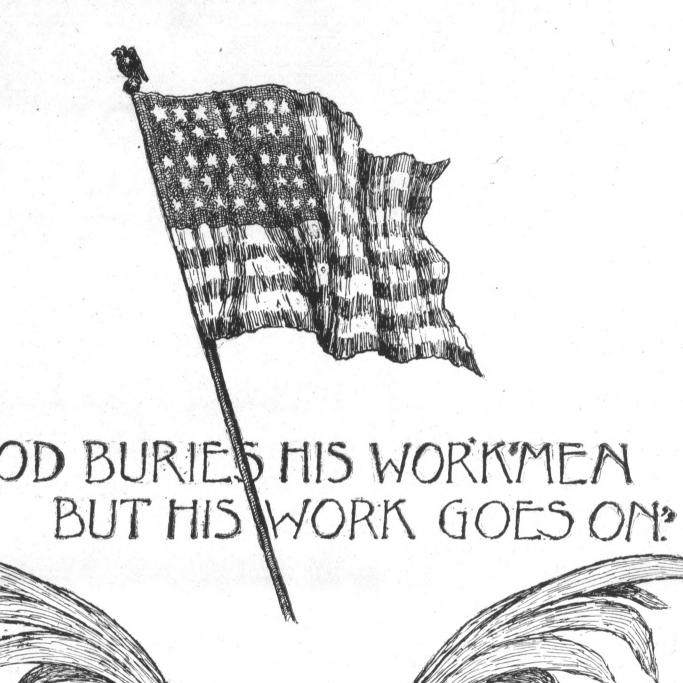


The Only Weekly Agricultural, Horticultural, and Live Stock Journal in the State.

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DETROIT, MICH., SATURDAY, MAY 27, 1916

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DECORATION

The Michigan Farmer

The Lawrence Publishing Co. Editors and Proprietors

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DETROIT, MAY 29, 1916

CURRENT COMMENT.

Decoration Day. pressed in our cover design is one which should incite serious thought on the

part of every Michigan Farmer reader. Fitting as it ever is to honor our departed heroes and commemorate their memory by the decoration of their graves with the fresh spring flowers and by appropriate exercises in which the memory of their deeds may be recalled by all, especially the impressionable school children, it is even more fitting that such observance of the day be made general this year when our great nation which they preserved is enjoying a state of peace which is at this time notable among the great nations of the world.

The veterans of '61 to '65 are rapidly passing to their last reward. Their great work is done, but still the greater task of preserving the integrity and restoring the amity of the great nations of the world and insuring future generations a full measure of peace and prosperity which we now enjoy, is at hand. In this connection every citizen has a duty to perform just as incumbent upon him as was the duty of preserving the integrity of our own nation upon the heroes of the Civil Nor is the course of duty as plain, while history has yet to determine whether the quality of our leadership is as wise or the fibre of our citizenship as strong as was the case during the years which marked that memorable struggle and the period of reconstruction which followed it.

Our faith in the advancement of civilization is strong and our confidence in the quality of our citizenship and the unselfish patriotism of our leaders is great, yet to the end that this may be maintained not only for our own defense, but to succor the world in its hour of need, every citizen should give serious thought to his own obligations and duties as a citizen of this great free nation. The day upon which we honor our soldier dead, many of whom made the extreme sacrifice of which mankind is capable, for the preservation of their country, will also be a fitting time for each of us to give serwhich they preserved.

depend upon the conservation of the moisture supply now so liberally distributed over Michigan.

It will be remembered by the skeptical that last year the precipitation of moisture during the spring months was far below normal, but the unusual disthroughout the summer months has obliterated this fact from our minds, and we remember last summost sections of the state. These extremes may easily be reversed this year; no man can prophesy with accuracy what the weather conditions plain statements of fact to the exclusive when at seven different will be more than a few hours in adsion of flowery language or extravations, and even then there is often a gant claims of any kind were insisted on the latitude of the exclusive when at seven different points attacks were made simultaneously. The Italian lines of the exclusive when at several and the exclusive when at several and the exclusive when at the trainan lines when the exclusive when at several and the exclusive when at the trainan lines are several and the exclusive when at several different points attacks were made simultaneously when the exclusive when at several different points attacks were made simultaneously when the exclusive when at several different points attacks were made simultaneously when a several different points attacks were obliged to the exclusive when at several different points attacks were made simultaneously when the exclusive when at several different points attacks were obliged to the exclusive when at several different points attacks were obliged to the exclusive when at the trainan lines are several different points attacks were made simultaneously when the exclusive when at the exclusive when attacks were when at the exclusive when attacks were attacks when at the exclusive when attacks were attacks when at the exclusive when attacks were attacks when attacks were a curacy what the weather conditions question about the accuracy of the pre- upon. It was decided to hold another

Only by doing our work in such a manner as to best provide for any con- ent year, the exact date to be later tingency can we secure to ourselves the greatest degree of crop insurance. This involves the thorough drainage of all wet or heavy lands so as to provide for the elimination of excess moisture, and the practice of cultural methods which will conserve needed moisture for the use of the growing crops in seasons of scant or poorly distribut-The sentiment ex- ed rainfall.

> The first Northern Northern Michigan Michigan Agricul-Agriculture. tural Congress,

held at Cadillas. Mich., on May 17-18, is certain to have a marked influence in the early development of the agricultural possibilities of that section of the state included in the northern counties of the lower pe- have marked the progress of the spring into Mexican territory as recent reninsula and commonly spoken of as of 1916, one farmer was heard to ask The French minister to Roumania.

Northern Michigan. The congress was called at the instigation of county agricultural agent James F. Zimmer, and was presided over by President Brigham, of the Wexford County Agricultural Bureau. A number of the leading farmers of Wexford county, and prominent busisupport to the movement. The active support of State Market Director Mccounty agricultural work, was early enboth were on hand to aid in the success of the meeting, as was also asnotably successful in the larger develture in their respective communities, such as Samuel Willis, of Benzie coun- favorable conditions prevailed. ty, and Louis P. Haight, of Muskegon meeting. Representatives of the agriizers and educators from different secmaking the personnel of the congress

lems involved, by the various speakers friend, on the program and in the committee

and that a wet spring may be followed A. C., and other speakers, while the energy may far better be conserved by a dry summer, when the greatest importance of county agricultural or- for the solution of the vexed problems success of the season's operations will ganization along broad lines was em- which confront us than expended or phasized by M. M. Calaghan, Osceolo county, who has been largely instru- dolence on our "ill-luck." mental in developing this type of organization in his home county.

The excellent foundation laid for the successful development of Northern Michigan agriculture along broad lines through the influence of this congress is indicated by the conservatism evidenced by Northern Michigan farmers and business men throughout the deliberations of the committee which drafted the resolutions voicing the constituted the only actions noted on the western line outside of the Verdun sector. The Austrians inaugurated a heavy drive against the Italian lines mer as an exceedingly wet season in and business men throughout the desession of the congress at Ludington, fallen. Mich., during the autumn of the presdesignated.

> follows: President, A. L. Hopkins, of Manistee county; secretary, Mr. Tanner, of Mason county.

> The work of this body so auspiciously begun at the recent meeting should be instrumental in directing the attention of a class of settlers to the agricultural possibilities of Northern Michigan who will rapidly develop these now largely latent agricultural possiitable agriculture along lines to which the section is peculiarly adapted.

> On one of the The Test of Adversity. many cold, wet May days which

another if he did not get discouraged statement that he had become almost uation with some suspicion, fearing discouraged ever the situation as it that recent treaties with the Teutonic discouraged over the situation, as it seemed impossible to make any progress with the season's work. other farmer replied more cheerfully ness men of Cadillac lent their active than the outlook seemed to warrant that he never permitted himself to become discouraged over weather condi-Bride and Dr. Mumford, state leader in tions or other factors which were beyond his control, supplementing his relisted in behalf of this movement, and ply with the statement that during the thirty-five years of his farming experience there had always been a seedsistant state leader C. B. Cook, and In- time and a harvest, and that results at dustrial Agent Hartman of the G. R. the end of the season were generally I. Railroad. Men who have been better than he had anticipated when spring conditions were unfavorable, so opment of Northern Michigan agricul- that he refused to worry or become discouraged even when the most un-

National.

Upon reflection an acquaintance who verheard the conversation called to hind the fact that the farmer who rested to look upon the dark side of the ituation was what is generally decribed as a successful farmer who ad already earned a competence and as in the situation which, in the veracular of the day, is termed as "on acquaintance who were keep to the town. Twelve business houses and 60 residences were demolished.

The House of Representatives last week succeeded in passing the flood control bill, rural credits legislation, the conference report on the army bill and the government shipping bill. The Senate spent the week on the rivers and harbors measure, which carries a county, were also present and contrib. overheard the conversation called to uted not a little to the success of the mind the fact that the farmer who refused to look upon the dark side of the cultural press and agricultural organ- situation was what is generally described as a successful farmer who tions of the state were also present, had already earned a competence and was in the situation which, in the verof a character which guarantees the nacular of the day, is termed as "on soundness of the policies advocated easy street," while the discouraged for the development of the great agri- farmer had not attained the same succultural resources of Northern Mich- cess and was more dependent upon the product of the season's work than was After a full discussion of the prob the case with his more fortunate

At first thought it seemed that this appointed to consider the various difference in attitude of mind expresspoints advanced, the principal recom- ed by the two men was perhaps wholly mendations made were embodied in due to the difference in their business resolutions submitted by the commit- success, but is there not just as much tee, which recommended the free use likelihood that this attitude of mind connection as citizens of the country section, particularly sweet clover and business success upon the one hand vetches where general agriculture is and the lack of it upon the other? Unpracticed, urged the organization of doubtedly adversity is the supreme Our leading article of county farm bureaus in every county test of character. These two farmers Crop Insurance. this week presents of Northern Michigan, pointed out the had lived through the same seasons of forceful arguments unusual advantages of this section of favorable and unfavorable conditions, for the conservation of soil moisture the state for the production of live and with apparently similar opportuniwhich may be needed at future stages stock, particularly cattle, and suggest- ties for the accumulation of a compeof growth for the maximum develop- ed plans for the giving of wide pub- tence. It is true, of course, that opporment of staple farm crops. Many farm- licity to the unquestioned advantages tunities along this line cannot be measers may at first thought look upon this of Northern Michigan for the develop- ured accurately by the mere observer, tistics indicate that the authorities and advice as wholly out of place under exment of this line of agricultural pro- and this may not have been actually interested associations are locating isting climatic conditions. It should duction. The adaptability of the north-the case, but the lesson is that nothing many isloated cases of the white plague but should not be interpreted be remembered, however, that one ex- ern counties for live stock production is gained by looking upon the dark treme quite generally follows another, was emphasized by Dean Shaw, of M. side of life or any of its problems. Our increasing.

weakened by vain regrets or self-con-

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—The Germans and the French continue to struggle at Verdun, and early this week both sides claimed minor gains on the front near sector. The Austrians inaugurated a heavy drive against the Italian lines abandon several advanced positions, but no permanently fortified lines have fallen. On the Russian front in Eudich., during the autumn of the presnt year, the exact date to be later
esignated.

Permanent officers were elected as ollows: President, A. L. Hopkins, of Ianistee county; secretary, Mr. Taninvaders have captured many towns, among them Ban, which enables the Russians to straighten their 200-mile line and facilitate provisioning of the men.

Little headway has been made in the Mexican situation this past week. American troops are being gradually withdrawn from the interior and mass ed near the boundary line where the bilities into a well developed and prof-Funston has asked for all the available men from the coast fortifications on the Atlantic and Pacific. Raiding parties appear frequently and people near the border are very much disturbed by the presence of these lawless bands. It was not generally understood that the American forces had gotten so far into Mexican territory as recent re-

The French minister to Roumania has asked to be recalled from his post. over the conditions which prevailed, The reason for this request is not supplementing the question by the stated. Russia, however, views the sitpowers have been of a political character unfavorable to the Allies

Advices state that Gottlieb von Jagow, the foreign minister of Germany, has been retired and the position will be filled by Prince Von Buelow.

Abdul Hamid who was deposed as Sultan of Turkey in 1909 and taken a prisoner to Saloniki is now being held under heavy guard since a pit to lib.

under heavy guard since a plot to liberate him was recently discovered.

It is generally understood that an agreement has been reached between Sweden and England over detention of Swedish foreign shipping by the British patrol boats. In reprisal Sweden held up thousands of parcels in tree; held up thousands of parcels in transit from Russia to England. Controversy over the fortification of Aland Islands by Russia has also been settled in a manner satisfactory to Sweden.

National.

and harbors measure, which carries a \$43,000,000 appropriation. Unless this bill is disposed of soon, night sessions will undoubtedly be resorted to.

In the Oregon primaries early reports indicate that Charles E. Hughes carried the state by a majority of 15,000 as the choice for republican candidate for president, while Theodore Roosevelt received the vote of the Pro-

gressive party for the same office.

About 800 American marines were sent to Santo Domingo last week to reinferce the American troops now policing the little republic.
With imports of drugs from Germany,

ious thought to our own duties in this of leguminous crops adapted to the was the cause rather than the effect of Austria and Belgium cut off by the war, Russia is now appealing to American manufacturers of chemical and can manufacturers of chemical and pharmaceutical products to supply the urgent demand in that country for these commodities.

Statistics by

Statistics by the State Board of Health show that during February of this year more cases of tuberculosis were reported in Michigan than ever before in the history of the state. The county tuberculosis surveys are adding many cases to the number reported regularly by physicians. The statistics indicate that the authorities and instance of the state of th

The Water Factor in Plant Growth PREPAREDNESS

By H. E. MERN

HE need which plants have for ularly with the moisture supply we much as possible, especially during

centage of water is especially notice- cially during June and July. able and especially necessary in the rapidly growing parts. In these parts it is maintained under considerable growth of that plant has been checked by the lack of water.

