases where such ager. His duties may be enumerated combination is necessary to conserve natural resources.

Supplies of potatoes on hand January 1, 1917, for market in nineteen important potato-growing states are estimated by the Bureau of Crop Estimates of the U.S. Department of Agriculture to be about 44 per cent smaller than a year ago, 65 per cent smaller than two years ago, and 54 per cent smaller than the average holdings on January 1 of the preceding five years.

If, for the purpose of comparison, the estimates in percentages of marketable stocks of potatoes on hand on January 1 be applied to the estimates of total production, it shows, in the nineteen states included (which produced 61 per cent of the total 1916 crop, and 66 per cent of the 1915 crop), a total of 59,938,000 bushels on January 1, 1917, compared with 106,225,000 bushels a year ago, 169,554,000 bushels two years ago, and 129,941,000 bushels the average holdings of the preceding five years on January 1. These figures indicate a scant supply of old potatoes during the spring months.

YOUR NEIGHBORS AS CUSTOM—ERS.

Many farmers, in making their market plans, entirely neglect their neighbors.

Jily 4th, 511830, W. W. Collier, Pontiac, \$200.

Consigned by C. J. Deter, Gd. Ledge, Mich.—Cows.—Lily Marengo, 92027, E. A. Uphause, Manchester, \$150. Bulls. A. Uphause, Manchester, \$150. Bulls. How.

Jone 1916 to the estimates of the procedure of the total 1916 consigned by C. J. Deter, Gd. Ledge, Mich.—Cows.—Lily Marengo, 92027, E. A. Uphause, Manchester, \$150. Bulls. How.

Jone 1917 (Consigned by C. J. Deter, Gd. Ledge, Mich.—Cows.—Lily Marengo, 92027, E. A. Uphause, Manchester, \$150. Bulls. How.

Jone 1918 (Consigned by C. J. Deter, Gd. Ledge, Mich.—Cows.—Lily Marengo, 92027, E. A. Uphause, Manchester, \$150. Bulls. How.

Jone 2018 (Consigned by C. J. Deter, Gd. Ledge, Mich.—Cows.—Lily Marengo, 92027, E. A. Uphause, Manchester, \$150. Bulls. How.

Jone 202 (Consigned by C. J. Deter, Gd. Ledge, Mich.—Cows.—Lily Marengo, 92027, E. A. Uphause, Manchester, \$150. Bulls.—Consigned by Michael Wagner, Fremont, O.—Cows.—Roan Cumberland, \$01626, C. V. Tracy, Ithaca, \$250; Royal Marshal 2d, 509180; Eli Sprunger, Saginaw, \$275; Marshal, 509179, Wexford Co. Farm Bureau, Cadillac, \$150.

Consigned by G. H. Parkhurst, Orion, Mich.—Bulls.—Morning Prince, 519572, Frank Emery, Falmouth, \$170.

Consigned by G. H. Parkhurst, Orion, Mich.—Bulls.—Morning Prince, 519572, Frank Emery, Falmouth, \$170.

Consigned by G. H. Parkhurst, Orion, Mich.—Bulls.—Water Lily Lad 5th, 507434, F. E. Spafford, Manchester, \$150. Bulls.—Royal Bushels (Consigned by January 1 be applied to the estimates

Many farmers, in making their market plans, entirely neglect their neighbors. One farmer in a community may grow an improved variety of corn or some of the small grains. His neighbors may trust him, but send to a distant market for their supply of seed. They have never considered him as a possible grain dealer. He has never put into their hands the advertising matter that he has sent to his distant customers nor has he thought it necessary to talk to them about such matters.

5th, 507434, F. E. Spafford, Manchester, \$130.

Consigned by W. B. McQuillan, Howell, Mich.—Bulls.—Sultan's Ideal, 517-097, Wheaton Bros., Charlotte, \$245; Maplewood Master, 517094, George L. Rich, Lawrence, \$165.

Consigned by Jedd Waldo, Grand Ledge, Mich.—Bulls.—Young Mary Ladd, 518561, E. E. Cusick, Muir, \$190.

Consigned by Milo Stimson, Metamora, Mich.—Bulls.—Kokono, 511506, J. E. Walkenshaw, Belleville, \$160.

Consigned by Elwin G. Parmeter, 80ckford, Mich.—Bulls.—Master Boy, 518997, E. W. Barnard, Ionia, \$170. ters.

One of the first steps that a farmer should take in starting an advertising campaign is to name his farm. An appropriate title adds distinction to the grounds and leaves with the passerby something definite by which he may speak of the farm. One of the states in the middle west has considered this when the states is the middle west has considered this considered this speak of the farm. One of the states are should be stated were Percherons. point of sufficient importance to issue a bulletin of titles that could be applied to the various types of farms.

The next step is to rid the farm of the other man's advertisements. On the average farm there are sign boards

the average farm there are sign boards that advertise everything but the products of that farm. Other industries do not rent advertising space upon their factories and the man who wishes to make a success of farming cannot afford to do it either.

Plain but attractive bulletin boards should be placed at the gateways and other prominent points upon your highway. Upon these the grower may post all products in season, thus giving the passing public an opportunity to supply themselves with fresh fruits, vegetables, or dairy products. If only five people pass your farm a day, 1,825 will have passed in a year. If these mention it to two more you have made in one year 5,475 possible customers.

Hand bills offer a good medium for advertising a specific crop but they are expensive when you take into consideration the large number of them that are lost in distribution. The percent of people that read them is small

that are lost in distribution. The per cent of people that read them is small when compared to those that will take in at a glance the substance of an anal a glance the substance of an anal a glance the substance of an anal and the substance of an nouncement that can be read from a moving vehicle.

It would be better if the money invested in the hand bills be applied to a small advertisement in the local paper. A small section will not be over-shadowed by a large one if it is attractively written and frequently changed. For

the number of people reached and the frequency of the advertisement the local paper will give the better result of the two.

In dealing with the public the farmer has, in many instances, failed to comply with the business methods that the city buyer receives. The lack of proper receptacles leads to the deliv-

STOCK OF POTATOES, JANUARY 1. ery of his produce in soiled sacks, broken boxes or barrels and even tin dishes. This method does not tend to increase his sales. The price that he should receive for his first-class products are decreased by the uninviting appearance of the finished package. One of the best advertisements for any farm is its high grade of products and its distinctive container.

B. W. LLOYD. Ingham Co.

SHORTHORN BREEDERS' SALE.

(Continued from page 134). Lily 4th, 511890, W. W. Collier, Pon-tiac, \$200.

THE DRAFT HORSE SALE.

Consigned by J. M. Hicks & Sons, St. Johns, Mich.—Mares.—Rosette, 815-41, and Frances, 88738, R. J. Bullen & Son, Eaton Rapids, \$500; Queen, 101-564, Royal King, Parma, \$345; Opal, H. J. Shebel, \$245; Nina, John Lang, Northport, \$245.—Stallions.—Villa, Eli Springer, Saginaw, \$290.

Consigned by Orrin El Bell Mason.

dora, 123216, L. C. Hurst, Eaton Rapids, \$235.
Consigned by M. A. Bray & Son, Okemos, Mich.—Mares.—Pet, 104477, Ray Snider, Benton, \$375; Anna, 104474, Ray Snider, \$305. Stallions.—Ira, W. J. Bell, Mason, \$80.
Consigned by R. J. Bullen & Sons, Eaton Rapids, Mich.—Stallions.—Flynn, 95104, Palmer Bros., Orleans, \$290.



-a bigger man for a bigger job!

NATHAN F. SIMPSON, for the past seven years Warden of Jackson state prison, the man who made himself nationally famous by turning a \$100,000 deficit, into a \$100,000 yearly profit to the state of Michigan, will on February first, join hands with the great Gleaners' movement, as General Manager of the Gleaners' Clearing House.

This man's wonderful business and executive ability will thus be linked with the Gleaners strength and 23 years of experience in solving the problem of marketing the farmers produce for more profit!

-what "Warden" Simpson's decision means to Michigan Farmers

You men and women of the farms of Michigan know what this announcement means, to you! This man Simpson never tackeled a proposition that was not a big success under his management. He turned down flattering offers to accept this foot-hold with the Gleaners organization, where he can put his heart and soul into a fight he likes. The day of speculation in farm produce will end when the farmer finds a direct way to the consumers market and Simpson is going to find it!

United, in the strength of a great organization, and led by such a successful business executive as Nathan F. Simpson, the thinking business farmers of this state can make Michigan the most prosperous farming state in America! Grant Slocum



NATIONAL **GLEANERS TEMPLE** DETROIT

Woodward at Palmer Ave.

Erected in 1906

Valued at \$150,000

(Owned by the Gleaners)

THE GLEANERS

Membership over 80,000-Assets over \$900,000

Grant Slocum, Secretary, The Gleaners, Detroit, Michigan,

I am not as yet a member of the Gleaners, but I am a farmer interested in "Warden" Simpson's plans for better markets. Tell me more about the Gleaners and what you are doing. (I incur no obligation and what you are doing. by signing.)

M	
P. O	R. F. D. No

Markets.

GRAINS AND SEEDS.

January 30, 1917.