Much Moisture is Evaporated.

the knowledge that mature plants con- various ways. tain a very high proportion of water. are here given:

each ton of dry matter.

Flint corn transpires 233.9 tons which is equal to 2.14 acre-inches of water for each ton of dry matter.

Red clover transpires 452.8 tons which is equal to 4.03 acre-inches of these from the point of crop limitation as possible of any more that may fall. water for each ton of dry matter.

Barley transpires 392.9 tons which

each ton of dry matter. equal to 4.76 acre-inches of water for

each ton of dry matter. Potatoes transpires 422.7 tons which is equal to 3.73 acre-inches of water for each ton of dry matter.

The average of the values just quot- tion are negligible. ed gives 3.92 inches of rainfall for the

water is so well understood in should expect a yield of a little better the summer, and of reducing run-off a general way that we seldom than three tons of dry matter per acre and deep percolation as much as posgive it special consideration. Thus it if twelve inches of rainfall were avail- sible. The usual way of reducing the happens that while all understand that able for the use of the growing plants, evaporation is that of frequent and plenty of moisture is the first and and so on for other amounts of water shallow cultivation. This is now so greatest need for rapid plant growth until the supply became so great as to well-known and is coming so universaland consequent heavy crop produc- keep the soil too wet for best growth. ly into practice that it seems hardly tion, comparatively few are sufficiently These expectations are borne out, al- worth while to emphasize it more at impressed with its importance to give though perhaps not with mathematical this place. Emphasis is due, rather, it the thought and attention which exactness, by the results of experi- to a point which, while no doubt secwould produce the most profitable rements. In the book referred to above, ondary to the one just mentioned, does mention is made of experiments made not seem to be receiving the thought Plants vary throughout a very wide by its author in which the yield per which it deserves. This point has refrange in their moisture relations. Some acre of land kept constantly under the erence to the store of water in the plants live wholly submersed in water, best moisture conditions (40 per cent soil at the beginning of the season. As while some live on the bare faces of of saturation) was determined for dif- a rule, we do not realize the full value exposed rocks. Between these two ex-ferent crops. This yield was very of starting the crop off in a soil contremes all degrees of adaptation are large-never under four tons and usu- taining a large supply of water. represented. Those plants which live ally much larger. If our crops could in a moist soil and comparatively dry have 10-12 inches of rainfall available, winter and spring rainfall. Usually air are the ones of most importance crops would be very large on ordinary the winter rainfall wets the soil pretty to us, however, because for the most soil irrespective of whether or not thoroughly for some inches and when part, it is from such plants that most careful fertilizing and manuring spring comes our chief desire is that of the food of man is ultimately de- schemes were followed. This is very the soil may dry out so that we can go far from saying that under such cir- to work in it. We do not often stop to Water an Important Element in Plants. cumstances it would not pay to fer- think that while the top layers of soil These plants in the mature state tilize and manure properly, but every may be quite wet, the subsoil-even contain a larger percentage of water farmer knows that poor soil will raise that in range of plant roots-may be than of all other substances. Roughly a better crop in a season of plentiful considerably drier; and that the depth speaking, three-fourths of the plant rainfall than much better soil in a dry of percolation of the store of water desubstance is water. In the immature season. Furthermore, the United pends considerably on the capacity of state the proportion is even greater, States Department of Agriculture pub- the surface layer to take up the rainoften ranging to nine-tenths or even lished a few years ago a discussion of fall and conduct it to the subsoil. Thus more. These young parts, therefore, corn yields as affected by the summer it is that we often minimize the value although of definite form, really con- rainfall. The corn yields were shown of winter rainfall and do not make as tain considerably less dry matter than to be closely proportional to the rain- much of it as we might. does milk. Moreover, the large per- fall during the growing season, espe-

Need.

are even more important from the traced to the irregular distribution of begins. standpoint of crop production than is the rainfall and to the loss of water in

can that which falls.

How Water is Lost.

aqual to 3.43 acre-inches of water for very rapid precipitation unless the soil it increases the water-holding capacity. is nearly saturated or is frozen, and Oats transpires 522.4 tons which is because deep percolation does not or-

production of a ton of dry matter. If much water as possible for plant surface layer. we assume this value to be correct and growth, we are confronted with the Another point of some importance

We do not appreciate the value of

Influenced by Time of Plowing.

Experiments have shown that plow-Should Store Moisture for Time of ed soil absorbs water more readily and retains more of it than does hard, un-We have said that if the growing stirred soil. In one case on record a pressure which gives rigidity to the crop could have available for its use piece of fall-plowed land had 2.31 per structure and enables new parts to be 10-12 inches of rainfall, we could ex- cent more moisture in the spring than pushed out. To supply the water used pect a yield approximating three tons an unplowed piece alongside. The difto fill the new organs as they are pro- of dry matter per acre. But the mean ference in this case amounted to about duced and to supply the much greater annual rainfall of the middle west is 130 tons per acre in the first three feet amount which evaporates, it is neces- about 40 inches, 20-25 inches of which of soil. This difference would certainsary that more must constantly be fall during the growing season from ly make a perceptible increase in the brought from the soil. Before the March to November. If out of this an- yield. In order, then, to save as much leaves of a plant begin to wilt the nual precipitation an amount equal to as possible of the winter rains, we half the summer rainfall could be should plow in the fall if conditions made available for plant growth, crop will permit it. The plowing should, of yields would be very large. Our crop course, be as deep as the draft of the It is possible by experiment to learn yields prove to us, therefore, that that plow and the type of soil will permit, how much water is evaporated from a amount is not saved; and it follows because the deeper the furrow slice is, plant under a given set of conditions that under our present conditions the the greater is the surface absorptive for the production of a pound of dry precipitation is insufficient for the pro- layer and the deeper will the water be matter. This has been done for sev- duction of the largest crops of which presented to the subsoil where the eral of our crop plants; and the results our soils are capable. This may be more difficult percolation usually

In case fall plowing is not advisable, the soil should be turned over just as The rainfall is distributed unevenly soon in the spring as it is dry enough The results vary with the plants used throughout the season. Often a sea- not to puddle in the working. Plowing and with the conditions under which son will have about the normal precipi- breaks the capillary connection bethey were grown, but they agree close- tation, but have it so distributed that tween the subsoil and the furrow slice, ly enough to show that under ordinary a drouth occurs at some time. In that and thus checks the rise of moisture cultural conditions the amount of wa- case, crops are correspondingly low- from below and its consequent rapid ter transpired by plants is very large ered in spite of the normal seasonal evaporation from the surface. When as compared with the amount of dry average. However, there is no way, at we consider that this loss by evaporamatter produced. Some of the values least no practical way, of altering the tion in unstirred soil may reach 20 distribution of a season's rainfall; and tons per acre per day and that it may Dent corn transpires 309.8 tons which because of that it is very important draw on the water supply to a depth of is equal to 2.64 acre-inches of water for that we husband as carefully as we as much as four feet, something of the importance of early spring plowing is forced home to us. After plowing, the The chief sources of loss of water working of the soil before planting are the run-off, deep percolation, and should be such as to retain the moisevaporation. The most important of ture already in it and to store as much is evaporation, because water does not An abundance of organic matter is ordinarily run off except in cases of very important in this respect because

Drainage Helps in Dry Years.

Drainage is important, tile drainage dinarily go on very rapidly unless the if necessary, for while it removes the overlying soil is fairly moist, while water from the soil it thus makes posevaporation from the surface does go sible a deeper penetration of the roots on without interruption and results in of the young crop, so that when a making soils uninhabitable by plants drier time comes later on the root sys-These figures are quoted from Prof. if the water supply is not replenished. tem is more able to sustain the plant F. H. King's book, "The Soil," p. 155. It is not to be understood, though, that than would be the case if, because of Rainfall Influences Rapidity of Growth. the effects of run-off and deep percola- free water in the soil early in the season it had been compelled while young In our attempt, then, to retain as to confine the root system to a thin

that the size of crop will increase reg- problems of preventing evaporation as is this. After the spring rains are over

Produces Victory The Red River Special IS PREPARED



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constant tendency all summer is for the soil to dry out. Take it one year some other way for next year's corn argument goes still further in remov- if liberal applications of fertilizer are planted just as early in the spring as and this costs money. climatic conditions will allow. moisture supply is still further conserved by early planting because the crop becomes large enough to check evaporation by shading the ground sooner than would be the case if planted later.

Let us, therefore, not underrate the value of the summer rains nor neglect proper measures for conserving them; but at the same time let us in the future put a high value on the winter and early spring rains and use every practical method to retain the supply of water thus secured for the use of the crop throughout the summer.

LILLIE FARMSTEAD NOTES.

Beans seem to be the order of the day in this vicinity and in many other sections of the state that I have visited lately. The wet fall prevented the farmers from sowing as much wheat as they intended. The wet spring has prevented a large acreage of oats and for some crop.

fascinating, even alluring. Besides it ed to them and given credit for the is generally understood that last year's crop is all cleaned up. There is absolutely no surplus to carry over, and cow-testing year closed these cows had in this part of the state the commission men are encouraging the planting of a large acreage. "Car-lot" Welman, of Grand Rapids, goes so far as to stake his reputation on \$3 per bush- bred to freshen this fall. I have the I think you will have no trouble, pro- plished by covering small patches with el for beans next fall, even if Michigan produces a 10,000,000 bushel crop.

Here is a chance for a farmer to keep cool and keep his head. Many then, I am a dairyman. It can not be ditch is first made, and this dirt is will grow beans for the first time. Better not put in too many. Better think profit out of beef cattle. the matter over and don't fail to consider that the seed is worth about \$5 per bushel. Ordinarily the time when every farmer is rushing into a crop is a pretty good time to keep out. It may be different this year. Certainly we have unusual conditions. But don't over-reach. Beans must be cultivated when you are busy haying and harvesting. Raise some beans but not too many.

Alfalfa Winter-Killed.

My alfalfa has winter-killed some in don't let the water off when the land is frozen. That, I think was the trouble. In a few low spots where water acenough so the water all ran off it is time. It will not be necessary for cases. these surface drains only for rare instances, like the one stated. For ordi- and upward it is an easy matter to be nary crops this is hardly necessary because a crop only lasts for one year ductive land by a superfluity of fences but alfalfa is for several years and and the adjacent land not actually culthese bare spots will be eyesores as tivated. Pasturage on land of these long as the fields stay to alfalfa.

was hard on new seeding clover. On land not available for cultivation has some of the knolls the clover is pretty still the opportunity for pasturage. thin and will cut a light crop but on

and the weather has become warm, the the lightest. It is often this way, pasture field up to the barn and hav-These knolls must be helped out in ing pasture summer and winter. The tilizer right with the seed, especially with another, therefore, the sooner the crop. About the only way will be to ing the fences from the abandoned used. The phosphoric acid and the crop is put on the soil, the larger will give them a good covering of stable pasture fields. It's a fair estimate potash will injure the germinating be the moisture supply on which it can manure. We have the manure all that the unused areas incident to fence power of the seed. If you plant beans draw. Let us, then, get our crops right but it is about a mile to haul it rows would, if cultivated, pay the in-

Feeding Steers.

the steers I bought on pasture and struct a silo. holding them until July or August. I concluded we would need most of the that seems to give little return it is in December and sold them for feed-bination not easily made into a satis- on the other hand, responds to nitroers for seven cents. gained 1410 pounds, or only 108 pounds fence proposition is akin to the potash corn than beans; 1:11.0 or 0:14.0 average. Not very good, but they got in fertilizer-almost out of reach. In makes a good bean fertilizer. but little grain. Mostly pea vine sil- addition to the high cost of steel wire age and poor clover and alfalfa hay, the cost of sulphuric acid to cleanse it Some dried beet pulp and gluten feed once a day. I don't know what it cost zinc itself and other items have serito feed them. They cost me \$500 and ously advanced in price-so the ten-I sold them for \$681.80, or I got \$181.80 dency will be to make the fence matefor the feed they are and for the labor rial less desirable or the price excesin caring for them. Besides I have the sive. To the farmer contemplating his manure.

Cows or Steers.

Last December I also purchased 11 grade Jersey cows. Some six of them freshened during the fall before I purchased. One was just fresh and the other four freshened in January and there is a large accumulation of land February, one along the last of February. They were entered in the cow-The unusual price of beans is very testing work and all their feed chargbutter-fat they produced at market price. The first of April when the made a net profit above cost of all feed, of \$99.24. They will do-as much more anyway, before they go dry, and I will have the cows left. They are all manure and the skim-milk to offset the vided the tile are laid to a uniform tarred paper weighted down with labor. Which was the best investment? grade. There is always more or less stones. Does it take long to figure it? But dirt that gets into the tile when the bined where the infested ground is expected that I know how to get the

COLON C. LILLIE.

ABOUT FENCING.

With the increased price for fence materials there is an added reason for and all this dirt washed down through some changes in farm fields. The unsightly cross fences that one encounters, decayed posts, sagged wires, and the constantly increased expenses of mainteinence is leading many farmers to abandon small fields. Each farm is in itself a particular problem but the spots. The land is all tiled but tiling more general principle prevailing is to well fenced small fields near the barns. These are used for live stock but cropped in a short rotation with a ing it. cumulated and stood for several days quick return to grass. The old-time on hard frozen ground the alfalfa is lane can be left unfenced and reduced gone. Where the land was rolling to a mere wagon track width, and the ground used for turning space in plowsplendid. Now the question arises, will ing and cultivation. Nearly a rod in it not pay for alfalfa fields to have two width is added in this way to the culsystems of drainage. Tile the land tivated area. Steel posts are quickly well of course, but besides all low set and woven wire stretched for temspots should have surface drainage porary pasturing on stubble ground is so water will not stand there at any a fairly satisfactory condition in most

On farm land worth \$100 per acre deprived of a considerable area of provalues gives, as a rule, less return How to Apply Fertilizer to the Bean We pastured one field of alfalfa pret- than crops. When land was cheap ty close last fall. Kept the young cat- and plentiful pasturage was the oppor-When land was cheap

The spring of 1915 was unusually with crops and dairying. The farmer

terest on a silo. Or, if the portion of people do-the openings in the fertilland thus occupied be sold at the other izer box directly in the row of beans I changed my mind about putting acre valuation the return would con- can be stopped up, closed and fertil-

> If there is any one job on the farm hoe. The 13 head factory fence to restrain stock. The gen. A 4:8.1 fertilizer is better for before its bath in zinc to coat it, the fields from these changed conditions it is often easy to see where the removal of a fence will be a saving in many riod and the vitality of the plant is di-

Shiawassee Co. Jas. N. McBride.

CROP AND FERTILIZER QUES-TIONS.

Will Drain Tile Clear Themselves of period of its growth. For this reason Dirt?

I have a field that I tiled last fall. It froze up before I got the trenches filled, so did not get them filled properly and surface water run in and partly filled the tile with clay. Will they clean themselves or not?

SUBSCRIBER. If water runs through your tile now washed down through the tile by the stand is secured, since the rapid growth dirt gets into them. Sometimes, however, a poor tile will break, or a poor age them. joint will allow the earth to enter and over tile drains several feet across the tile without clogging the drain. If open.

Permanent Pasture on New Land.

seed it for cow pasture without clearing it. What grasses would you recommend? How would sweet clover do in this case Osceola Co.

It will be all right to use some sweet real success along agricultural lines. clover seed, but you will have much use a mixture of grasses.

pounds of Canadian blue grass, four not study his business in detail suffipounds each of red-top, orchard grass, ciently to improve his stock or enrich and timothy and two pounds each of his farm. A farmer that is simply

freezing weather was over I think you is a soil robber. A man that will so is so late the seed ought to be "brush- poorer and poorer, year by year, is not ed" in to cover it.

dry all through April and May. This who has adjacent cheap pasturage the bean crop is to apply it broadcast simply farms to live or for the pur-The silo came into existence at the with the soil. This takes extra work most of the field it is a good stand and time to maintain the proportion of live so most fertilizer is applied at the is growing freely. Of course, right on stock when the other tendency was to time of sowing or planting the crop. these knolls is where there ought to diminish their numbers with increased Manufacturers have supplied us with be the heaviest sod to plow down. This land values. There is still potency in machines that will plant the seed and You may continue my advertisement be the heaviest sod to plow down. This land values. There is still potency in machines that will plant the seed and You may continue my advertisement of moving the apply the fertilizer at the same time. —W. Van Appledorn, Holland, Mich.

It is never best to apply the ferwith a fertilizer grain drill-and most izer distributed on either side of the This is a good way.

A bean fertilizer need contain little pasture for our regular supply of live that of the spring fence fixing. De. or no nitrogen. The bean plant can stock. I paid six cents for those steers cayed posts and rusty wire are a com- get nitrogen from the air. But corn

COLON C. LILLIE.

FARM NOTES.

Eradicating Canada Thistles.

Is there a time when Canada this-iles can be cut to entirely kill them? when? Hillsdale Co. SUBSCRIBER.

Cutting any plant, even a perennial when it is approaching the seeding perected to the function of reproduction through the formation of seed, will give it a serious setback, as more time will be required for the development of buds and the sending up of new stalks than is the case at any other the cutting of Canada thistles when in bloom discourages them somewhat, but is not safe dependence for their eradication. This can be accomplished only by thorough cultivation, which will prevent them from making any growth above ground, or by the smothering process which can be accom-The two plans may be comsown to alfalfa, provided a good thrifty running water. After the soil around of this forage plant will tend to smoththe tile is well settled then very little er the thistles, and the frequent cutting of the crop will further discour-

I have known of holes being made THE SUCCESSFUL FARMER LOVES HIS WORK.

In passing through some porthe grade is uniform and there is run. tions of the country, one fact strikes ning water, as there will be, there is the observer painfully and that is, how little danger of clogging the tile if the very few are thoroughly interested in mouth or outlet of the ditch is kept their work. Altogether too many farmers are farming in order to get enough money to move into town and engage I have some hardwood land just cut in some other business. Too few have over the past winter and would like to a love for their calling. A man may move into a country where good land is cheap and merely hold on for a term of years until the advance of the land makes him well to do; but this is not

A farmer in order to be successful in better pasture and more of it if you the fullest sense of the word must have a love for the occupation. A man I would suggest that you sow seven that has no love for his calling will medium red clover, alsike and sweet farming to get every cent out of the soil that is possible, to hoard up, with-Had you sown this seed early before out regard for the future of the soil, would have had a good stand. Now it manage a farm that it continually gets worthy of the name of a farmer.

A successful farmer in the true sense of the word is one who has such a love they are it pretty close. It shows the effect this spring. We have got to take care of alfalfa if we hold it.

Red Clover.

Red Clover. The best way to apply fertilizer to which he resides, while the man who evenly over the land and harrow the pose of getting sufficient money to land to get the fertilizer well mixed move off, is disgracing his profession. Indiana. W. F. PURDUE.

> "The Michigan Farmer ad brought me more inquiries and orders than any other paper I am using this spring.

The Problem of the Farm Orchard

with the meaning of an apple famine. sprayed and pruned. It has awakened them to the fact that that quickly.

first fact that comes into prominence watched and tended with a vigilance is the benefits resulting to orchards, from weather conditions of 1915. All ple who own neither farms nor apple through the growing season the weather was cool and wet. Trees of all kinds flourished. The dreaded scale ceased in large measure, its work of devastation. Even in old orchards never before sprayed for the malady, conditions became visibly improved. The chief benefit, however, was to the young orchards and to old orchards already being treated for the scale plague. In many ways, the summer of 1915 was a discouraging one for farmers, but as regards fruit trees of all kinds, it was decidedly beneficial. These weather conditions, together with proper spraying, worked wonders even in some old orchards.

Loss of Farm Orchards Being Felt.

Another feature of the subject under consideration has already been hinted at, namely, the awakened tendency to plant new orchards. In some localities this tendency is yet dormant, but in others the process of replanting has surely begun. The wholesale destruction of orchard after orchard in certain districts and the consequent high price of apples for home consumption, have brought the problem clearly and forcibly before the farmers. No fruit is missed as much as the apple, when it is not easily obtainable. Its real value becomes apparent when the old apple orchard has disappeared and its varied assortment of fruits can no longer be had for the trouble of gathering. More and more each year the work of replanting must go on. Some farmers doubtless will not reset apple trees, but enough will do so to make the practice general.

In the struggle of the last few years to save the apple orchards, it has become apparent that the few young orchards could be saved while, in many instances, it was impossible to make much headway in preserving the older aggregations of trees. This fact has been and will be an important and encouraging element in the process of replanting. Spraying must be carried on persistently and methodically, but if the trees are young, results are certain. Many of the old orchards, half couragement of better and more ecosented an almost hopeless problem. In ter results in grading and marketing; many cases the spraying and pruning to buy supplies in a co-operative way process came too late and much mon- and to cultivate the co-operative spirit ey and time were expended in vain, for the advantage of its members and With the knowledge and experience now available the new orchards can be kept free from scale from the beginning, and healthy trees assured.

The Problem of Spraying.

cut and bound into bundles. This fact soil of fair fertility.-R. G. K.

O acute and discouraging has the has simplified the problem greatly for problem of saving the apple or owners of small orchards. They are chard become, of late years, that spared the expense of owning an outfit anything in the nature of improved and the trouble of spraying the trees. conditions is doubly welcome and of In some neighborhoods several farmkeen interest. In looking over the field ers have purchased collectively a in the writer's section, some very en- spraying outfit, and take turns using couraging factors seem to have enter- the equipment at spraying time. Now ed into the situation. It seems prob- and then a man may be found who able that the gloomiest days for or- sprays and tends several large orchardists in these localities under ob- chards for a share of the fruit. Still servation, have disappeared. It is others devote most of their time to the true that in many instances almost to- work and instead of receiving a portion tal obliteration of old apple orchards of the fruit get the entire crop, paying throughout entire neighborhoods has so much per year per tree, in cash. In resulted. But this is better than par- the meantime, in addition to the small tial destruction, for the most part, for cash return, the owner of the orchard it has brought farmers face to face is having his trees systematically

In the increasing interest and activnew orchards should be planted, and ity in regard to apple trees, other fruit trees have come in for a larger share In considering the present status of of attention than formerly. Those vaorchards in this section, perhaps the rieties easily destroyed by scale, are unknown in former years. Many peoorchards, own small hand sprayers and attend regularly to the work of spraying for scale. The situation has grown out of the necesity of the case. The man who owns a few peach or plum or pear trees realizes he must fight the pest if he would keep them. Knowledge and experience count here also, and young trees are sprayed from the beginning, that they may be kept in a healthy condition.

Hillsdale Co. J. A. KAISER.

MICHIGAN FRUIT AND FRUIT GROWERS.

In general, reports as to fruit prospects are cheering. With exception of peaches all fruits promise well. Many thousands of young trees will be in full bearing for the first time this year. A good demand for cherries by the canners is reported in the Grand Traverse

The Benton Harbor Chamber of Commerce is backing the plan to sell home-grown fruits on every train, boat or interurban car entering the city, the fruit being put up in attractive packages, with a view to advertising the 'original fruit belt" of Michigan.

About 10,000 trees have been sold through the Wexford county farm bureau this spring for planting in that section, apple trees bringing 15 cents and cherries 20 cents.

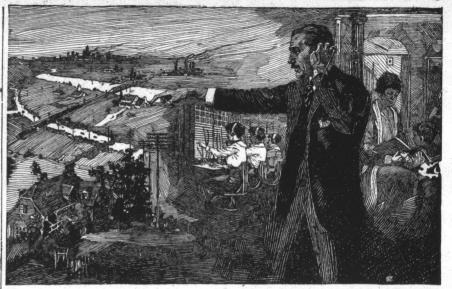
The Northport Fruit Growers' Association, with R. D. Massa as manager, is in good shape and is saving its members money in the purchase of seeds, fertilizing and spraying material this spring. Business is done on a cash

Simpson & Son will enlarge their cannery at Keeler this spring, and will put up tomatoes, raspberries, peaches, cherries and apples this year.

Farmers of Custer township, Mason county, have organized the Custer Fruit & Produce Exchange, with \$5,000 capital. Headquarters will be at Custer village and the objects include endead from the ravages of scale, pre- nomical methods of production and betuplift of the neighborhood

Kent Co. ALMOND GRIFFEN.

A good site is important when starting an orchard and if possible the trees Still another feature recently intro- should be planted on a well drained duced in this section may be found in southern slope. In some sections the up-to-date spraying outfits purchas- where early frosts cause serious losses ed as a business proposition. The own- a northern slope is the best as the buds ers of the outfits hold their services at will not come out as early in the the disposal of orchard owners during spring. This reduces the danger of the spraying season. If he is willing losing the crop but in general fruit to pay for it, the farmer can get his growers seem to profit most on the orchard sprayed, just as in the earlier well drained southern Isope. Hardy days before the self-binder came into varieties that are cared for properly common use, he could hire his wheat will usually thrive on any well drained



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Pasturing the Hogs

secured for the hogs when sold in the raise it.

In his native condition the hog was an omniverous animal, eating a great variety of feeds, cropping the various kinds of herbage which he could find, rooting in the ground for worms and mineral foods, and devouring any and all kinds of beasts and reptiles he could capture. His growth was slow because his stomach was too small to hold of the coarse foods a sufficient amount to enable him to do much more than live. His snout and legs were long, and his body short. He was built for self-defense rather than for the accumulation of meat. He was made up of bones and muscles (lean meat) with just enough adipose to give his meat an excellent flavor, which has made it popular for food with hunters.

Since the hog has been domesticated there has been a great transformation in his build, disposition and habits of life. His wild, ferocious disposition has been changed to a quiet, submissive and tractable animal. His head and legs have been shortened has been broadened and deepened, the bones diminished in size and the capabilities for the accumulation of flesh, market price for it. both lean and fat, have been greatly increased.

While other parts of the body have greatly increased.

The Change in Diet.

In our own country the diet has been alone. narrowed to corn, and corn alone, un-

When grain is fed alone the mass is ing the profits from them. liable to become compacted too closely in the stomach and it is not all brought in contact with the gastric juices of the stomach, consequently it is not all digested. The German chemist, Wolff, says that when hogs are fed entirely on grain, 40 per cent of the feed is wasted. That is an enormous waste and it is advisable to devise means by which the great wastes can be avoided.

The Benefits of Green Forage.

If given an opportunity to run in the field, the hogs will crop the herbage, increase the bulk of the food in the stomach, diminish the amount of grain the gain in weight. Experience and light fleshing of the carcass. the best results.

some growth. In connection with grain cent.— North Dakota Ex. Sta.