—The wheat trade has reacted and prices on Monday were a shilling below those of a week earlier. One of the leading causes is the congested condition of our railroads, particularly at the terminals on our eastern seaboard. The market, however occupies a strong statistical position. The week witnessed a large decrease in the visible supply, there was heavy export buying, the recent announcement that buying, the recent announcement that the Canadian crop was much larger than earlier estimated has been denied, and from winter wheat sections reports of crop damage are being published. One year ago No. 2 red wheat was quoted on the Detroit market at \$1.33½ per bushel. Detroit quotations for last week were:

	No. 2	No. 1	
	Red.	White.	May
Wednesday1	.903/4	1.85 3/4	1.943/4
Thursday1	.911/4	1.861/4	1.951/4
Friday1	.88	1.83	1.92
Saturday1	.83 1/4	1.781/4	1.871/4
Monday1	.781/2	1.73 1/2	1.82 1/2
Tuesday1	.821/2	1.771/2	1.861/2
Chicago.—May	wheat	\$1.7534	July
1.491/2: Sept. 1.381	/2		

Corn.—While corn suffered from the recent decline in wheat values, the market appears to be somewhat stronger than the major grain, as fluctuations kept within narrower borders. Export inquiry is again in evidence, and there is no increase in pressure from country offerings. The domestic demand for the cereal is good and would result in more dealing if railroads could take care of shipments. roads could take care of shipments. The visible supply increased 1,324,000 bushels last week. A year ago No. 3 corn was selling at 76c per bu. Last week's Detroit quotations were:

	No. 3	No. 3
Tributa ta da	Mixed.	Yellow.
Wednesday	1.041/2	1.05 1/2
Thursday	1.05	1.06
Friday	1.05	1.06
Saturday	1.041/2	1.05 1/2
Monday	1.03 1/2	1.04 1/2
Tuesday	1.031/4	1.041/2
Chicago.—May corn	\$1.001/2	; July
99¼c.		

Oats.—There is a moderate demand for this cereal with the visible supply showing a decrease of 1,549,000 bush-els for the week. A year ago stan-dard oats were quoted at 54½c per bu. Last week's Detroit quotations were: No. 3

[12] [14] [15] [16] [17] [17] [17] [17] [17] [17] [17] [17	140. 9
Standard.	White.
Wednesday 60	501/2
Thursday 60½	60
Friday 60	591/2
Saturday 59½	59
Monday 59	581/2
Tuesday 581/2	58
Chicago May oats 56%c	per bu;
July 54%c.	

July 54%c.

Rye.—This cereal declined 2c and cash No. 2 is uow \$1.46 per bushel Beans.—Prices 10c higher than a week ago. Business is restricted by the meager supplies. Cash beans are quoted at \$6.60; February \$6.40. At Chicago prices are steady with Michigan pea beans, hand-picked at \$6.75; red kidneys \$6.75@6.80. At Greenville beans are selling on a \$6.10 basis.

Peas.—Trade quiet at Chicago; field peas quoted at \$2.75@3, sacks included.

Seeds.—Prime red clover \$10.85; March \$10.90; alsike \$11; timothy \$2.50.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$9.90; seconds \$9.60; straight \$9.40; spring patent \$10.50; rye flour

oat chop \$38 per ton.

Hay.—In carlots at Detroit: No. 1 timothy \$14.50@15; standard timothy \$13:50@14; No. 2 timothy \$10@11; light mixed \$13.50@14; No. 1 mixed \$13:50@14; No. 1 clover \$12@12.50.

Pittsburg.—No. 1 timothy \$15.50@
16; No. 2 timothy \$13.75@14.75; No. 1 light mixed \$14.014.75; No. 1 clover mixed \$15.50@15.75; No. 1 clover \$15.50@16.

Straw.—In cars at Detroit, rye straw \$9.010; wheat and oat straw \$8.50@19.50.

DAIRY AND POULTRY PRODUCTS.

Butter.—Increased demand brings higher prices. Creamery extras 38c; do firsts 36c: nacking stock 241/2c.

turkeys 28c.
Chicago—Light supply brought higher prices. Turkeys 12@22c; fowls 14@20c; spring chickens 19c; ducks 15@20c; geese 14@16c.
Eggs.—Market firm at an advance of ½c. Firsts 40c; current receipts 38c. Chicago.—Good offerings of fresh stock caused a decline in prices. Fresh firsts 37½@38c; ordinary firsts 36@36½c; miscellaneous lots, cases included 36@37½c; refrigerator firsts 34c per dozen. 34c per dozen.

FRUITS AND VEGETABLES.

Apples.—Market steady with prices unchanged. Baldwins \$5.25@5.50; Spy and King \$5.75@6 for best. At Chicago

the market is fairly active at former prices. No. 1 stock sells at \$3@6 per bbl; No. 2 at \$2@2.50.

Potatoes.—In carlots at Detroit. In sacks \$1.95@2; western and Maine at \$2.10@2.20 per bushel. At Chicago the market is firm and prices higher Mich. market is firm and prices higher. Michigan white potatoes are quoted at \$1.80 @2 per bushel. At Greenville potatoes are bringing \$1.85@1.87 per bushel.

WOOL.

Lack of bottoms is preventing the importation of foreign wools and the reduction in this country in the number and size of flocks make the future of the wool market attractive to producers. Farmers will hold out for top values this coming season, and conditions appear to be of such a character as to enable them to secure what they ask. Fleeces sold on the Boston market last week at 25@50c per pound; pulled wools 68c@\$1.05 per pound.

DETROIT EASTERN MARKET.

Considering the season, the market Tuesday morning was good, with prices holding firm for most products. Apples 75c@\$2 per bu; potatoes \$2.25@2.30; carrots \$1.50@1.75; parsnips \$2; rhubarb 20c per bunch; eggs 50c per dozen; loose hay is coming in slowly with prices quoted at \$17@19 per ton.

LIVE STOCK MARKETS.

Buffalo.

January 29, 1917.
Receipts here today as follows: Cattle 116 cars; hogs 60 d. d.; sheep 40 d. d.; calves 1200 head.
With 116 cars of cattle here today the trade was steady to strong with all classes of cattle except the low-priced cows which were slow sale at priced cows, which were slow sale at about steady prices. The best shipping cattle here today sold at \$11, the bulk ranging from \$10@11. There was a good demand for stockers and feeders, but there were very few in the run and what desirable ones were here sold strong. We look for a fair run of cattle here next Monday and about a steady trade

cattle here next Monday and about a steady trade.

Receipts of hogs today were moderate, about 60 double decks, demand fairly good. Pigs and lights sold strong 15@25c higher, and all other grades full steady. The bulk of the sales were around \$12.25, with pigs and lights, as to weight and quality, from \$11.25@11.50; roughs \$11@11.25; stags \$9@10. Late trade was rather dull, especially on pig stuff and quite a number of this class unsold.

With a light run of lambs today our

Flour.—Jobbing lots in one-eighth aper sacks are selling on the Detroit tarket per 196 lbs., as follows: Best atent \$9.90; seconds \$9.60; straight .40; spring patent \$10.50; rye flour .80.

Feed.—In 100-lb. sacks, jobbing lots e: Bran \$33; standard middlings 4; fine middlings \$35; cracked corn 3; coarse corn meal \$43; corn and t chop \$38 per ton.

Hay.—In carlots at Detroit: No 1 to the property of this class unsold.

With a light run of lambs today our market opened up active and 10c higher than the close of last week. We look for shade lower prices last of the week. We quote: Lambs \$14.85@15; cull to common \$13.75@14.50; year-lings \$12.50@13.75; wethers \$11.50@12; ewes \$10.50@11; bucks \$8@9; best calves \$15.25@15.50; common and light \$11@13.50; heavy \$8.50@10.50; grassers \$6@6.50.

Cattle. Hogs.

Receipts today 23,000 65,000 14,000
Same day 1916...12,450 63,348 13,313
Last week......62,679 230,060 76,831
Same wk 1916...51,935 278,117 57,621
Despite the liberal receipts of hogs
today the market advanced 5@10c,

Despite the liberal receipts of hogs today, the market advanced 5@10c, with sales at \$11.15@11.80. Hogs marketed last week averaged 197 lbs. Cattle of desirable kinds are steady with a late opening in trade, packers holding back. Because of the meager receipts of everything in the sheep line, prices are at least 10@15c higher, with nrime wethers bringing \$11.65 and Butter.—Increased demand brings prime ewes \$10.50. During last week higher prices. Creamery extras 38c; 83,900 hogs were shipped from here, comparing with 71,098 a week earlier and 42,317 a year ago.

is 39c.
Chicago.—Market firm and higher. Extra creameries 38c; extra firsts 36½@37c; packing stock 27@27½c.
Poultry.—Market unchanged. No. 1 chickens 21c; No. 2 do 18@19c; No. 1 hens 20c; No. 2 do 18@18½c; small do 14c; ducks 22@23c; geese 20@21c; turkeys 28c.
Chicago—Light supply here.