HE most successful feeders of feeds, it makes double the gains posswine are on to all of the fine sible, and diminishes the cost of propoints of profit and loss in the duction, thereby greatly increasing the game. Whether it pays to feed hogs profits. Where it is practicable to or not, depends on the outlay in feed raise alfalfa, it is worth the while to and labor, and the amount that can be meet the requirements necessary to

> Next to alfalfa stands rape as a forage plant for hogs. The leaves are sweet and nutritious. It can be sown along at different intervals from early in the spring to late in the summer. It requires moist, rich ground in order to secure a good rank growth. If it is not practicable to pasture the rape and the hogs have to be confined in yards bare of green feeds, it can be cut and thrown to them in such quantities as they can eat it up clean, and good results can be obtained.

> Among the other green feeds I will mention June clover, alsike, white clover and June grass as among the desirable pasture feeds for hogs. Other and more inferior feeds are much more desirable than to compel hogs to live without green feeds.

At the present time when grain feeds are high in price, it will pay well to make the effort necessary to supply the hogs with pasture feeds. Although it is possible to get the market value of the grain feeds by feedand his body lengthened. His body ing it to hogs alone, it is a better policy to feed the grains in connection with pasture feeds and get double the

Good Pasture with Grain Makes Better Hogs.

Another point in connection with passed through great changes, the pasturing hogs should be considered. stomach has remained practically the The pasture feeds carry a large persame, although the intestines have centage of protein and mineral elebeen lengthened and the capabilities ments which makes better bones, a of digesting and assimilating nutrient better growth of muscles, an interelements from the food have been mingling of fat and lean, which means a better quality of meat, which will more closely meet the demands of the Since the hog has been domesticated consumers at the present time, and he has, in too many cases, been car-sell for a higher price than those ried to the extreme of a narrow diet. meats which are fattened on grain

No one who is breeding and raising til the constitutional vigor has been pure-bred swine to improve them and enfeebled and the susceptibility to dis- to sell as breeders to farmers, should ease has been increased. The number think of confining their hogs and raisof pigs to the litter have been increas- ing them without pasture or green ed from two in the wild state, to ten, feeds. Roaming in the fields gives the twelve and sometimes sixteen, which pigs exercise, stimulates an appetite, may have had something to do in re- promotes the health and improves the ducing the vigor and restricting the constitutional vigor. Let us give more capabilities of endurance and resisting attention to the advantages to be gainea by giving the hogs on the farm an An exclusively grain diet is more excellent opportunity to run at pasture. difficult to digest than a mixed diet. It will bring the satisfaction of increas-

Wayne Co. N. A. CLAPP.

DRESSING PERCENTAGE.

The average dressing percentage of hogs is 75, while of cattle it is 53 and of sheep 48. Part of this difference is due to the method of figuring. In the case of the hog the hide, head and feet are included in the carcass weight, while in the case of cattle and sheep the head, hide and feet are not included. Then the hog is very thick fleshed and has a small digestive system. Cattle and sheep have large paunches and required, make more complete digestion possible, and reduce the cost of lowest, due to the wool and the rather

carefully conducted experiments have The dressing percentage of animals shown that the cheapest gains are of each class varies widely. This is made on a mixed diet. In considering due to the amount of flesh, especially the pasture fleeds let us not forget fat, present on the carcass and somethat there are some plants that are what due to the thickness of the hide far superior to others, and when prac- and size of the heads and legs, and to ticable, furnish those that will produce the amount of filling or the amount of feed and water present in the digestive At the head of the list of forage tract at the time of slaughtering. For plants stands alfalfa. It is palatable the hogs the dressing percentage varand nutritious, and carries a larger ies from 65 to 85 per cent with an percentage of protein than any other average of 75. For cattle it ranges of the clovers with which we are fa- from 48 to 70 per cent, with an avermiliar. It will sustain the hogs with- age of 53 and for sheep from 44 to 56 out grain and enable them to make per cent with an average of 48 per

National Dairy Convention Resolutions

ROLLOWING are the resolutions with the breeding and feeding of live Convention at Washington, D. C., bution of dairy products; therefore

Contagious Abortion.

tle are subject,

portance of this problem, we request the Secretary of Agriculture. that it be approached at once from every posible hopeful angle.

Tuberculosis.

of the breeder and the dairy farmer; shall be responsible. and whereas, its presence in the herd can, as a rule, be detected by the application of the tuberculin test by men regulations under which the milk supskilled in its use and when adminis- ply of the country is produced are protered under proper conditions:

tection to their own financial interests, such manner of handling; resolved, varying requirements; that this convention heartily endorses in the eradication of tuberculosis. of the slaughtered animals.

False Reports.

as, unwarranted and untrue inferences have been drawn from such report by the consumers of American butter, hostile to the dairy industry to damage as well. it immeasurably:

made matter of record and that report should be so marked as to disclose the declared woefully incomplete in its materials used in their manufacture. survey and wholly false in its conclusions; resolved, that its publication gress has been made in pasteurization strated by this conference; and in general improvement in handlarger per cent of American creamery legislative effort. butter is made from pasteurized cream: resolved, that we approve and recommend general pasteurization of all alcohol has always been considered as creamery butter.

Division of Department.

May 29, 1884, created the Bureau of ling the dairy farms to extract the fuel Animal Industry specifically "to pre-needed for consumption in the mavent the exportation of diseased cattle chinery and lighting of the farm and and to provide means for the suppres- at the same time to furnish from his sion and extirpation of pleuropneumon- own fields a more nearly balanced raia and other contagious diseases tion; and whereas, the necessary examong domestic animals;" and where- perimentation for determining the cost as, by executive act the activities of of production and the kind of process this bureau hace gradually been broad- and machinery suitable to this develened to include various lines concerned

adopted by the National Dairy stock and the manufacture and distri-

Resolved, that the Conference of Dairy Interests held in Washington, Whereas, contagious abortion among Secretary of Agriculture to partition the dairy herds of this country is a the present work of the Bureau of Anvery serious menace to the profitable imal Industry among three separate production of milk, exceeding in its bureaus or offices, one concerned specieconomic destructive character any of fically and exclusively with animal disthe other diseases to which dairy cat- eases and to be called the bureau of office of animal health; one concerned Resolved, that the Department of with the encouragement of the breeds Agriculture is hereby urged to give of live stock and the improvement of attention in the most persistent and the utility stock on the farm other comprehensive fashion possible, inde- than dairy cattle, and one concerned pendently and in co-operation with the specifically with dairy cattle and the state experiment stations, to this dis- dairy industry. Resolved, that the ease with a view toward controlling it Secretary of Agriculture be urged to and lessening its ravages. We request form the heads of these three bureaus that the best qualified investigators be or offices into a Federal Live Stock assigned to this exclusive task. In Board, which shall administer all live view of the tremendous economic inf- stock regulations, under direction of

Resolved, that the Secretary of Agriculture be also urged to request from Congress another Assistant Sec-Whereas, the presence of tubercu- retary of Agriculture, to whom the losis in cattle is a menace to the profit heads of these three bureaus or offices

Milk Regulation.

Whereas, at the present time the mulgated by the health boards of Resolved, that this convention urge states and cities, and are subject to breeders and handlers of all classes more or less change under different of dairy cattle to weed out reacters administrations of the health bureaus, from their herds as a matter of pro- thereby causing dissatisfaction between the producers and the health either consigning them to the butcher officers, and placing unnecessary buror segregating them in the herd, when dens of expense upon the producers they are of sufficient value to warrant in changing buildings to conform to

Resolved, that we call upon the Secthe state-accredited herd plan of in- retary of Agriculture to appoint a comducing breeders voluntarily to offer mittee consisting of two milk productheir herds for official test and secure ers, one milk dealer, and two sanitara certificate which will accredit their ians, known to be identified with milkcattle to any state without retest; re- production methods in advanced form, solved, that reasonable compensation to frame a set of rules and regulations should be allowed by federal and state covering milk production, which shall authorities for all animals slaughtered embrace methods to be used in the care and handling of cattle, shall de-This compensation should not be ar- scribe methods that insure cleanliness bitrarily limited by statute, but should of cow and milker, shall set forth be fixed by appraisal in each case, or treatment of milk from udder to delivby court decision on proof of the value ery, shall outline barn construction and cleanliness of barns, all with due regard to keeping cost at the level of Whereas, in the Year Book of the the means of the average producer. Department of Agriculture for 1912 ap- Resolved, that when a report from peared a report on the dairy and such committee shall have been apcreamery industry of the United States proved by the Secretary of Agriculbased on an inspection of only 144 ture, he is requested to use his good creameries and dairies among the offices to have such report generally thousands in this country; and where- adopted by the states and cities of the United States.

Whereas, the use of foreign fats in the production of dairy products of all and the information therein presented kinds constitutes a fraud upon the has been unfairly used by interests dairyman and the ultimate consumer

Resolved, that it is the sense of this Resolved, that the facts are thus conference that all products so made

Co-operation.

Whereas, the outstanding benefit dewas all the more reprehensible be-rived from co-operative effort of agricause for many years constant pro- cultural interests has been demon-

Resolved, that the different branches ling cream and in the manufacture of of these allied industries be urged to creamery butter, until today much the consider a closer union in co-operative

Denatured

Whereas, the subject of denatured referring to the conservation of waste products; and whereas, we believe Whereas, the act of Congress of that it is a feeding proposition enab-(Continued on page 697).

Twenty Years of Improving and Perfecting has produced in this, our 1916 model, a Cream Separator that model, a Cream Separator that cannot be approached as a profitmaker for farmers. It represents the highest achievement in separator building. Over 100,000 Reliance Cream Separators have been placed in farm homes during the last two years. Learn about this, our newest model; it goes ahead of anything ever yet offered. **Self-Oiling** Latest 1916 Features Reliance Separator Send for Reliance Book only separator with patented bowl device. Only self-oiling separator; every bearing lubricated by automobile splash system. Most easily operated; right height, supply can waist high; cannot splash; cannot tip; long lived; few parts; gets more cream. And with it all that simplicity which means easy cleaning—a delight to the women of the family.

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Binder Twine Farmer Agents wanted. Get our samples and prices. Theo. Burt & Sons, Melrose, Ohio. When writing advertisers mention Milchgan Farmer THE PASTEURIZATION OF MILK.

BY FLOYD W. ROBISON. (Continued from last week). Inspection Should be Rigid at the Point of Pasteurization.

This is not the only evil of pasteurization. It is one of the exceedingly serious ones and it is apparently just as desirable in the interests of safety that an inspector should watch carefully the pasteurization of the milk as that he should inspect the conditions surrounding the production of that milk on the farm. The consumer of pasteurized milk is fully as interested in the completeness and thoroughness of the process of pasteurization as he is in the production of the milk originally. In fact, the consumer's interests would warrant a more careful application of the principle of pasteurization than supervision at the place of production.

The Things we see are not the Dangerous Things.

In spite of all the publicity which has been given to the food properties of milk, exactly the same as the publicity which has been given to a public water supply, it is the thing which the consumer can see with his own eye which appeals to him most. The water supply of the city of Detroit, for instance, may show contamination with sewage day after day through a period of six months without arousing any protest or criticism from the consumer just as long as it remains perfectly clear. Let a severe storm stir up Lake St. Clair from top to bottom and push a considerable amount of mud and sand into the water, material which is quite innocuous by itself which adds no evil to the water except that of appearance only, and the whole city will be aroused. This is exactly the situation with the milk supply.

More attention is paid to the amount of sediment in the bottom and to the width of the cream zone in the milk than to any other condition of the milk. So if the producer or distributor can deliver to the consumer's door a milk which contains no sediment and which contains a good, broad cream zone, the consumer is pretty generally satisfied with the product. It makes no difference that the same amount of contamination exists as before, for it is not unseen things but the seen things which are taken into consideration.

Any sediment which may be found in milk may be with perfect safety considered harmless in itself for after this sediment has gone through the dissolving influence of the milk for a period of twenty-four to forty-eight hours all of the contaminating material with which it may be associated has certainly been taken up by the milk and rendered invisible.

The Creameries' Reason for Low Temperature Pasteurization.

It is this same consumer's characteristic of paying more attention to the things that he sees with his naked eye than to the actual conditions which exist that is responsible for another of the great evils which occur in pasteurized milk. The breadth of the cream zone in a bottle of milk is materially affected by the process of pasteurization. If the temperature is raised a bit too high the fat in the milk will become homogenized and separates from the other particles with great difficulty so that a well pasteurized milk in which the temperature has been raised high and held a considerable time at this high point will be very apt to show a decidedly narrow cream zone. The analysis of this milk will show at once that it contains fully as much milk fat as a milk which has not been sufficiently pasteurized. But milk distributors know that if they can produce a milk with a wide cream zone they are much more certain of the support of the consumer than when they put out the same grade of milk in which the cream zone has been materially narrowed by efficient pasteurization

(Continued on page 697).



Mother Has Earned This Comfort and Convenience

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Then why have you overlooked the biggest improvement of all good light? The one modern farm convenience that will lighten her labors—and add to her happiness and pleasure each day of her life.

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Magazine Section

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

ITTLE do we know the cost of human progress. To attain its present exalted position the race has vative, the progressive with the retro- ago and who were called upon to solve battle.