Cattle made a great record during the last week by selling at much the highest prices seen since the Christmas holidays, with cold weather acting as a powerful stimulus to the consumption of beef throughout the country. While the comparatively small percentage of choice beeves went at a good premium paid over merely pretty good cattle, everything went are prices. centage of choice beeves went at a good premium paid over merely pretty good cattle, everything went at high prices, the greater part of the beef steers selling at \$9.25@11.25, and the extreme range of prices being \$7@11.90, comparing with \$5.50@9.75 at year ago and with \$4.75@8.75 five years ago. Inferior light weight steers sold at \$7@8.50, fair little killers at \$8.60@9.45, medium grade steers at \$10.25@11.20 and choice to extra cattle of heavy weights at \$11.25@11.90. Butcher stuff sold extremely well, with cows purchased at \$6.10@9.50 and heifers at \$6@10.50, although only a limited number of prime yearling heifers sold above \$9. Cutters sold at \$5.50@6, canners at \$4.75@5.25 and bulls at \$5.60@9. Calves were advanced to higher prices for the best lots ever recorded, sales breaking all records, with desirable light vealers going at \$14@15 per 100 lbs. and sales made all the way down to \$5.50@9.50 for coarse to good heavy weights. A good business was transacted in stockers and feeders, although the demand fell off from that of recent weeks, with stockers selling at \$6.25@8.50 and feeders at \$7.25@9.35, while a sale was made of toppy 570-lb. yearlings at \$9, with others of nearly the same weight purchased at \$8.85. Packers have been keen buyers of feeder cattle that showed ed at \$8.85. Packers have been keen buyers of feeder cattle that showed any quality, and this competition has rendered it difficult for country buyers to obtain any good bargains in feeders. Packers need large supplies of cheap cattle for their foreign trade. Cattle sales for the week were largely as much as 25c higher than a week

Lambs and other live muttons have experienced still another week of great activity in buying, with the highest prices ever paid, fresh high records being made. Feeding and shearing lambs shared in the advance when \$14 per 100 lbs. was paid for offerings requiring only a short feed to make them ing only a short feed to make them prime in quality. The receipts consisted mainly of fed western lambs, with increased offerings of western feeding lambs, which sold readily. A few big bunches of Colorado-fed lambs came to market and sold setting atomic. came to market and sold satisfactorily. Lambs closed firm and much the same as a week earlier, while sheep and yearlings advanced about 25c. Lambs closed at \$11.50@14.40, feeding lambs at \$12.50@14, yearlings at \$10@13.50, wethers at \$9@11.25, ewes at \$7@10.40, feeding ewes at \$6.50@7.75 and bucks at \$8.25@9.

Hogs made a wonderful record last week by undergoing a lively upward movement in prices for all descriptions the best landing at \$11.80. Prices were the highest recorded in about half a century, with eastern shippers taking hold liberally and securing an unusually generous share of the daily offerings. The better class of heavy and light hogs were taken largely for ship ment, and the spread in hog prices was a narrow one, at least so far as the greater part of the hogs were con-cerned, with the bulk of the daily transactions at a range of about 25c per 100 lbs. Never before was the outlook for hogs brighter than now, and stock-men should lose no pains to make their men should lose no pains to make their holdings as choice as possible before marketing. The hog receipts for the week here and at other western markets were much smaller than a week earlier, and at the close sales were made of heavy packers at \$11.25@11.70, light shippers at \$11.45@11.55, light bacon lots at \$11@11.40, stags at \$11.40 @12 and pigs at \$9@10.50. A week earlier hogs brought \$10.50@11.20. Shipments for the week rose to 83,668 hogs, comparing with 71,098 a week earlier and 42,317 a year ago.



Crop Insurance

By planting acclimated seed taken from produc-tive fields of many year's standing you are assured tive fields of many year's standing you are assured of good results. The purchase of Michigan-grown Alfalfa seed will be the best investment ever made. Isbell's Alfalfa stands the winters—strong vitality—sturdy growth—no weeds—over 99% pure. The grower who makes money from his crops is very careful to select that kind of seed.

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EDITOR, LANDOLOGY, Skidmore Land Co. 308 HALL AVE. MARINETTE, WIS

HELP WANTED Apr. 1, 17, on farm near Pontiac single man, good farm helper, willing to work single woman, middle aged preferred, good cook and house keeper, steady employment. Would consider, man and wife with out children. State wages desired, G.A. Dakin, Vermontville, Mich

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Raise mules and get rich
120 fine large Jacks, Jenny
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KENTUCKY JACKS and SADDLERS BIG BONE Kentucky Jacks and Jennets. 85 head FIVE and CUBAN CAITED STAILLIONS, geldings and marss. Fancy Mule Teams. Write US. ASK FOR OUR 1917 CATALOG. THE COOK FARMS BOX 436E, LEXINGTON, KY.

The Belstein Stock farm Offers a dark bay four year way above the average in breeding size and quality weighing over 2200 lb, with goodstyle and action, price and terms right, if interested write OSCAR WOLF.

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

DETROIT LIVE STOCK MARKET.

Thursday's Market. February 1, 1917. Cattle.

Last week's high Receipts 3233.

prices for cattle seemed to wake everyone up in the country who had any ready to sell, and the market this week was full of all kinds and as a consequence prices on everything but camers and bulls went off fully 25@ 50c a hundred and on Wednesday quite a large number of late arrivals went over unsold. Stocker and feeder buyers from the country were scarce, prices looking entirely too high for their use. Good quality milch cows sold well but those of the common order were dull and dragsy.

Prices averaged as follows: Best heavy steers \$9@9.25; best handy weight butcher steers \$8.88.75; mixed steers and heifers \$7.50@8; handy light butchers \$6.50@1.25; light butchers \$6.50@1.25; light butchers \$6.50@1.25; light butchers \$6.50@6.25; common cows \$6.25.60.65; feeters \$7.60.65.75; conners \$4.50.65; best heavy bulls \$7.07.50; bologna bulls \$6.25.66.75; stock bulls \$5.50.66.75; best heavy bulls \$7.07.50; bologna bulls \$6.25.66.75; stock bulls \$5.50.66.75; stock bulls \$6.25.66.75; stock bulls \$6.25.66.75; stock bulls \$6.25.66.75; stock bulls \$6.25.75; constant springers \$40.80.

Sandel, S., B. & G. sold Mich. B. Co. 6 butchers av \$40.80.

Sandel, S., B. & G. sold Mich. B. Co. 6 butchers av \$40.80.

Sandel, S., B. & G. sold Mich. B. Co. 6 butchers av \$40.80.

Sandel, S., B. & G. sold Mich. B. Co. 6 out \$4.50.00; stockers \$40.80.00; stocker

lambs \$14; fair lambs \$13.50@13.75; light to common lambs \$12.50@13.50; fair to good sheep \$8.50@10; culls and common \$7.@7.50.

Bishop, B. & H. sold Hammond, S. & Co. 190 lambs av 80 at \$14; to Newton B. Co. 29 do av 50 at \$12.50, 10 do av 59 at \$13.25; to Sullivan P. Co. 250 do av 50 at \$13.25; to Nagle P. Co. 219 do av 80 at \$14, 79 do av 70 at \$13.25, 220 do av 80 at \$14, 104 do av 75 at \$14, 273 do av 75 at \$14, 137 do av 78 at \$14.10; to Hammond, S. & Co. 16 do av 120 at \$9.25; to Thompson 239 do av 70 at \$13.75, 24 do av 70 at \$13.25; to Nagle P. Co. 15 sheep av 100 at \$9; to Sullivan P. Co. 25 do av 105 at \$9, 13 do av 80 at \$6.50; to Thompson Bros. 53 lambs av 60 at \$13.25; to Hammond, S. & Co. 21 do av 60 at \$13, 22 do av 60 at \$13.25.

Receipts 3643. In the hog department the run was very light and the

Hogs.

Receipts 3643. In the hog department the run was very light and the market never so high, especially on good grades which are very scarce, the total receipts for the week up to this writing being but 3643. Prices on Thursday were 15@20c higher than on Wednesday on mixed grades, selling at \$11.75@12; pigs about steady at \$10.75.



Mr. Stratton, whose Berkshire farm near Momence, Ill., is famous throughout the land, writes:
"Avalon Farms Hog-Tone, being in the liquid form, is so easily fed in the swill that you obtain the desired re-

sults without difficulty. I took a couple of shoats that

Perry Stratton, the Berkshire Breeder, Accepted This Offer! So Should You!

did not seem to be doing well and began by feeding them Hog-Tone. In about five weeks' time you would not have believed they were the same hogs! They grew with the other hogs and when feeding time comes they are the biggest scrappers in the bunch."

Accept This Offer! Think What It Means to You!

The price of hogs is going higher every day—and is bound to go higher from now on. There is a serious hog-shortage. Especially a shortage of high-grade porkers—hogs absolutely free from worms—big hogs with sound, clean flesh! "Nearly every hog is infested with worms," declares the U. S. Dept. of Agriculture. The malignant Thorn Head Worms—Stomach Worms—Liver Worms—Lung and Bronchial

Worms weaken the hogs—affect every sow's litter—make millions of hogs easy victims of cholera, scours, thumps, rheumatism, enteritis, gastritis—rob surviving hogs of nourishment their food should bring, cut down their weight and quality at marketing time.

Use HOG-TONE—and rid your hogs of all worms—the collection high grade, high weight

bring them all to market in high-grade, high-weight, worm-free condition.

The Liquid Worm Killer and Hog Condition FOR ALL YOUR HOGS-SEND NO MONEY!

I will ship you one big \$1.00 bottle of Hog-Tone for each eight hogs in your herd—the day the coupon below, filled in, reaches this office. That will be sufficient to treat all your hogs 60 days or more, according to size. This will mean just 12% cents per hog for all the treatment, and that treatment is guaranteed by me to free your hogs of all worms—to enable them to put on more weight from the same feed—to fill them with strength and vitality—to resist disease attacks. This is the same offer that these men named below grasped—and were glad they did.

"Sometime area I remired."

"Sometime ago I received your AVALON FARMS HOG-TONE and used it on one pig that I separated from rest of the bunch which was a good average one. Sold the bunch at seven months old which averaged 226%. The one that I used your Hog-Tone on weighed 250 lbs. This hog was sold 38 days before the bunch."

EMERA H. MILBURN, Lapel, Indiana

"Eind employed check for the Hog-Tone you sent

"Find enclosed check for the Hog-Tone you sent me. It sure did the work on my pigs. The second day after the first dose the pigs began to pass worms—'round ones.' I tried out two hogs and they got awful fat. I am well safisfied with Hog-Tone." J. T. LEECH, Pampa, Texas

"I have purchased six bottles of Hog-Tone and am feeding it to my hogs. Have not been feeding it very long, but am sure surprised at the results. I can see a great change in their appearance and the way they eat. I never had Fall pigs do so well. HOG-TONE will do all you claim for it." (Signed) GEO, BRASFIELD, Swayzee, Ind. Avalon Farms Hog-Tone is a highly concentrated liquid medicine for hogs only. It contains highly important medical ingredients which are liquids and which cannot be combined in Medicated Salts, Stock Foods or Condition Powders of any kind. Avalon Farms Hog-Tone is safe. It is easily mixed with any slops, with drinking water or dampened feed. It is only given every third day for the first six weeks and after that only once a week. 100 per cent strong.

week. 100 per cent strong.
It cleans out every kind of worms that infest hogs. By do so, it gives protection to your hogs from easily contractin Cholera, Rheumatism, Scours, Thurnes, caused by worms and indipection, Enteritis, Indigestion and other diseases that destrey literally millious of hogs. A simply wonderful tooks and conditioner—gives hogs vonctous appeties, nide digestion, hot at them. Splendid for pregnant successes if feel. Splendid for pregnant something the stronger and thriftler, too. Farms Co. I Don't Want You to Send Me a Cent!

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In 1898, the average Wheat yield per acre in New York State was 21.2 bushels; in 1907, 17.3 bushels per acre; in 1912, but 16 bushels.

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Marie; N. P. Hull, Dimondale; Burr
Lincoln, Harbor Beach.

SOME ESSENTIALS OF GRANGE GROWTH.

class, I have written about the duties discuss the problem of the Order at large in the state.

lacked none of the splendid enthusiasm of like gatherings in former years. It was one of the most harmonious conventions that it has ever been my priving of unusually capable men and wom- ening. en, who knew wherefore they were wisdom and the courage to perform the work assigned to them.

But while we were so happily and who spoke from far off, told the public through the principal newspapers that numbers. They used a great deal of language in the telling of it, and I fancy the surprise of the average readinfluence and stability is so generally known.

I think the public placés just about who got their information in any way they could, and never failed to bridge the gulf between facts by an imagina- unite with his neighbors in an effort tion cultivated through long years of this sort of experience.

But there is at least some truth in these reports. The Grange has lost members to the number of over three thousand as shown by the report of the State Secretary for the year just closed. However, we can tell but little about the actual condition of the Order by the report of any state officer, unless it is the master or lecturer.

have suspended a large number of figures that this is more profitable. He their members for non-payment of spoke of the larger profits which the but it is not at all likely that even the make over the one who sells his entire greater part of this loss has occurred during the year just closed.

number of those who have been sus- which makes him a very welcome pended have not been in a Grange for speaker at Grange sessions. The adtwo years at least.

that many of our young people have Miss Marie Betts at the close of the gone to the cities for employment. And program. bers keep up Grange dues.

cause and in two more counties the brotherhood.

loss is considerable on this account. In some respects the Order is as active as ever. The percentages paid by contracting companies upon goods bought during the year just closed, were the largest in many years, if not the greatest ever. A large number of Granges are doing very excellent work in the lecturer's hour, and some fine degree work may be seen in most of the counties in southern Michigan.

But the most important question now is, "how shall the Order increase its membership in the state? What means may be employed to give the Grange that prominence and that influence in public affairs that the needs of agriculture demand?"

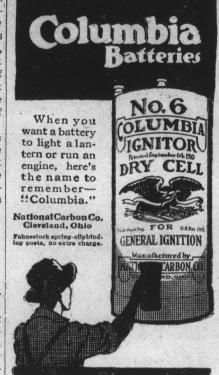
(To be continued).

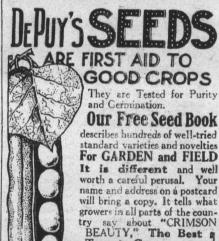
ANNUAL TWO-DAY MEETING OF HILLSDALE GRANGE.

The annual two-day meeting of Hillsdale County Pomona Grange was held In former communications of this in Hillsdale, January 3-4. The morning sessions were given over to the tranand the possibilities of the subordinate saction of business, Worthy Master B. Grange, but in this article I wish to S. Lamb presiding. At the Wednesday afternoon session a degree team composed of ladies of Acme Grange gave A little while ago delegates from the third and fourth degrees to a class eighty-two counties met at Lansing in of candidates. A chorus of voices from the Forty-fourth Annual Session of the the same Grange furnished music for Michigan State Grange. The meeting the degree work and for the Harvesters' Drill which followed. The evening session was given over entirely to conferring the fifth degree on a large class of candidates. A phonograph furnishilege to attend. It was, too, a gather- ed music for the banquet of the ev-

Hillsdale Grange served dinner after come together, and who possessed the the business session Thursday morn-The afternoon meeting was in in charge of the Worthy Lecturer. Mr. B. F. Kies, of Hillsdale Grange, gave hopefully employed some reporters the address of welcome, and Mrs. Ziegler, from Montgomery, responded. Mrs. Smith gave two vocal selections, "The the Grange was losing in influence and Gypsies' Warning," and "I'll Take You Home Kathleen," followed by Miss Minnie Fitzsimmons, who gave as a reading a true incident of Civil War er upon reading of the decline of an times. A paper on "Things that Abide," Order whose reputation for strength, was read by Mrs. Claudia Betts. She spoke of the things which we can afford to let go and of the others which are eminently worth while. The adthe right amount of dependence upon dress of the afternoon was given by such reports as were given of our great Dr. J. W. Will, pastor of the Presbymeeting from day to day by reporters terian church. His topic was "Co-operation Among Farmers." Among other things he said: "The farmer should to gain better prices for his products. If each one would find out when his neighbor expects to ship, and how much will be put on the market at that time, then sell accordingly, he can get more nearly a just remuneration for his labor." He also advocated the intensive cultivation of fewer acres, rather than the cultivation of so many. The speaker urged the farmers to raise more cattle and to feed them on grain It is clear that these Granges that rather than pasture, proving by actual dues are declining and in need of help, fruit grower who boxes his apples will output in barrels, Dr. Will has a working knowledge of farm life and a sym-But it is more likely that the greater pathy with its problems and successes dress was one of much interest as well There has been a very noticeable de- as profit to those present. A violin cline in membership owing to the fact solo. "La Cinquantaine," was played by

another potent cause of decline in These annual two-day meetings are three counties comes to light when we giving splendid satisfaction. Many who consider that large numbers in these cannot attend the meetings held each counties have kept up their member- month with subordinate Granges about ship in the Order simply to retain their the county, are able to be present at fire insurance. Within the last two both sessions held at the county seat years the companies doing business in and there is always a good attendance. these counties have opened their doors The lecturers' program Thursday afterto those outside the Order, and of noon draws many of the townspeople course do not longer require that mem- and these yearly meetings bring many outsiders in closer touch with the work In one county there has been a large of the Grange as well as uniting the falling off in membership due to this Grangers themselves into a closer MARIE BETTS.





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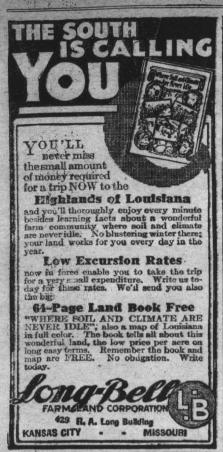
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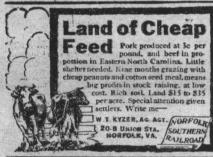
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WHAT THE LOCAL CLUBS ARE DOING.

Discarded Yearly Programs.

Our Club has been in existence for sixteen years. We adopted the yearly program one year-that was before we were members-and why they discardit I don't know. Still we have a good, live Club. We have usually two questions-the gentlemen's question and the ladies' question, each meeting, and they certainly are good topics. Club thinks a great deal of it-it is business from beginning to end. I was about to say that the speaker here suggested a line of related topics for regular systematic study. I wonder if any of the program committees of any Club have ever considered the idea of having them a part of the exercises for each Club.