The Least We Can Do

sacrificed much in lives, in suffering seems that upon some generations fall who trudged under weary loads, sufgressive, the righteous with the forever the question of free labor and

ate their final resting places, is altogether deserving. We could do little

And when in this year of material and in physical, mental and moral en- more portentious duties than on oth- fered while husband, father or brother prosperity, we strew flowers upon the ergy. Through all the ages the liberal ers. We speak particularly of those lay in trenches before sieged cities or green tents of the city of the dead, elements have battled with the conser- who lived in our land a half century faced shot and shell in the heat of and over the waters, might we not resolve to add to our homage to these That we should honor them and all faithful men and women, some of the security of the union of states. Not who have offered to make the supreme whom are yet with us, lives dedicated In the history of our own country only can we think of what the gallant sacrifice for the security of home and to a work still unfinished, of making we point with no little pride to what soldiers did upon land, and the val- country, not so much for themselves this land a refuge for the oppressed we, as a nation, have done to establish iant sailors accomplished by sea, but as for our generation and generations and downtrodden, a home for the homethe idea of democracy in government. also what the patient and heroic wives to come, by setting aside one day each less, a help to the weak and a place Every age has its problems but it and mothers, and brothers and sisters year to recount their deeds and decor- where justice and right will prevail.

WORLD EVENTS IN PICTURES







Party by Champ Clark.

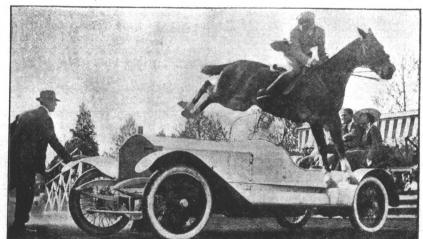




Uncle Joe Cannon Given Birthday Ralph Spotts, Champion Trap-shooter



How Western Farmers Attend Meetings at their Agricultural College.



Horse Making Spectacular Leap at the Washington Horse Show.

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And that applies to men's clothing as much as to agricultural machinery.

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When Writing to Advertisers Please Mention The Michigan Farmer.

Light of Western Stars through hours of unintelligible shame, impotent rage, and futile striving to reason away her defilement.

By ZANE GREY =

Madeline was mute. She heard her heart thundering in her ears.

bled. His action presaged the old instinctive violence.

"No, but you think I kept Bonita up made her fingers closesover it, hold it. in the mountains, that I went secretly you I was-oh, I know what you think! I know now why you discharged me! I never knew till I made you look at me. Now say it! Speak!'

White-hot, blinded, utterly in the fiery grasp of passion, powerless to a thoroughbred!" stem the rush of a word both shameful and revealing and fatal, Madeline meaning. cried: "Yes!"

Stewart had wrenched the word place on the hill beside Monty Price!" easy to leave them, after all!" from her, but he was not subtle enough and not sufficiently versed in the mysfor him, confirming the dishonor in which she held him.

Dropping her arm, he shrank back -a strange action for the sawage and crude man she judged him to be.

"But that day at Chiricahua you said the greatest thing in the world was faith in human nature. You said the finest men had been those who adios!" had fallen low and had risen. You said you had faith in me. You made me have faith in myself!"

His reproach, without bitterness or scorn, was a lash to her old egotistic self-confidence. She had preached a beautiful principle, but she had failed to live up to it. She understood his rebuke; she wondered and wavered; but the affront to her pride had been too great, the tumult within her breast had been too startlingly fierce. She could not speak.

The moment passed, and with it Stewart's brief, rugged splendor of

"You think I'm vile," he said. "You think-that about Bonita! I could make you ashamed-I could tell you-"

His passionate utterance ceased with a snap of his teeth. His lips set in a thin, bitter line. The agitation of his face preceded a convulsive wrestling of his shoulders. All this swift action denoted an inner combat, and it nearly overwhelmed him.

"No! No!" he panted.

Was it his answer to some mighty emptation? Then, like a bent sapling released, he sprang erect.

"I'll be the man-the dog-you think me!" he cried.

He laid hold of her arm with rude, He laid hold of her arm with rude, powerful clutch. One pull drew her sliding half out of the saddle into his arms. She fell with her breast against his, not wholly free of stirrups or horse, and there she hung, utterly pow-

Maddened, writhing, she tore to release herself. All she could accomplish was to twist herself, raise herself high enough to see his face. That almost paralyzed her. Did he mean to kill her?

He wrapped his arms around her and crushed her tighter, closer to him. and crushed her tighter, closer to him. They scarcely seem our own, She felt the pound of his heart; her And more like myths the men who laid own seemed to have frozen. Then he pressed his burning lips to hers. It was a long, terrible kiss. She felt him shake.

"Oh, Stewart! I implore you-let me go!" she whispered.

His white face loomed over hers. She closed her eyes. He rained kisses upon her face, but no more upon her mouth. On her closed eyes, her tair,

For a moment Madeline sat on her horse with shut eyes. She dreaded the Great God! What means the fleeing And in its stead rise Morning Star light.

"I reckon you sure can't say you've never been kissed," Stewart said. His Stewart leaped at her. His powerful voice seemed along way off. "But that hand closed on her arm. She trem- was coming to you, so be game. Here!"

She felt something hard and cold and metallic thrust into her hand. He

The feel of the thing revived her. to meet her, that all the while I served She opened her eyes. Stewart had given her his gun. He stood with his broad breast against her knee, and she looked up to see that old, mocking smile on his face.

"Go ahead! Use my gun on me! Be

Madeline did not yet grasp his

"You can put me down in that quiet

Madeline dropped the gun with a tery of woman's motive, to divine the ing of his words, the memory of Mon-necessary to tell the anxious servants deep significance of her reply. Plain ty, the certainty that she would kill who knocked that she was well and it was that it had only literal meaning Stewart if she held the gun an instant required nothing. A soft step on the longer tortured the self-accusing cry from her.

weapon.

trouble," he said, with another flash of had gone away? It was monstrous and spoke of faith," he burst out. "You the mocking smile. "You're beautiful unfathomable that she regretted him. and sweet and proud, but you're no thoroughbred! Majesty

under the outrage she had suffered.

through hours of unintelligible shame.

The train of brightening stars seemed to mock her with their unattainable, passionless serenity. She had loved, them, and now she imagined she hated them and everything connected with this wild, fateful, and abrupt west.

She would go home!

The great stars, blinking white and cold over the dark crags, looked down upon her and, as always, after she had watched them for a while, they enthralled her.

"Under Western stars!" she mused, thinking a little scornfully of the romantic destiny that they had blazed for her idle sentiment.

Nevertheless, they were beautiful; they were speaking; they were mocking; they drew her.

"Ah!" she sighed. "It will not be so

Madeline closed and darkened the shuddering cry of horror. The mean- window. She struck a light. It was walk outside arrested her. Who was there-Nels, or Nick Steele, or Still-Stewart stooped to pick up the well? Who shared the guardianship over her now that Monty Price was "You might have saved me a lot of dead, and that other-that savage-

The light annoyed her. Complete Hammond, darkness fitted her strange mood. She retired and tried to compose herself to Stewart leaped for the saddle of his sleep; but sleep, for her, was not a horse, and with a flying mount, crash- matter of will. Her cheeks burned so ed through the mesquits to disappear. hotly that she rose to bathe them. In the shaded seclusion of her room, Cold water would not alleviate this with her face buried deep among the burning; and then, despairing of forsoft cushions on her couch, Madeline getfulness, she lay down again with a Hammond lay prostrate and quivering shameful gratitude for the cloak of night. Stewart's kisses were there. The afternoon wore away; twilight scorching her lips, her closed eyes, her fell; night came; and then she rose to swelling neck. They penetrated deepsit by the window, to let the cool wind er and deeper into her blood, into her blow upon her face. She passed heart, into her soul-the terrible fare-

Memorial Day Thoughts

By MRS. M. B. RANDOLPH

I'm thinking tonight of the morrow, The Sweet May morrow that comes Year after year to the farmstead, To village and urban homes, To village and druan nomes, Bringing its dim recollections Of a day so long, long past, That it scarcely seems a shadow On the present's dial cast.

I'm thinking tonight of the morrow When the drums and the banners high,

That'll pass half-thoughtless by;
None but the old, or the aging
Passing the bloom of their prime, Will sigh or mingle their tear drops Over that by-gone time.

When white-robed girls scarce knowing

The meaning of the day, Will pass thru the aisles of the church-Leaving their flowers on the way.

Yet chide them not ye elders, Perchance with scarce a thrill You've read the tale of Brandywine, Or that of Bunker Hill; So long ago those stirring scenes Our nation's corner-stone.

A strangely real, an awful cry!
What means it? Each to other looks
And vainly questions why.
We need not seek historic page,
Our cables hourly tell Of war on land, and war at sea, And the Old World plunged in hell.

Yes, war on land, on waters, too, And war beneath the sea, her cheeks, her neck, he pressed his lips—lips that lost their fire and grew Cold. Then he released her, and, lift-Great God! What means the spectacle

ing and righting her in the saddle, he of millions lying dead, held her arm to keep her from falling. And millions more who writhe in pain Upon the dying bed?

Head, feet, and shoulders bare.
That cross the frozen Russian plains
Bound for—they know not where?
Fire behind and fate before— They know not what may be—Yet on and on they press half crazed With life's hard mystery.

Great God! What mean those trenches foul

Where burrowed laddies bide
Like hunted things, till bursting shell
Shall o'er them harmless ride?
And, oh! what means the breaking hearts

Of mothers in their homes Who sit and wait the long nights thru For word that never comes?

And oh !and oh! the nameless fear
That does its sickening work
In woman's heart, at tho't of him—
The beastly, brutal Turk!—
Great God! what mean the blows that
fall
On thing own charge rece

On thine own chosen race, The dark-eved sons of Abraham, Who find no biding place?

Fair England waits, her blue eyes dim O'er the late conscript call; The matchless bands of Germany Play "The Dead March in Saul;" France, the gay and graceful one
Weeps, now, mid sallies bright,
And the very stars seem reeling
O'er earth's appalling sight.

Say, did the holy men of yore Who left the inspired page, Look down the corridors of time And view the present age? And did they see these clouds that

wrap
The whole round earth in gloom,
And did they say these signs should Just ere the "crash of doom?"

Not mine to solve the prophecies Nor fix the awful day When time shall be effaced, and lost In vast eternity;
'Tis mine to pray this night of sin

To gild the hills of peace.

well kisses of a wild, passionate, hard- harmed an' so grateful to you thathad loved her!

Late in the night Madeline fell asleep. In the morning she was pale Stillwell in amazement. and languid, but in a mental condition that promised composure.

back in a chair, sat Stillwell.

There were signs of trouble in his Madeline's quick, varying emotions animals bore evidence of long, hard travel.

"To whom do they belong?" asked Madeline.

Mains," replied Stillwell with a cough that betrayed embarrassment.

wonderingly.

'Wal, I said so."

Stillwell was indeed not himself.

"Is Danny Mains here?" she asked in sudden curiosity.

little black-eyed hussy. Why, he hardly placed a chair for Madeline. Miss half hour now.

ings had been ruffled. Madeline's cur- lookin' at you." iosity changed to blank astonishment, His manner subtly changed. Possifor clear conception in her mind.

hallway. Then a young man ran out the weary horse and burro. upon the porch. He resembled a cowboy in his lithe build, in his garb and his hair was light and curly. He was horse. a handsome, frank-faced boy.

something she wished to forget.

when he straightened up he was rest an' sleep!"

the last throwed his guns-poor Mon- low veins and bars and streaks. Monty Price was grand! He never "Lord! Danny, if you hevn't been knew, any more than you or Bill here, an' gone an' struck it rich!"
or the boys, what Bonita was to me."
Danny regarded Stillwell with lofty
Stillwell's kind and heavy hand fell condension.

upon the cowboy's shoulder.

"An' you're taking some

a smile. He dashed the tears from his tors an' gold-mines fer thirty years, an' pleasant, boyish, happy ring.

"Bill, old pal, stand bridle-down a to Madeline. "I beg your pardon, Miss a payroll," said Danny. "Reckon you Hammond, for seemin' rudeness. I'm have been some disheartened remem-

ened man. Despite his baseness he why, sure, it's a wonder I didn't kiss you outright!"

"Bonita's your wife!" ejaculated

"Sure! We've been married for months!" replied Danny happily. It was considerably after her regular "Gene Stewart did it-good old Gene! hour that she went to the office. The I guess maybe I haven't come to pay door was open, and just outside, tipped him up for all he's done for me! You see, I've been in love with Bonita for "'Mawnin', Miss Majesty," he said two years; an' Gene—you know, Bill, as he rose to greet her with his usual what a way Gene has with girls—he was tryin 'to get Bonita to have me."

lined face. Madeline shrank inwardly, were swallowed up in boundless gladfearing his old lamentations about ness. Something dark, deep, heavy, Stewart. Then she saw a dusty, rag- and somber was flooded from her ged pony in the yard and a little burro heart. She had a sudden rich sense of drooping under a heavy pack. Both gratitude toward this smiling, cleanfaced cowboy, whose blue eyes flashed through tears.

"Danny Mains," she said, "if you are as glad as your news has made me-if "Them critters? Why, to Danny you really think I merit such a reward -you may kiss me outright."

With a bashful wonder, but with "Danny Mains?" echoed Madeline right hearty will, Danny Mains availed himself of this gracious privilege. Stillwell chuckled. The signs of his phenomenal smile were manifest.

"Bill, straddle a chair," said Danny. "You've gone back a heap these last The old cattleman nodded gloomily, few months, frettin' over your bad "Yep, he's hyar all right. Sloped in boys, Danny an' Gene. You'll need from the hills, an' he hollered to see support under you while I'm throwin' Bonita. He's locoed, too, about that my yarn. Story of my life, Bill." He said 'Howdy, Bill,' before he began to Hammond, beggin' your pardon again, ask about the girl; so I took him in to I want you to listen, too. You've the see her. He's been there more'n a face an' eyes of a woman who loves to hear of other people's happiness. Be-Evidently Stillwell's sensitive feel- sides, somehow it's easy for me to talk

which left her with a thrilling premo- bly it took on a little swagger; cernition. She caught her breath. A tainly he lost the dignity that he had thousand thoughts seemed thronging shown under stress of feeling; he was now more like a cowboy about to boast Rapid footsteps, with an accompani- or affect some stunning maneuver. ment of clinking spurs, sounded in the Walking off the porch, he stood before

"Played out!" he exclaimed.