Our programs cost us \$5.00. I think there are certain topics that could be set up a year in advance for each season of the year or month of the year. Other topics can be called up in addition to them.

each month in the year excepting July. They cost \$5.00. They are a solid card

vania, followed by a discussion on road building systems.

January 9 was institute day at the Wacousta church. An oyster dinner was served in the Club's best style, after which Mr. Down, of M. A. C., gave a chart talk on pure-bred seed, showing the best varieties of wheat, oats, and barley as demonstrated by trial at the M. A. C. An interest in organizing a group of our young progressive farmers to experiment along this line was manifested. This subject is to be investigated and taken up at the February meeting. The community is enjoying the usual fine entertainment course put on by the Club at a cost of \$250. We believe our continued prosperity to be due to two causes, our aim to better our community, and the fine

advertising givenl us by our county papers and the Michigan Farmer.—Bell Maier, Reporter.

Live Stock vs. Grain Farming.—Forty visitors and members of the Washington Center Farmers' Club spent an enjoyable and very interesting day Thursday, January 11, at Elmwood, the home of Mr. and Mrs. S. N. French. The forenoon was spent in visiting and attending to the usual order of business. The new president, Mr. F. L. Cook, gave his address, then we adjourned for dinner. After dinner the house was again called to order and the meeting opened by song from the Club. Roll call was responded to by quotations from the Bible. The annual report of the secretary and treasurer showed the Club in good standing. Co-operation in the Club was the next subject on the program to be discussed by W. W. Metta, who was not present.
Mrs. Coon, of Roscommon county, who
is here in the interest of the Grange, is here in the interest of the Grange, took up the subject and told of the necessities of co-operation among the farmers, what the Granges have done and the problems they now have on hand that need the support of the farmers to carry them through. Rev. Mumford, who is very much interested in farming, thought if a farmer had his stock and produce kept in first-class shape and a good grade there would be no trouble in selling all he could produce at a good price if he co-operated or not. "Live Stock vs. Grain Farming" was taken up by C. W. Mathews, whose argument was in favor of live stock. We must have something to keep up the fertility of the soil in order to raise grain, and stock will bring Our programs cost us \$5.00. I think here are certain topics that could be et up a year in advance for each search on of the year or month of the year. The club voted Rev. and Mrs. Mumford honorather topics can be called up in addition to them.

Odessa Club.

We have a card with a program for ach month in the year excepting July. They cost \$5.00. They are a solid card the program of the program for ach month in the year excepting July. They cost \$5.00. They are a solid card the program for ach month in the year a solid card the program for ach month in the year excepting July. They cost \$5.00. They are a solid card to raise grain, and stock will bring a farm up in fertility sooner and better than commercial fertilizers. The Club voted Rev. and Mrs. Mumford honoratory members and also tendered their appreciation of the retiring president, S. Z. Crowel, by a rising vote of thanks. After the question box and song we adjourned to meet at Highland Home, with Mr. and Mrs. F. L. Cook, the second Thursday in February.—Cor. Sec. The Farmer and the County Fair.— The Farmer and the County Fair .-

They cost \$5.00. They are a solid card and won't wear out or tear. We have had men in our Farmers' Club who could go anywhere and make a speech. I believe that every Farmers' Club ought to be a live wire in itself.

Columbus Club.

We have been organized eighteen years and we have had printed programs for five or six years. I feel that we are quite successful because we took a prize of \$25 at the county fair which helps us out.

I think we have good speakers in the Essex Club, but when a man comes before us and speaks upon a line that he makes a life study, he can give us better thoughts, better ideas and some.

The Farmer and the County Fair.—The January 4, with Rev. and Mrs. Polfuck at the M. E. Parsonage. The principal feature of the day was an address by Mr. W. B. Burris, manager of the Jackson County Fair. His theme was, "The Farmer and the County Fair.—The January 4, with Rev. and Mrs. Polfuck at the M. E. Parsonage. The principal feature of the day was an address by Mr. W. B. Burris, manager of the Jackson County Fair. His theme was, "The Farmer's Clubs occurred Wednesday, January 4, with Rev. and Mrs. Polfuck at the M. E. Parsonage. The principal feature of the day was an address by Mr. W. B. Burris, manager of the Jackson County Fair. His theme was, "The Farmer's Clubs occurred Wednesday, January 4, with Rev. and Mrs. Polfuck at the M. E. Parsonage. The principal feature of the day was an address by Mr. W. B. Burris, manager of the Jackson County Fair. His theme was, "The Farmer's Clubs occurred Wednesday, January 4, with Rev. and Mrs. Polfuck at the M. E. Parsonage. The principal feature of the day was an address by Mr. W. B. Burris, manager of the Jackson County Fair. His theme was, "The Farmer's Clubs occurred Wednesday, January 4, with Rev. and Mrs. Polfuck at the M. E. Parsonage. The principal feature of the day was an address by Mr. W. B. Burris, manager of the Jackson County Fair. His theme was, "The Farmer and the County Fair. His theme was, "The Farmer's Clubs occurred Wednesday, January 4, wi thing better to think of before we go away. I think it is a proper thing to have once in a while a speaker that is a specialist along his line. Now, we had Miss Raymond, from the Agricultural College, who is a speaker on home economics, and I think she gave a better talk than any of our members. I think it is a good thing to do.

CLUB DISCUSSIONS.

A Good Motto for a Progressive Club. Looking-glass Valley Farmers' Club has entered its twelfth year with "Cooperation, and a square deal for yourself and neighbor," as its motto. The new president, James R. Lowell, is looking after details with fine executive push and ability. The vice-president, Henry Wesseler, and wife entertained the first winter meeting in their usual hospitable manner. R. C. Reed, of Howell, gave a fine address on "The True Co-operative Spirit," and a fine chicken-pie dinner was served. The December meeting was held at the pleasant home of Mr. and Mrs. George Bateman, with 75 present. John Henning and Mrs. J. R. Lowell gave full as well as our own. For this and oth-A Good Motto for a Progressive Club. Looking glass 'Valley Farmers' Club has entered its twelfth year with 'Coperation, and a square deal for yourself and neighbor," as its motto. The new president, James R. Lowell, is looking after details with fine executive push and ability. The vice-president, Henry Wesseler, and wife entertained the first winter meeting in their usual hospitable maaner. R. C. Reed, of Howell, gave a fine address on "The True Co-operative Spirit," and a fine chicken-pie dinner was served. The December meeting was held at the pleasant home of Mr. and Mrs. George Bateman, with 75 present. John Henning and Mrs. J. R. Lowell gave full and interesting reports of the State Association, and Rev. B. J. Youngs gave a brief talk on roads in Pennsylvania, followed by a discussion on road building systems.

January 9 was institute day at the Wacousta church. An oyster dinner was served in the Club's best style, after which Mr. Down, of M. A. C., gave a chart talk on pure-bred seed, showing the best varieties of wheat, oats, and barley as demonstrated by trial at the M. A. C. An interest in organizing a group of our young progressive farmers to experiment along this line was manifested. This subject is to be investigated and taken up at the February meeting. The community is envirance of the same proposed in the county meeting. The community is envirance of the same proposed in the county meeting. The community is envirance of for for for form all sources \$34,000. We have only got started but are doing well. There is one great danger, however, and that is a subject in the state for diversified farming. We had about 20,500 different articles last year competing for premiums, and received from all sources \$34,000. We have only got started but are doing well. There is one great danger, however, and that it can not be mortinged. The buildings, worth at least three years the fair has been running, we have spent for misor county fair in the state and the best asset Jackson county has to develop itself. This i

A vote of thanks was given Mr. Burris for this inspiring address. There will be no meeting in February, but a farmers' institute instead. The March meeting of the Farmers' Club will be held with Rev. and Mrs. Cutler.—N. B. Wood, Cor. Sec.

Big Ben Westclox Alarm

> VIX A. M. for the big man of business who knows the luxury of ample timewho's up before duty insists. Try Big Ben in the business of living. Set him a little ahead.

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Five Heifer calves and one bull

for service and 6 to eight months old bulls se you. If interested, write as soon as L. E. CONNELL, Fayette. Ohio.

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By careful retention, for many years, of largest producing females, and use of superior sires, a breeding herdof wonderful quality has been established. We are selling young bulls of this "TOP NOTCH" quality of serviceable age, at moderate prices. Information, pedigrees, etc., on application. McPHERSON FARMS CO., Howell, Michigan.

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Holstein Calves, 10 heifers, and 2 bulls 15-16ths pure.

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10 HOLSTEIN BULLS at FARMERS PRICES

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THE MILK AND BUTTER KIND
Bull ealves by a Sire whose 3 nearest dams average;
Milk, 7 d, 658,2 lbs., Butter 39,618 lbs., His dam's record
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FOR SALE 4 registered Holstein cows. Fairview Segis Marie No. 99601. A. R. O. 9 years old, due March 1. Queen Butter Boy No. 187193. A. R. O. 4 years old, fresh Sept. 18, with heifer calf. Joan Saginaw No. 187294. 4 years old, fresh Dec. 21, male calf, by side, Lady Orsego Korndyke No. 210210, 4 years old, fresh Dec. 16, Easy milkeys and guaranteed all right, Write or come and see them. Lewis J. Benjamin, R. D. 1, Clio, Mich.

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1 to 9 months old. Dam's A.R.O. Our herd sire is Johanna McKintey Segis 3d. 7 nearest Dams aver age 27,26 BLISSVELDT FARMS, Jenison, Mich.

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I have several young bulls for sale, good individuals
and the kind that is a credit to head any herd atfarm
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Registered Holsteins. Young bull ready for service guaranteed. W. B. Jones and J. F. Lutz, Cohoctah, Mich

A 26 LB. JR. 4-YR.-OLD

2-yr.-old and a 15 lb. Jr. 2-yr.-old were records recently made in our herd. All herd have creditable A. R. O, records and

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REG. HOLSTEINS: Herd headed by Albina Bonte Butter Bby No. 93124. Dam's record at 6 yrs. butter 28.53 lbs. milk 619.4. Yearly record at 24 yrs. butter 802 lbs. milk 18622 lbs. W. B. READER, Howell, Mich

Holstein and Guernsey Heifer and Bull Calves Holstein and pure Greensey, but not registered, nicolor. \$20,00 each, all express paid to any point MEADOW GLEN, Wiltewater, Wis

A. R. O. Holstein Cows Daughters of 25tb, cow. two years old three fourths sister to three heifers I sold at Detroit-sale for \$3,950, recently fresh, mostly white beautiful individuals, excellent-condition. Write for pedigree and delivered price, Hobart W. Fay, Nason, Mich.

REG. Holsteins. Place your order now for a bull calf. I have cows due to freshen soon, bred to the best bull in Mich. Elmer E. Smith, Redford, Michigan

FOR SALE Holstein-Friesian Bull Calf of Hengerveld De Kol blood lines, 4 weeks old, also 4 Chester White (O. I. C.) Boars, 2 and 4 years old, SERRADELIJA FARM, Oscoda, Mich., Carl E. Schmidt, Prop.

For Sale Ten head of Grade Holstein cows and one Holstein bull selected from the McPherson Top Notch herd. E. C. SHUPP, Hillsdale, Michigan

\$200 Buys Reg. Holstein heifer 1½ yr. old fresh next summer and Reg. bull 14 mo. old, not akin both evenly marked. B. B. REAVEY, Akron, Michigan

Six Registered Holstein Cows all in Calf to a Son Mobile: also six Calves by same Sire, Edgeriver Farm, Geo. W. Burt, Prop., Redford, Mich. Reg. Holstein Bull calves. Michigan Champions 1916.
Male and female, World's record breeding at Farmers' price. John A. Rinke, Warren, Mich.

REGISTERED Holstein cows, heifers and youn bulls for sale. Price right. Come and see herd C. L. Hulett & Son, Okemos, Mich

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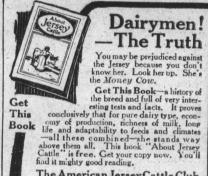
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ALLEN BROS .. PAW PAW, MICH. 50 Herefords BOTH SEXES ALL AGES EARL C. McCARTY, Bad Axe, Michigan

Jersey Bulls for Sale from high-producing dams, with semi-official test. C. B. Wehner, R. C. Allegan, Mich

Maple Lane B. of M. JERSEY HERD offers for sale, toberculin tested bulls, bull calves and heifer calves carrying the blood of the greatest producers of the breed. IRVIN FOX, Allegan. Mich.

Maple Hill Farm Registered Jersey Cattle for Sale
Both sexes. The kind that pay at the pail.
J. R. Worthington, R. No. 7. Lansing, Michagan



Jersey Bulls for sale, ready for service. Ont of good producing dams. Prices right. R. B. FOWLER, Hartford, Mich.

The American Jersey Cattle Club 346 West 23rd Street, New York City

The Wildwood Farm Jersey Cattle, Majesty Blood. We have Bulls for sale from Register of Merit cows of good type. Write your wants. Alvin Balden, Capac, Michigan.

JERSEYS FOR SALE Young bulls service from R. of M. ancestors. Meadowland Farm, Waterman & Waterman, Packard Road, Ann Arbor, Mich.

FOR SALE REGISTERED JERSEY BULLS Ready for service. Write your wants. SMITH & PARKER, R. D. No. 4, Howell, Michigan

Hillside Farm Jerseys Forsale, seven mos. old bull calf, fine, large, individual mysological for the carest dams is 2878 lbs. butter. C. & O. Deake, Ypsilanti, Mich.

Lillie Farmstead Jersey Cattle. Bull calves from R of M: Cows, also heifer calves and several bred heifers for sale. Colon C. Lillie, Coopersville, Mich Shorthorn Cattle of both Sex for Sale W. W. KNAPP, Howell. Michigan.



Bidwell Shorthorns

"For Beef and Milk"

This heifer at 6 months has bone, size and quality—our own breeding. The blood of Scotch bulls, Imp. Shenstone Albino and Imp. Villag-er Registered stock always for sale.

BIDWELL STOCK FARM, Box B, Tecumseh, Michigan.

Bates Shorthorns the original milk strain, 2 bulls and J. B. HUMMEL. MASON, MICHIGAN. Milking Shorthorns. Bulls Ready for Service. DAVIDSON & HALL, TE CUMSEH, MICHIGAN.

Shorthorns Dairy or beef bred. Breeding stock all seeding stock all seed of Country of C Two Shorthorn Bulls for sale. 9 and 10 months old.
Price right. For particulars address J. E. Tanswell, Mason, Michigan.

SHORTHORNS FOR SALE 8 Bulls, also females. W. B. M cQuillan, Howell, Mich

Shorthorns For Sale. Young bulls \$100. Bred cows write W. J. BELL, ROSE CITY, MICHIGAN. FOR SALE: Two yearling dairy Shorthorn bulls.
Chas. M. Dunning. Coopersville, Mich.

FOR Sale-Reg. Short Horn Bulls by Maxwalton Monarch 2nd, a son of Avondale, from 11 to 13 mos. old. John Schmidt, Reed City, R. No. 5., Michigan

2 yr eld Bull, Duke of (Milking Shorthorn) Wildwood 434541, for sale. Recorded. Price \$200 (Two hundred dollars). Joseph Lindsey & Son, Otsego, Mich,

Polled Durhams. Extra for Beef and Milk. Heavy yielding clean White Scottish Chief Oats. Pure White Wyandotte Cockerels \$1.50 to \$2.50. Frank Bartlett, Dryden, Mich.

Cattle For Sale 2 Loads feeders and two loads yearling steers. Also can show you any number 1, 2 and 3 years old from 600 to 1200 lbs. Isaac Shanstum, Fairfield, Iowa, R-8.

FOR SALE 3 mo. old ball calf from a 15 lb. 3
yr. old dan. 35 lb. sire.
Esperance Dairy Farm, Lansing, Mich., R. F. D. 5

HOGS.

Durocs and Victorias Heavy bone, lengthy Spring Boars and Gilts from prize winners sired by one of the best Sons of the Great De fender & other noted strains. M. T. SYORY, Lowell, Mich

Borkshires, Boars, serviceable age, best blood lines. Registered. EL MHURST STOCK FARM, Almont, Mich.

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

Horse Perspires too Freely.—I have a five-year-old horse that sweats very easily and I might say that jogging him two miles causes perspiration to drip off him. He is in good condition, but during the summer he never perspires more than balance of my horses. J. S., Richmond, Mich.—Your horse should have been clipped the middle of November and if you drive him much it will benefit him to be clipped now. Give him a teaspoonful of acetate of potash in feed or water once a day.

Sprained Fetlock Joints.—While

Sprained Fetlock Joints.—While plowing last fall our four-year-old mare sprained her front fetlock joints, causing lameness. Since then we have applied liquid blister several times, but she still shows some lameness and the joint is somewhat enlarged. C. E. G., Colon, Mich.—Clip off hair and apply one part red iodide mercury and one parts fresh lard every two weeks until she recovers.

Injured Stifle.—Our six-months-old colt was kicked by another colt, injuring stifle. The blow caused considerable swelling and the joint has never gotten well. C. J. S., Capac, Mich.—Apply one part iodine and nine parts fresh lard to injured parts three or four times a week.

S. H. D., Huron Co., Mich.—Your mare should be well fed, also wash out vagina with a tepid solution of permanganate of potash and water, one part to 1000 parts three times a week.

Worms.—I have a colt coming three years old that is very much out of condition. His appetite is good, is fed three quarts of oats each meal three meals per day, and all the hay he cares to eat. I have noticed some white worms in his bowel movements and I might say that I have tried different worm preparations but they fail to do him much good. A. G. G., Bay City, Mich.—Mix together one part powdered sulphate iron, one part of ground wormseed, one part salt and three parts ground gentian—give a table-spoonful at a dose in feed twice a day.

Itchy Ears.—I have a dog two years old that is troubled with itchy ears. He must suffer more or less pain and he shows it most in damp weather. Z. H. Blanchard, Mich.—His ears should be cautiously swabbed out with tincture iodine or dust on some finely powdered boric acid once a day.