Then, with the swift violence so action, in the way he wore his gun; characteristic of men of his class, he but his face, instead of being red, had slipped the pack from the burro and a clear brown tan. His eyes were blue; threw saddle and bridle from the

"There! See 'em! Take a look at At sight of Madeline he slammed the last dog-gone weight you ever down his sombrero and, leaping at her, packed! You've been some faithful to he possessed himself of her hands. Danny Mains, an' Danny Mains pays! His swift violence not only alarmed Never a saddle again, or a stray or a her, but painfully reminded her of halter or a hobble, so long as you live! So long as you live nothin' but grass This cowboy bent his head and kiss- an' clover an' cool water in shady ed her hands and wrung them, and places an' dusty swales to roll in an'

Then he untied the pack and, taking "Miss Hammond, she's safe, an' al- a small but heavy sack from it, he most well, an' what I feared most ain't came back upon the porch. Deliberso, thank God," he cried. "Sure I'll ately he emptied the contents of the never be able to pay you for all you've sack at Stillwell's feet. Piece after done for her! She's told me how she piece of rock thumped upon the floor. was dragged down here-how Gene The pieces were sharp, ragged, evitried to save her-how you spoke up dently broken from a ledge; the body for Gene an' her, too-how Monty at of them was white in color, with yel-

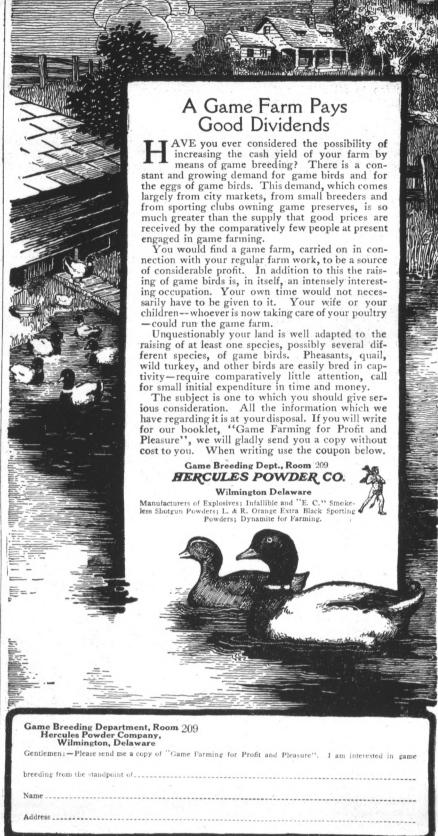
ty! We were good friends, Monty an' Stillwell took up one rock after an-I; but it wasn't friendship for me that other, stared, and stuttered. He put made Monty stand in there. He would the rocks to his lips and dug into them have saved her, anyway. Monty Price with his shaking fingers. Then he lay was the whitest man I ever knew. back in his chair, his head against the There's Nels an' Nick an' Gene-they wall; and as he gaped at Danny the have been some friends to me, but old smile began to transform his face.

"Some rich," he said. "Now Bill, "Danny, what's all this queer gab?" what've we got here, say, offhand?" "Oh, Lord, Danny! I'm afraid to liberty with Miss Hammond, who nev- say! Nothin' under ten thousand dol-

er seen you before. Come, ease up lars a ton! I never seen sich free now, an' talk sense!"

gold. Look Miss Majesty jest look at The cowboy's frank face broke into the gold! I've lived among prospeceyes and laughed. His laugh had a I never seen the beat of this. Tell us how you found it, Danny!"

"Bill, it was some long time ago, minute, will you?" Then he bowed when you sent me in to El Cajon with Hammond, for seemin rudeness. I'm have been some disheartened remember of the post of the





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FIRE! FIRE! FIRE!

We had an opportunity of buying, at much less cost than any of our readers could, a lot of fire extinguishers, and of the best sort—the "Fire Chief" Dry Chemical Powder kind-supposed to be the best for quick work. As a to be the best for quick work. As a rule, the time to put a fire out is as near the start as possible. Farmers have little fire protection; we figured on that when we bought a lot of the "Fire Chief" Extinguishers at a low wholesale price. We bought these with our subscribers in mind and will give them to our readers at cost. Full directions go with each one. They are instantaneous, sure. The \$2 size we will offer to our subscribers at \$1, or six for \$5, while they last.

The Michigan Farmer, Detroit, Michigan

against some of Don Carlos's vaque- his eyes as he thrust his right hand of my church." ros. They pretended to be friendly, as toward Stillwell. they always done; but they laid me out with a crack on the head. When I came to I was lavin' in the road an' Bonita was fussin' over me. The monsoon I come to all right, an' Bonita got him. I wasn't goin' to let her ride away alone when she told me she was in trouble. Besides, I figured myself Peloncillos. Bonita had Gene's horse an' she was to meet him up on the trail. We got to the mountains all right an' nearly starved for a few days trouble himself an' couldn't fetch much with him.

cabin. I come down that day Gene sent his horse to you. Never saw Gene draw up a pardnership. Go find him, day. so broken-hearted! Well, after he Bill. I want to show him this gold, to sloped for the border Bonita an' I were hard put to it to keep alive; but we got along, an' I think it was then she began to care a little for me. I killed bounties for the skins an' bought grub an' supplies we needed. Once I went into El Cajon an' run plumb into Gene. He was back from the revolution an' cuttin' up pretty bad; but I got away from him after doin' all I could to drag him out of town. A long time after he'd changed wonderful, an' was fine an' dandy. It was then he began to pester the life out of me to make me marry Bonita. I was happy, so was she, an' I was some scared of spoilin' it. Bonita had been a little flirt, an' I was afraid she'd get shy of a halter; so I bucked against Gene. But I was all locoed, as it turned out. Gene would come up occasionally, packin' supplies for us, an' always he'd get after me to do the right thing by Bonita. Gene's dog-gone hard to buck against: finally he fetched up Padre Marcos an' we was married."

Danny paused in his narrative, breathing hard as if the memory of the wedding had stirred strong and thrilling feeling in him. Stillwell's smile was rapturous. Madeline leaned toward Danny with her eyes shining.

"Miss Hammond, an' you, Bill Stillwell—listen, for this is a strange thing I've got to tell you. The afternoon Bonita an' I were married, when Gene an' the padre had gone, I was happy one minute an' low-hearted the next. I was miserable because I had a bad name; I couldn't go among my old friends without money to pay back what I'd lost. I couldn't buy even a office. decent dress for my pretty wife. Bonita heard me sayin' so, an' she was some mysterious. She told me the story of what she called the lost mine anyone hear.' of the padres an' she kissed me an' made joyful over me in the strangest way. I knew marriage went to wom- door and then the other. en's heads, an' I thought even Bonita had a spell.

"Well, she left me for a little; an' ed to show me where she always sat an' waited and watched for me when I was away. She led me round under the Crags to a long slope. It was some pretty there-clear an' open, with a been Senor Stewart's wife." long sweep, an' the desert yawnin' An' there, under Crags, was gold-gold everywhere- only to hear. surface gold-gold deep in the cracks. Pat Hawe an' his guerrillas. Hawe was made me speak the service. He made the man has the same stability, the rat Hawe an' nis guerrillas. Hawe was made me speak the service. He made the man has the same stability, the so set on doin' Gene dirt that he mixed you speak the Spanish 'yes.' And I—same strength, the same elements and brave, which I am in the habit of attributing who died our well beloved land to you some staggerin' news about that ful cowboys, fearing worse than dis- to the physical life around me in this outfit; but just now my story's all grace to one so beautiful and as good wild and rugged desert. If you can

Well, that day, ridin' in, I run up his chair. Blue lightning gleamed from wife; so I married you in the service spell. It was not only that this soft-

"Bill, old pal, put her there—give me rising. your hand!" he said. "You were al- "He how you refused to think I was crookmine-you an' Gene! If there's any she likes I'll buy it. If I see anythin' him, to tell him. Go fetch him, an' show him how Danny Mains pays! An' the only bitter drop in my cup today is that I can't ever pay Monty Price!"

the border.

a strange yet familiar figure approach. his wife for the little time life left him are inscrutable. What is the meaning ing. It was Padre Marcos.

Madeline felt herself tremblng. What did the padre's presence mean on this day? He had always seemed to avoid meeting her. He had been exceedingly grateful for all she had done for his people, his church, and himself; but he had never thanked her in person. Perhaps he had come for that purpose now; but Madeline did not believe so.

Mention of Padre Marcos, or sight of him, had always occasioned Madeline a little indefinable shock; and now, as he stepped to the porch, a shrunken, stooped, and sad-faced man, she was startled.

The padre bowed low to her. His voice was low-toned and grave.

"Senora, will you grant me audience?" he asked in perfect English.

asked. "It is a matter of great moment which you might not care to have

head. The padre gently closed one them. He may be hard and violent,

secret-my own sinfulness in keeping fighting, his contempt of death, his init—and to implore your pardon. Do difference to spilling blood, I was as- Again the spring—fair blossom time is when she came back she said she want- you remember that night when Senor tounded to find a man of gentleness Stewart dragged me before you in the and kindness. I have never heard more waiting-room at El Cajon?"

"Yes," replied Madeline.

seemed to feel

"You are Senor Stewart's wife. I loved and given, to bring about their At that I was worse than locoed. I have kept the secret under fear of marriage, to succor them in their need went gold-crazy. I worked like seven- death; but I could keep it no longer, and loneliness. It was natural for him teen burros. Bill, I dug a carload of Senor Stewart may kill me now. Ah, to speak of them. He seldom speaks gold-bearin' quarts an' never got to senora, it is very strange to you! You needlessly. It would have been naturfor me an' brought me water. That knew not what happened. Senor Stew- fense, if peril menaced them. Senora, was how she come to get caught by art threatened me. He forced you. He I want you to understand that to me as you, I could not do less than marry see that, you will see he is wonderful." And grateful hands thru all the years Danny Mains got up and kicked back you truly. At least you should be his Madeline listened as one under a

senora, let me speak a word for Senor glory to her. ey was gone; so was my horse. Pretty ed. Gene told me. Well, Danny Mains Stewart. He did not know what he spotted my horse off on the grass. She an' Danny Mains pays! I want two he came to me and made me swear by fession to you I have only one duty-

Madeline's lips tremblingly formed beloved people was no greater than the be adequate to express what is in Sencougars an' went down to Rodeo to get to tell Danny Mains and Stillwell that change in Senor Stewart. Senora, I or Stewart's soul. Think, my gracious the cowboy they wanted so much had feared you would go away one day - and noble lady, think what is his paraleft the ranch; but the flame of fine go back to your eastern home ignorant dise. To love you above the spirit of loyalty that burned in Danny's eyes, of the truth. The time came when I the flesh; to know you are his wife; the happiness that made the old cattle- confessed to Stewart. I said that I his, never to be another's except by his man's face at once amazing and beau- must also tell you. I have never seen sacrifice; to watch you with a secret tiful, stiffened her lips. She watched so supreme a joy. He threatened no glory of joy and pride; to stand, while the huge Stillwell and the little cow- more to kill me. That strong, cruel he might, detween you and evil; to that Gene trailed up to the Crags an', boy, both talking wildly, as they walk- vaquero begged me not to tell the find his happiness in service; to wait, found us. Gene had stopped drinkin'; ed off arm in arm to find Stewart. She secret-never to reveal it. He confess- with never a dream of telling you, for imagined something of what Danny's ed his love for you-a love, senora, the hour to come when, to leave you disappointment would be, of the elder something like the desert storm. He free, he must go out to his death. man's consternation and grief, when swore by all that was once sacred to they learned that Stewart had left for him, and by my cross and my church, lime, it is terrible, it is appalling. It that he would be a good man-that he has brought me to you with my confes-At this juncture she looked up to see would be worthy to have you secretly sion. I repeat, senora, the ways of God to worship at your shrine. You need never know. As long as you did not leave the west, or seem to desire mar-vile, brutal, unheeding, unquickened; riage, you need never know. But if now he is a man-I have not seen his you left, if you meant to marry, then like! So I beseech you in my humble he would go quietly and silently to his death. Senora, he meant it. Death has no terrors for such a man. I know that he would have welcomed death, terious dispensation of God. Love, because it would have served you. So that mighty and blessed and unknown I held my tongue, half pitying him, half fearing him, and praying for some God-

> "Certainly, Padre Marcos, replied ance with mine. He taught me many you yourself have created!" Madeline, and she led him into her things. He made me doubt much that but he is just and true. Remembering "Senora, I have come to dislose a his vice of drunkenness, his love of beautiful words than those in which But still our hearts are sad, soft falls he persuaded Bonita to accept Senor "Senora, since that night you have Mains, to forget her old lovers, and As we pay tribute to our soldier dead. henceforth to be faithful and happy. Madeline became as motionless as For Senor Stewart it was natural to be Our hearts loval to his friend to have a fine sense of the honor due to a woman who had All bitterness and strife are washed

> voiced, eloquent priest knew how to "Good Heavens!" cried Madeline, move the heart, to stir the soul; but his defense, his praise of Stewart, if "Hear me! I implore you, senora, they had been couched in the crude ways my friend. It stuck in my craw hear me out! Do not leave me! Ah, speech of cowboys, would have been a