Bone Spavin.—I have a five-year-old horse that went lame 14 months ago and which has been lame nearly all the time since. Our local Vet. fired him September 1, but he is still lame; shows it most when turning. What additional treatment do you recommend? C. F. Y., Norvell, Mich.—Perhaps you have failed to give your horse sufficient rest. Clip off hair and apply one

sweeten the skim-milk with sugar and water.

Knuckling.—I have a horse that is weak in both hind fetlock joints and would like to know how to treat him. J. S., Otsego, Mich.—If you can give the horse rest, clip off hair and apply one part powdered cantharides and six parts of fresh lard twice a month. If you require the use of him, bandage joints in cotton and rub on alcohol twice a day.

Partial Loss of Power.—I have a cow that is down and unable to get up, most of the trouble is in her hind legs and there are some buiches on different parts of body. She is due to freshen in eight weeks. Our local Veterinary thought she had an attack of pneumonia. D. R. W., Sears, Mich.—This is a case where your Vet. should make a careful examination; however, it is possible that she may have had pneumonia and later injured back. make a careful examination; however, it is possible that she may have had pneumonia and later injured back, causing loss of power of hind quarters. Rub her back with mustard and water three times a week. Give her ½ dr. fluid extract of nux vomica, 1 oz. of tincture cinchona (compound) and 3 drs. Fowler's solution at a dose in water as a drench three times a day.

Worms.—Have a dog that will weigh about 30 lbs., that is very thin and gaunt. His appetite is very irregular and he frequently vomits. E. P.;

and he frequently vomits. E. P., Bridgewater, Mich—Give him 30 grs. of powdered areca nut. on an empty stomach three times a week for two

inflamed Joints.—I have a colt that was born last spring, which has recently gone lame in both fetlock joints. She does not limp, but the joints are swollen, she knuckles over slightly and joints are sore to the touch. This filly has grown fast, been fed moderately and has had little exercise. I am now rubbing joints with liniment and keeping them bandaged all the time. J. M., Coleman, Mich.—If this filly had been walked a mile or two a day and allowed to exercise, her joints would have been in better condition. All growthy young animals should have a certain amount of exercise every day; besides, they require plenty of fresh air, or they do not grow up to be hardy animals. Apply equal parts of tincture iodine and spirits of camphor to swollen joints three times a week. If you bandage at all, the bandage should be porous, producing pressure, but not too much heat. Give colt 30 grs. of acetate of potash at a dose in feed or water twice a day and I would also suggest that you change her food supply. Feed some clover, alfalfa or roots and instead of feeding much corn, feed oats and wheat bran.

J. W. S. writes that he finds no trouand wheat bran.

instead of feeding much corn, feed data and wheat bran.

J. W. S. writes that he finds no trouble in killing the lice on his cattle and horses by applying some calomel with a pepper box dusting some of this white powder on back part of head of cattle once a week for three weeks and for lousy horses, he dusts a little of the powder in mane and along the back and some near root of tail. He also states that the animals should not be allowed to get wet while this treatment is being applied. Calomel, when applied externally acts as a dessicant, stimulant, antiparasitic and antiseptic, therefore you had better apply mercurial ointment which is made by mixing together 50 per cent of mercury, 25 per cent lard, 23 per cent suet and two per cent oleate of mercury. This blue ointment can be placed where you apply the powder, and if so it will give you better results than calomel which is mild, chloride of mercury.—Ed.

Mange—Lice.—Every winter my young stock and some of my cows are

you better results than calomer which is mild, chloride of mercury.—Ed.

Mange—Lice.—Every winter my young stock and some of my cows are troubled with an itchy condition of the skin, and I might say that there are some lice on my young stock. My cows have been milking since last spring. Would you advise buying grain for them at the following prices: Cottonseed meal \$2.60; linseed meal \$2.75 corn meal \$2.25 and bran \$1.85 per cwt. I have been feeding them silage, bean pods and clover hay but I have thought they were not doing very well. M. P. S., Clair, Mich.—Appry one part coal tar disinfectant and 29 parts of water to itchy and lousy cattle three times a week. Perhaps they need grooming. Feed them equal parts by weight of corn meal and wheat bran twice a day, in addition to what you are feeding them and it will pay you to do so.

Dropsy.—Our 12-year-old horse is

Dropsy.—Our 12-year-old horse is siek, legs stocked, swelling under belly and occasionally his heart thumps. Our local Vet. has been treating him for the past four weeks. J. F. C., Eldorado, Mich.—Give your horse ½ dr. fluid extract nux vomica, ½ dr. fluid extract digitalis and 2 drs. Donovan's solution at a dose three or four times a day

a day.

Cows Crave Wood.—My cows are more fond of chewing wood than they are of good feed. I am feeding malt sprouts, oil meal, corn silage and clover hay. E. L. J., Wayne Co.—Give each cow a dessertspoonful of dilute hydrochloric acid in a quart of water as a drench three times a day, or mix the medicine in water in their feed.

the medicine in water in their feed:

Hard Milking Cow.—I have a good cow, but she is a hard milker. This cow came fresh last July and is due to come fresh again next April. What can be done to make her milk easier without any risk of doing her harm? C. S., LeRoy, Mich.—Cautiously dilate teat canal with a dull pointed probe; however, I might say that this is work that should be done cautiously and under septic measures, or you may ruin her udder.

that should be done cautiously and under septic measures, or you may ruin her udder.

Barren Cow—Protruding Vagina.—I have cows which fail to become pregnant and I would like to know if there is anything that would assist in correcting this trouble? Have a cow that is very thin, caused I believe, on account of prolapse of uterus. Would like to have you suggest a tonic which will assist in fattening her. L. M. P., Adrian, Mich.—Cows that are shy breeders very often suffer from the bad effect of miscarriages and which are doubtless the result of contagious abortion infection. Very little can be done with many of these cases. Doubtless you have seen prescriptions in this column which you may try. Give your cow 1 dr. of ground nux vomica, ½ oz. of ground cinchona and 1 oz. of ground gentian at a dose in feed two or three times a day. She should be well fed and her fore feet placed three or four inches lower than hind, when in stall. This will have the effect of uterus and vagina falling back into proper position.

On Dry Feed

Nature takes care of the horse when he is on grass. But your horses are stabled and fed dry feed-dry hay, oats, corn, chop feed. That's the cause of constipation and stoppage of bowelsmighty serious horse troubles. Keep the bowels regular, the blood circulating, the digestion good by using

Dr. DAVID ROBERTS' PHYSIC BALL and HORSE TONIC

They make grass conditions for horses. One Physic Ball equals a month of grass. Kidney, blood and liver are all kept in order by Horse Tonic. Your horses will not have shaggy coats, stocky legs, worms or be hide bound.

Colic Drench a great colic medicine stable. Stimulates the paralyzed bowels, prevents distention does away with wind and spasmodic colic.

Fever Paste approved medicine for Distemper Fevers, Colds. Acts upon the inflamed membranes of the throat and overcomes germs of disease.

Go to your own druggist for Dr. Roberts' Live Stock Prescriptions. If not there, send us his name and we will see you are supplied. Nearly 4000 dealers in U S. Look for and insist on getting the package bearing Dr. Roberts' picture. Send \$1.00 for Dr. Roberts' 184-page "Practical Home Veterinarian," treating all diseases of all live stock. Address

Dr. David Roberts Veterinary Co.



Home of the greatest show herd in the State. Stock of all ages and both sex for sale, including some of the winners at the State Fair, write us for particulars and let us tell you about them and our

HOLSTEIN BULLS

some of them old enough for service, sired by "Maplecrest Korndyke Hengerveld" (the Bull with the best yearly record backing of any sire in the world) and "G. & B. Segis Ulrica Pledge 108790," all from A. R. O. Dams with good records and the best of breeding, one very fine Grandson of the FIFTY THOUSAND DOLLAR BULL out of a 27.39-lb. dam, all stock guaranteed to be just as represented and a credit of six months will be given to responsible parties.

SWIGARTDALE FARM, Petersburg, Mich.

Duroc Jersey still have 7 choice boars for sale. Sire shigan Masterpiece No. 2855. Send for pedi We still have 7 choice boars for sale. Sired by our Michigan Masterpiece No. 2835. Send for pedigree. You will be more than pleased. Prices Reasonable. THE JENNING'S FARMS, R. F. D. I. Balley, Mich.

FOR SALE

10 Reg. Shropshire yrl. Ewes that are first class in every respect. Price \$25 per head. Bred for Apr. lambs M. A. BRAY ESTATE, Okemos, (Ingham Co.) Mich.

J.W. KEENEY, Erie, Mich. Gitts bred for April far Breeder of Durod

Duroc Jerseys 30 bred gilts for sale priced to sell.

Carey U. Edmonds, Hastings, Mich.

Duroc Jerseys Choice fall pigs either sex. \$15, \$20. Reg. & Del. anywhere in State. Fine Stock. J. E. HICKS, St. Johns, Mich.

DUROC Sows, Spring gilts, Aug. Boar Pigs, Sept. Pigs either sex. Percheron Stud Colt six months old. E. J. Aldrich. Tekonsha, Mich

DUROC SOWS

40 head good growthy young sows and gilts bred for early Spring farrow to two of the best big type young bears in the state. Free livery for visitors. NEWTON BARNHABT. ST. JOHNS, MICH.

Buroc Sows 26 beauties bred to grand big boars at boars, Orio L. Debson, Quincy, Michigan.

Duroc Sows and gilts bred to Eureka Cherry King and Crimson Critic son of Critic Model 1916 champlon Iowa Fair. W. C. Taylor, Milan, Mich.

DUROC Sows and gilts bred for Mar. and Apr. E. D. Heydenberk, Wayland, Mich. Wayland, Mich.

Duroc Jerseys Gilts and tried yearling orion Cherry King the Prentager Champion of the breed also fall pigs. F. J. DRODT, R. I. Monroe, Michigan

FOR SALE: Duroc Jersey swine, choice breeding good quality (either sex). S. C. W. Leghorn cockerels \$1.50—\$3. Buff Rock cockerels \$2—\$8. John McNicoll. Station A. R. 4, Bay City. Mich. Duroc Jerseys Boars and Gilts all sold.

Some good fall pigs for sale.

Wm. W. Kennedy.

Duroc Jerseys One Apr. gilt bred for Apr. farrow. Price \$35. Also some Sept. pigs, either sex. H. G. Keesler, Cassopolis, Michigan.

CHESTER WHITES Gilts bred to farrow in Feb. or March. Pall pigs, either sex F. W. ALEXANDER. Vassar. Mich.

Parhams' Pedigree Stock Farm offers; Reg. C.W. Bears, Bred Gilts, Fall Pigs, Reg. A. R. O. Holstein Cows, Male Calves. Show Bull ready for service, price \$125. R. B. Parham, Bronson, Mich.

Swigartdale Farm Berkshires O. I. C. Stock all Sold

4 last fall boars big growth; ones, also last spring pig Farm 36 mile West of depot Nashville, Michigan O. I. C's. either sex, not akin. Otto B. Schulze,



HAVE started thousands of breeders on the road to success. I can help you. I want to place one hog from the greathest in every community where I am not already reported by these fine early developers—ready for market at six months old. Write for my plan—"More Money from Hogs. 6. S. BENJAMIN. R. F. D. 10. Portland, Michigan

CHOICE BRED GILTS Bred to Big Prince 56002, stred by Wildwood Prince III0 b, 3 yr. Grand Champion at Iowa, sold for \$150. Ship C. O. D.—J. Carl Jowett, Mason, Mich

and Chester White Swine, all ages. A few service Boars and open gilts, 400 fall pigs either sex, sired by Cran dells Wonder, Grand Champion at Ohio State Fair, Schoolmasterthe champion of champions and highest price boar of the breed and others. Get a sow Bred to Gallaway Edd Grand Champion Mo. State fair, we are booking orders. We had the undefeated breeders age herd at six state fairs. Get cur catalogue, buy the best tip pays, we have them. We ship on approval. Bolling Visu Stock Farm. Cass City, Mich. R. 2

O. I. G. & Chester White Swine

O. I. C. SWINE: 20 gilts due to farrow for part of April. Will be so ld at knock-down price. for part of April. Will be so ld at knock-down price. Have also fall pigs. Write me y our wants. Satisfaction guaranteed. A. J. GORDEN, R. No. 3, Dorr, Mich.

O. I. C. Serviceable Boar's, Gilts bred for March and April farrow. Prices reasonable. H. W. MANN, Dansville, Mich.

O.1. C. Serviceable boars. Yearling sows and fall pigs. G. P. Andrews. Dansville, Michigan.

O. I. C. Year old boar 2nd prize winner s ready for service. A. J. Barker, Belmont, Mich. FOR SALE. Thoroughbred O. I.O. and boars. O. D. Somervill, Grass Lake, Mich. R. 2.

O. I. C's. 25 choice Gilts bred to Son of School pigs. Glover Leaf Stock Farm, Mouroe, Mich., R.1 0.1. C. Choice bred gilts for Apr. & May farrow. Ser-stock. Write for low prices. A. Y. Hatt, Grass Lake. Mich.

O. I. C'S. Am offering two extra good boars and a few bred gilts.

C. J. THOMPSON, Rockford, Michigan

HAVING sold my farm I will sell my entire herd of feb. 14. Write for catalog. E. B. MILETT. Fowlerville, Mich.

Rig Type Poland China bred for March and April faction guaranteed. G. W. Holton, Kalamazoo, Mich.R. 11.

LARGE Type P. C. largest in Mich. Boars all sold. Have 38-of this best sig strotoly bond gills I ever raised. Sired by & head-of the largest boars of the breed, from massive dame & large liters. Come & see & be convinced. Expenses path if not a seperanted. Free livery to visitors, W. E. Livingston, Parma, Mich.

BIG TYPE P. C. Boars and Gilts all sold for this season.

Armstrong Bros., R. 3. Fowlerville, Mich.

Francisco Farm Poland Chinas Big Types With Quality

Ten 200 lb. Spring Boars from prize winning stock. They're long, strong, big-boned, rugged fellows. Pictures, circular and price list on request. P. P. POPE. MOUNT PLE ASANT, MICH.

Big Bone Poland China Spring boars, The quality and price will surprise you. G. T. Ells, Charlotte, Mich.

NOW IS THE TIME TO BUY

Twenty-five tried Big-Type Poland-China brood sows to be bred for March and April farrow. Ten splendid Spring boars at \$25.00 each for quick sale. Worth \$50.00.

Kalamazoo, Mich. Hillcrest Farm,

At Half Price and Sold Out Except some dandy fall pigs, and a big rugged black Percheron Stallion, (registered) coming three, for \$350,00. Come and see him.

J. C. BUTLER. Portland, Mich. Bell Phone.

Large Stied Poland China spring and fall pigs: also B. P. Rock cockerels at special low prices to quick buyers. Robert Neve. Pierson, Mich.

BIG Type Poland Chinas. Cho ice April boars, fall pigs fin pairs. Chance to get started for a little money. Big Minorca Cockerels, Satisfaction guaranteed. R. W. Mills, Saline. Mich.

For Sale Poland Chinas either sex, all ages. Some P. D. Long. R. F. D. No. 8, Grand Rapids, Mich.

LARGE STRAIN P. C. boars. A nice lot of gilts being bred for April farrow.

H. O. SWARTZ. SCHOOLCRAFT, MICH.

Poland Chinas. As big, as good, as grow in lowa. Herd headed by Gollath Farver. I can please you. Robert Martin, R. 7, Hastings, Michigan

Large Type Poland China Bred Sow Sale, Feb. 20, '17 Write for catalog. W. J. Hagelshaw, Augusta, Mich.

Big Type Poland China Gilts, bred for April farrow, with size and quality.

A. A. WOOD & SON. Saline, Michigan

10 Yorkshire Gilts, 2 Boars one mature; Red Polled cattle. E. S. CARR. Homer. Michigan

HALLADAYS' HAMPSHIRES 5 tried sows, 2 yearling boars, for immediate sale. Fall pigs. O. H. Halladay & Son, Clinton, Michigan

Hampshire Swine. Bred Sows and gilts for August and September farrow s. Spring pigs, sex both. FLOYD MYERS, R. No. 9, Decatur, Ind.

HAMPSHIRE HOGS all sold out, would sell one herd boar and book orders for spring boar pigs. John W. Snyder, St. Johns, Michigan, R. 4.

GROWTHY THE DISEASE PROLIFIC "MULEFOOT" RESIST-THE PROFITABLE ING HOG

FOUNDATION STOCK FROM BEST BLOOD OF BREES

THE CAHILL FARMS KALAMAZOO

MULEFOOT Bred sows and gilts. Fall pigs. 6. L. PIERCE, R. 3, Kalamazoo, Michigan

SHEEP

OXFORD EWES

Yearlings \$35.00. Shropshires all ages \$30. All good ones and money makers. Kope Kon Farms, Kinderhook, Mich.

Oxford Down Sheep No more t Sale.
M. F. GANSSLEY, Lennon, Michigan.

Registered Shropshire Ewes for sale. Ten lambs, we five twenty bred yearlings and two year olds. W. F. MORRISH. R. 5, Fiint, Michigan FOR SALE: 29 good, registered Shropshire Ewes bred for April lambs to a ram whose sire & dam were both imported. Address, H. F. Mouser, Ithaca, Michigan

Registered Shropshire breeding ewes, wool-muston Price reasonable. J. P Andrews, Dansville, Michigan

HORSES

Percheron **FEBRUARY 7, 1917,**

at 12 o'clock noon. Owing to the death of Mrs. Wm. Bird will sell our entire stock of Pure-bred horses consisting of: 1 Stallion coming 4 yrs. old, wt 2000; 1 Stallion, 20 mo.; 2 Stallions, 9 mo.; 5 mares in foal, 3 to 12 yrs., wt. 1400 to 1900; 2 fillies 9 mo. All black but one mare, a gray, all Reg. in P. S. A. Also 1 Standard Bred Stallion, six yrs.old, sired by Constenars, (2.1634)

An extra good bunch.

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Percheron Stallions and Mares of the largest breeders in the state. 75 head to select from—herd established 1899.

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Breeders' Directory—Continued on page 154