"Senora, I pray you, do not misunowes you an' Gene Stewart a good deal was doing that night. In the morning derstand my mission. Beyond my conpardners to help me work my gold- my cross that I would not reveal the to tell you of the man whose wife you disgrace he had put upon you. I did are. The ways of God are inscrutable. ranch hereabouts that takes your fancy he would kill me. Life is nothing to I am only a humble instrument. You disgraced; so we hit the trail for the I'll buy it! If Miss Hammond ever the American vaquero, senora. I prom- are a noble woman, and Senor Stewart gets tired of her range an' stock an' ised to respect his command; but I did is a man of desert iron forged anew home I'll buy them for Gene. If there's not tell him then that you were his in the crucible of love. Quien sabe? any railroad or town round here that wife. He did not dream I had truly Senor Stewart swore he would kill me married you. He went to fight for the if I betrayed him; but he will not lift till Gene found us. He had got in myself that I like I'll buy it! Go out, freedom of my country—senora, he is his hand against me. For the man find Gene for me. I'm achin' to see one splendid soldier-and I brooded bears you a very great and pure love, over the sin of my secret. If he were and it has changed him. I no longer "We made for the Crags an' built a right here in this house, with my wife killed, I need never tell you; but if he fear his threat, but I spoke of his love, an' Miss Hammond as witnesses, we'll lived I knew that I must do so some of his fool's paradise. I have watched his dark face turned to the sun setting "It was strange indeed that Senor over the desert. I have watched him Stewart and Padre Marcos should both lift it to the light of the stars. Senora, come to this ranch together. The great I am a priest, and I can read the soul, change your goodness wrought in my but no poor words of mine would ever

"Senora, that is beautiful, it is subof your influence upon Senor Stewart? Once he was merely an animal-low. office as priest, as a lover of mankind, before you send Stewart away to seek death, to be sure that there is no mysthing, might be at work. Senora, I have heard that somewhere, in the rich eastern cities, you are a very great "Senora, it was a fool's paradise that lady. I know you are good and noble. Stewart lived in. I saw him often. That is all I want to know. To me you When he took me up into the moun- are only a woman, just as Senor Stewtains to have me marry that wayward art is only a man. So I pray you, sen-Bonita and her lover I learned to know ora, before you let Stewart give you the real Stewart. I came to have re-freedom at such cost, be sure you do spect for a man whose ideas about na- not want his love, lest you cast away ture and life and God were at vari- something sweet and ennobling which

Blinded, like a wild creature, Madeheretofore I have thought wisdom and line Hammond ran to her room. She "May I beg to close the doors?" he truth. He professed to have no relig- felt as if a stroke of lightning had ion; but the man is a worshiper of God shattered the shadowy substance of in all material things. He is a part of the dream that she had made of real the wind and sun and desert and moun- life. The wonder of Danny Main's Wonderingly Madeline inclined her tain that have made him. He is like story, the strange regret with which

MEMORIAL DAY.

ANNA M. STEARNS.

The earth responds to nature's call of

we bring our wealth of bloom today, enshrine alike both Blue and (

away As we lay blossoms o'er each hero's bed.

Again we praise our Father God above. For freedom's heritage, and may we prove

live rock. Bonita watched the trails were so frightened that night-you al for him to give his life in their de- More worthy of such blessings and such love. And of such countrymen as have been

ours.

save, Long may Old Glory o'er each low

bring flowers.

she had realized her injustice to Stew- mary disruption of her life in the east. art, the astounding secret revealed by She merited the lesson. Padre Marcos-all these things were sciousness of her own love.

ling hands she locked the doors; drew on the porch; pushed chairs aside so innate weakness for the elemental! that she could pace the length of her broken.

With quivering lips she whispered it. at the last, noble. Then she spoke aloud:

him! I love him!"

She repeated the astounding truth, but she doubted her own identity. "Am I still Madeline Hammond?

What has happened? Who am I?" She stood where the light from the one unclosed window fell upon her By it she had reached a better, higher, image in a mirror.

"Who is this woman?"

She expected to see a familiar, dig- given. nified person-a quiet unruffled figure a tranquil face with dark, proud eyes and calm, proud lips. No, she did not see Madeline Hammond. She did not thing to him-I, Madeline Hammond? see anyone she knew. Were her eyes, like her heart, playing her false? The am the wife of a cowboy. That might figure before her was instinct with be done. Can my love be undone? Ah, pulsating life. The hands she saw do I want anything undone? He is were clasped together and pressed gone-and probably forever. Could he deep into a swelling bosom that heav- have meant-I will not, dare not, think ed with each panting breath. The face of that. He will come back. No, he she saw-white, rapt, strangely glow- never will come back. Oh, what shall ing, with parted quivering lips, with I do?" great, staring, tragic eyes-this could not be Madeline Hammond's face!

Yet, as she looked, she knew that no fancy could really deceive her-that she was only Madeline Hammond come at last to the end of brooding dreams. She swiftly realized the change in her, divined it as inevitable, and straightway fell back again into that mood of bewildering amaze.

Calmness was unattainable: tranquility was impossible. She could not go back to count the innumerable, imperceptible steps of her undoing. Her old power of reflecting and analyzing seemed to have vanished in a pulsestirring sense of one new emotion. She only felt.

All her pacing strides and quick for her fears to be confirmed. breaths and tingling nerves and muffled, painful heart-beats-all her instinctive outward action that was a to control, at Stewart, at herself. She physical relief-all her involuntary inner strife that was maddening, yet un- manliness, uprightness, and faith. She utterably sweet, seemed to be just one great stunning effect of surprise.

In a nature like hers, where strength of feeling had long been inhibited as a awakening, time for its sway.

But at last the enlightening moment not only the love in her heart, but the thought of the man she loved.

womanimagined she was merely a prey to the supreme duty of life-to be true! emotions that might rush to the overhim, but he was a cowboy, and she claimed her—the west claimed her had unwittingly allowed her love of the he lived or died. tain, of the great free, outdoor west, to love for him. trap her into an infatuation for one. It was as if he were there in person, of its wild characters.

loved, but the west as embodied in that farewell moment, kissing her with him. She would get over her madness. one burning kiss of passion, then with Some such lesson might have been ex- cold, terrible lips of renunciation. pected as punishment for the sum-

This, then, was the conclusive event utterly forgotten in the sudden con- in that long struggle to decide her future. She would go home where she She fled as if pursued. With tremb. belonged, where there were no stalwart, violent, fire-tempered cowboys to the blinds of the windows that opened fascinate a young woman who had an

Suddenly as she raged, something in room. She was alone now, and she her took arms against the indictment of walked with soft hurried, uneven Gene Stewart. She saw him drunk, steps. She could be herself here; she violent, brutal; she saw him abandonneeded no mask; the long-established ed, base, lost; but out of the picture habit of serenity hiding the truth from she had made there grew one of a difthe world and from herself could be ferent man-weak, sick, changed by shock, growing strong, strangely alter-She paused in her swift pacing to ed in spirit, silent, lonely like an eagle, and fro. She liberated the thought secretive, tireless, faithful, soft as a that knocked at the gates of her mind. woman, hard as iron to endure, and,

She softened. In a flash her complex "I will say it—hear it. I—I—love mood changed to one wherein she thought of the truth, the beauty, the wonder of Stewart's uplifting. Humbly she trusted that she had helped him to climb. That influence had been the best she had ever exerted. It had wrought magic in her own character. nobler plane of trust in man. She had received infinitely more than she had

"Oh, it is terrible!" she cried. "I am his wife-his wife! And I can never be anything to him. Could I be any-But I am his wife, and I love him! I

For Madeline Hammond the days following that storm of feeling were leaden-footed, endless, hopeless, a long succession of weary hours, sleepless hours, pasionate hours, all haunted by a fear slowly growing into torturea fear that Stewart had crossed the border to invite the bullet which would give her freedom.

And finally the day came when she knew this to be the truth. The spiritual tidings reached her, not subtly as so many divinations had come, but in a clear, vital flash of certainty.

Then indeed she suffered. She burned inwardly, and the nature of that deep fire showed through her eyes. She kept to herself, waiting, waiting,

At times she broke out in wrath-at the circumstances that she had failed had been blind to a man's honesty, had been dead to love, to nobility that she had herself created. Padre Marcos's grave, wise words returned to haunt her. She fought her bitterness, matter of training, such a transforma- scorned her intelligence, hated her tion as the sudden consciousness of pride, and, weakening, gave up more passionate love required time for its and more to a yearning, almost hopeless hope.

She had shunned the light of the came; and Madeline Hammond faced stars, as she had violently dismissed every haunting memory of Stewart's kisses. But one night she went delib-When she let herself think of Gene erately to her window. There they Stewart-think that the impossible shone. Her stars! Bright, beautiful, had happened and that she loved him white, serene, passionless as always, -then she became a woman in the but strangely closer, warmer, speaking multiple incomprehensible ways where. a kinder language, helpful as they had ever been, teaching her now th hood. For a moment, or an hour, she gret was futile, revealing to her the

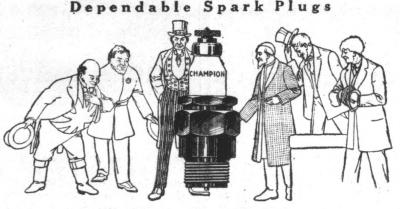
Those shining stars made her yield. whelming of one of her sex. She loved She whispered to them that they had could never be anything to him. She Stewart claimed her forever, whether

range and the desert and the moun- She gave herself up wholly to her

dark-faced, fire-eyed, violent in his ac-It was not wholly Stewart whom she tion, crushing her to his breast in

(Continued next week).





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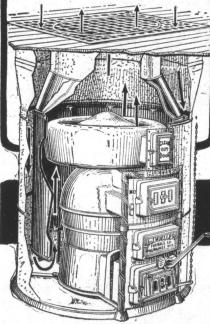
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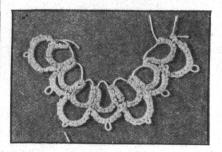
Established 1883. Reed City, Mich



The Domestic Crucible—27

All's Well that Ends Well

OHN MARTIN awoke on Saturday saucily in the skillet. Breakfast would cushions. it. he thought, with his awakening the bacon with a meditative air. Now yawn-then bounded out of bed with a was there enough for breakfast? John chuckle of delight. Grace was coming and the hired man both had good aphome, of course. Her week in the city petites, and she felt hungry herself. was up that day. Also his week at The pieces which had seemed large home with her mother as housekeeper when she put them over to cook had and things would once more assume shrunken alarmingly; they their normal way.

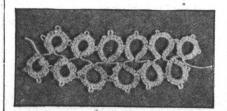


Edging No. 1.

time was so near up, John magnanimously admitted that Mrs. Martin meant well, though when she had carried in a half cord of wood because he washing strictly against Grace's orwith anything but malicious inten- the proper thing for faints, he rememtions. He was sure then that she wanted to make out that Grace was an overworked martyr, but now he told himself she was Grace's mother and getting old and childish and one must make allowance for her foibles. He whistled gaily as he dressed and sallied forth for the day, at peace with the world and ready to be friends with everybody.

Mrs. Martin looked worn and tired as she bustled about the kitchen making gems, slicing bacon, and patting potato balls into delicious looking little cakes. It had been a hard week for her. Not that the work was more than she did at home, but it was one thing to please an almost new son-inlaw, and another to cook for a brokento-double-harness husband. Somehow she never could just tell whether John was pleased or displeased, and the nervous strain had tired her more than the washing and wood-carrying. She brightened visibly when John said gaily:

"Just four hours more and Gracie will be home," and actually sang a few



Edging No. 2.

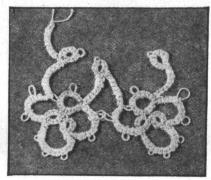
ter all, and Grace would come home to find everything running just as she left it.

The gems were soon in the oven, sending forth an appetizing odor, the potato balls browning just to a turn the day. on the range and the bacon sizzling

morning with a distinct feeling be ready now on the minute and John that something unusually pleasant could get started in good season for ing a cup of steaming coffee and placwas to happen that day. What was the train and Grace. She peered at ing it before her, "and then eat some would scarcely cover the bottom of the plat-For home had not been exactly home ter, to say nothing about being piled to John during the seven days Grace up a little. She decided to cut some was away enjoying her first vacation more and bustled to the table where since her marriage. Now that the the side of bacon and huge meat knife still lay. Just then she spied John and the man leave the barn and start for the house. She must hurry if she was to have breakfast ready the minute they were.

Seizing the knife she made a pass at the bacon, but the meat board was greasy from the previous cutting of meat, the bacon swerved and the murderous knife came down across the back of her four fingers. With a moan of pain she dropped the knife and sank into a chair just as John opened the kitchen door. The sight of blood always unnerved her, and John entered to find his mother-in-law in a faint and blood dripping in a pool by her chair.

Like many another hale and hearty forgot to fill the box, and done a big man he had no more idea what to do in such an emergency than a child of ders, he was far from crediting her six years would have had. Water was



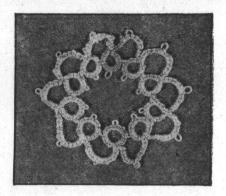
Edging No. 3.

bered to have read, so seizing the water pail, which had just been filled times when utilized as an insertion an Both acts brought immediate results. her faint and the hired man rushed in, closely followed by Aunt Ann Smedley from over the way. Between shivers of cold and gasps of fright Mrs. Martin managed to tell what she had done, bars of "Silver Threads Among the and while John brought mop and buck-Gold," when John left for the barn et and cleaned up the floor, Aunt Ann while she finished up the breakfast. bound up the fingers with absorbent The week was going to end happily af- cotton, wet with peroxide of hydrogen, and finished the breakfast.

Too tired and excited to Mrs. Martin lay down on a couch in the corner and gave way to a few gentle tears. She had spoiled everything after all! But John was doing some thinking. He had awakened to a happy day, and he was bound to have it d s, 1 p, 4 d s, 1 p, 4 d s. Turn the a selfish chump to let an accident mar alternating the rings from side to side.

easy chair from the living-room out to Mrs. Martin's plate, piled it with cushions, and then lifting that astonished small person in his strong arms he deposited her in the midst of the heap of

"Now drink this," he ordered, pour-



Medallion No. 4.

of these bully gems you made. I can recommend the potato balls, too, but owing to painful recollections I'll not mention the bacon. Grace will be here in three hours, and if you haven't had any breakfast you won't be able to give her a fitting welcome. That coffee will steady your nerves and you need a square meal after the way you've waited on us this week."

Mrs. Martin meekly obeyed, and when John left an hour later to meet Grace she was again trotting about the kitchen ,trying with one hand to clear up the table. John caught, "Darling I Am Growing Old," chanted in a quavering voice as he drove by the door and grinned with satisfaction.

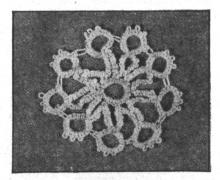
"How did things go?" Grace demanded anxiously as she stepped from the train, even before she returned John's hearty smack.

"Bully," John declared heartily. "Your mother is sure a proper cook, not to mention being a model motherin-law." DEBORAH.

TATTING DESIGNS.

BY MAE Y. MAHAFFY.

One of the simplest of tatting designs is shown in illustration No. 1, this form being used for insertion or edging, as the case may be. Somewith icy water, he threw its entire edging is formed of one row of rings contents over Mrs. Martin and then only. This is one of the easiest patbegan wildly ringing the dinner bell, terns for a beginner to follow. A ring (r), is made, consisting of 4 double Mrs. Martin promptly spluttered out of knots or stitches (d s), 1 picot (p), 4



Medallion No. 5.

end so. Though his first feeling had work and leave one-fourth of an inch been one of annoyance when he found of thread, and make a second ring. out Mrs. Martin was not badly hurt, he Turn the work again, leave one-fourth put that aside and determined that of an inch of thread, and make a third Grace should find everybody happy ring beside the first, connecting after when she arrived. Mrs. Martín didn't the 4th d s with the 3rd p of 1st r. deliberately cut her hand and he was Continue thus, turning the work and

A quaint little edging, No. 2, is made He arose from the table, pulled the with two shuttles, or the ball of thread

and one shuttle will answer. The first row requires only one shuttle. Make 4 d s, 1 p, 8 d s, 1 p, 4 d s, and draw up to form a three-quarter ring. Make 4 d s, and draw thread through 2nd p of preceding r, 8 d s, 1 p, 4 d s, and draw up, as before, proceeding thus until a sufficient length is made. Now fasten the other shuttle or the ball of thread to the 1st p, using the 1st shuttle in the right hand. Make 9 d s, 1 p, 9 d s, connect with p of preceding row, 5 d s, 1 p, 5 d s, and connect with next p of former row, and repeat for entire length of edging.

No. 3 shows a more elaborate edging, and also necessitates the use of ball and shuttle or two shuttles. A ring is made of 4 d s, 1 p, 4 d s, with one shuttle; then a chain (ch), of 9 d s, with both. A larger ring follows with 1st shuttle only, and consists of 4 d s, 1 long picot, (1 p), 4 d s, 1 I p, 4 d s, 1 l p, 4 d s. Close the r and ch again 4 d s, 1 l p, 4 d s, 1 p, 4 d s. A small r of 4 d s, 1 p, join to the 3rd p of large r, and 4 d s, follows, after which a ch of 5 d s, 1 p, 3 d s, 1 p, 3 d s, 1 p, 5 d s, is made. Another small r caught to the 3rd p of the large one is placed, and then a ch of 4 d s, 1 p, 4 d s, 1 l p, 4 d s, connected with 2nd p of large r. Ch 9 d s, and repeat from beginning, connecting 1 p in adjoining side chs of scallops.

Medallion No. 4 consists of 10 rings of 5 d s, 1 p, 4 d s, 1 p, 4 d s, 1 p, 5 d s each, side picots connecting. Between these rings are chains of 6 d s, 1 p, 6 d s. Medallions of this character may have a web-like center made with a needle and thread, such as is used in Battenburg and other laces. They are also pretty with net centers.

The remaining medallion has for its center a ring consisting of 8 p, with 2 d s between, the joining place serving as the 9th p. Ch 6 d s. Now r 4 d s, 11 p, 3 d s, 1 p, 2 d s, 1 p, 2 d s, 1 p, 3 d s, 1 l p, 4 d s. Ch 6, and join to 1st p of central r. Ch 6 again, and make another ring, connecting long side picots, etc.

Medallions like the ones shown may be used singly or be joined to form insertion, edging or all-overs. When needed smaller medallions or simple rings may be utilized for filling in for the all-over effects so popular now for yokes, collars, and the like.

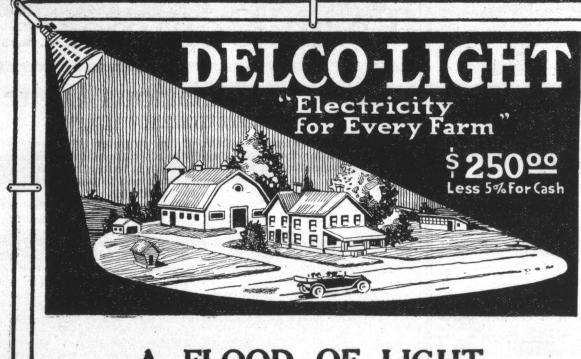
BEET SUGAR VS. CANE SUGAR.

The view is frequently held by housewives that it is impossible to make jelly with beet sugar, and that cane sugar is necessary for this purpose. The general extent of this idea is indicated by the action of at least one of the large mail order houses of the country in appealing to the popular prejudice, by advertising that it sells only cane sugar.

That such a view is incorrect is evident from the fact that beet sugar and cane sugar are the same identical substance, one being extracted from the sugar beet, the other from sugar cane. Any difference between beet and cane sugars would thus, of necessity, be due to the different character of impurities contaminating the two sources. However, properly refined, granulated sugar, whether derived from beets or cane is one of the purest substances sold on the market, containing, at most, not more than one or two-tenths of one per cent of impurities.

It is of interest to note that practically the whole of the sugar used on the European continent is beet sugar. Certainly Europe has not fallen behind the United States in the quality of the jellies and other confections produced. -Col. Agri. College.

When washing pink or flesh colored garments which have faded, put a little red ink in the rinsing water. If they are badly faded rinse as usual and then rinse a second time in a small dish of water to which a liberal amount of the ink has been added .-Mrs. E. S. T.



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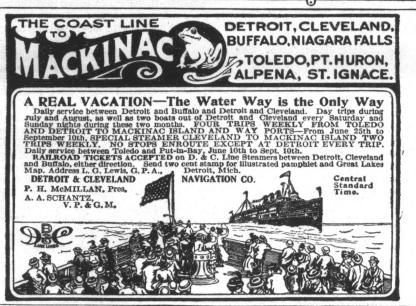
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Grape Associations Unite

By R. H. ELSWORTH of Michigan Office of Markets

did not make fortunes last year, be- be unattainable. cause of a short crop and low prices, and although they expect a fine yield least five benefits will accrue from the will be good, still they feel that the direction of a strong manager. time is nearly at hand when their marmies of large scale marketing are gardless of the shipping point from needed to counterbalance the constant- which they came. The grading and ly increasing cost of production.

There are at the present time five strong marketing organizations, besides several small associations, in the from a marketing standpoint. grape belt, which includes the counties of Van Buren and Berrien and parts of capital now employed in establishing the adjacent counties of Kalamazoo, Cass and Allegan. The five big associations are located at Lawton, Paw Paw and St. Joseph. Two at each of the first named places and one at St. Joseph. The total output of the five last season was approximately a thousand cars of grapes, besides a few hundred carloads of other fruits.

The prices received for grapes last season were fairly uniform for the five associations. This was largely due to the arbiter system, whereby an arbiter collected from each association full information as to the number of cars sold during the preceding day, the prices received, the number of cars "rolled" (started to a market without being sold), the number of cars left over, and suggestions for price for the current day. This information was tabulated and the manager of each association furnished with a copy of a report which was to serve him as a guide for his selling campaign for the next few hours. If during any day it appeared impossible to sell the output at the prices suggested for the different grades the arbiter was consulted by telephone and the selling plans for the day revised.

The arbiter arrangement was successful in preventing the several associations from engaging in "cut-throat" competition. Its very success suggests the general selling agency, which, if tion to elaborate and execute a single selling program.

ing systems have played no small part tion firmly established.

GENERAL sales agency has been of the successes of the enterprise. suggested for the several mar- With a definite selling policy directed keting associations in the Mich- by a single brain it has been possible igan grape belt. The grape growers to obtain results that otherwise would

The grape men point out that at this season and they hope that prices proposed federation when under the

First there will be but one set of keting operations should be on as effi-standards or grades for the entire cient a basis as the peculiarities of the belt. A bunch of Michigan select industry will permit. All the econo- grapes will be of the same quality repacking rules will be uniform throughout the grape district. This alone means much to the producer, viewed

> Second there will be the saving in rival loading stations at the dfferent shipping points. At most of the twenty odd points in the belt there are two or more loading stations, when the business could be far more economically handled from one station.

> Third, there will be the saving in expense now necessary to operate the rival loading stations. This item of saving is a most important one.

> Fourth, there will be a big saving in expense in the matter of telegraph and telephone tolls. The present cost of this service can but cut in half, if not reduced to one-third or one-fourth. Five managers are now sending "wires" to the same wholesalers, when one "wire" to each wholesaler would serve the purpose.

Lastly, there will be uniformity in cost of service with a single management. Last year the members of one of the five associations paid nine per cent of their gross returns for marketing service; the members of another five per cent, and those of another four per cent. It is reasonable to presume that with the economies that a single management would bring that the marketing expense for all the growers could be brought down to the four per cent level.

The difficulties of establishing the general sales agency are those that confronted the grape growers when they organized their first marketing association, namely, a lack of faith in organized will be a central organiza- the success of the proposition and a difference of opinion as to just how the details should be worked out. But The grape growers who have been as they have made a success of co-opwatching big business organize during eration in a limited way the chances the last twenty years have taken note are more than even that they will of the fact that the economies in sell- eventually have the larger organiza-

Cost of Marketing

for the butter-fat of which it is made. is a wider margin than is usually re-Investigations made by the United ceived by the farmer for the land, Philadelphia and Pittsburgh show price for live stock, 45 per cent of the an average price of 32.97 cents to the retail price of chickens, and 371/2 per farmer for the butter-fat in each pound cent of the retail price of milk. of butter, and 43.41 as the average

profit; 0.73 cents was for freight; 0.03 out the year, thus making it unneces-

T costs a little over ten cents per cents for cartage; 1.87 cents was the pound to market butter under nor- wholesaler's margin; 4.92 cents was mal conditions, that is, the butter the retailer's margin. In this survey for which the consumer pays 40 cents it appeared that the farmer received the farmer will receive around 30 cents 75.9 per cent of the retail price. This States Bureau of Labor covering large he has for sale. For example, it was quantities of creamery b tter made in found in Minnesota that the farmer rethe central west and marketed in such ceived 55 per cent of the retail price cities as Chicago, Cincinnati, Cleve- of potatoes, 58 per cent of the retail

Some of the reasons why butter can price paid by the consumer. This be marketed more cheaply than many would leave a total spread of prices other farm products are: First, that between the farmer and the consumer it is less perishable. Butter can be kept almost indefinitely in cold stor-This margin of 10.44 cents was di- age. Second, the shrinkage and waste vided as follows: 2.89 cents went to are small. In the third place, producthe creamery for manufacturing and tion is more or less uniform through-

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sary to store and hold large quantities tion of milk and cream; and whereas, cost of selling.

Where butter is sent directly from country. the farm or creamery to the final conconnected with such sales a considerable amount of gratuitous personal service which if paid for would perhaps bring the margin near to that required However, where superior dairy butter market direct, providing consumers are within a reasonable distance of the dairy farm and deliveries can be promptly made.

This comparatively narrow marketing cost does not argue that the farmer is receiving a wider profit for butter than for other products that cost more to get to the final consumer. Competition in marketing has simply reduced guide to its wholesomeness. There the price to this basis. If it cost more, the consumer would be obliged to pay the additional expense with the probable result that less butter would be stitute an effective, thorough labora-

EGGS BY PARCEL POST.

or two ounces apiece. The weight of trol. In this instance it is assuredly a single dozen of eggs in a carton prop- true that the cheapest method is the erly packed and wrapped for mailing best method. will run from two to three pounds, depending on the nature of the particular container, the size of the eggs, and the packing and wrapping used. If the container be a very light one, and the eggs small, the parcel may fall within the two-pound limit, and the postage therefore within the first and second zones, or 150 mile limit, would be six cents.

But most parcels containing a dozen eggs will exceed two pounds, but will age on them will be seven cents within the first and second zones. A parcel containing two dozen eggs will add perhaps two cents to the postage, though sometimes only one cent, depending on the nature of the container and the packing and wrapping. It is important to observe that the larger the parcel (within the size and weight limits) the cheaper is the postage, as the first pound of every package costs five cents within the first and second zones while each additional pound, up to 50, while each additional pound, up to 50, costs but one cent; so that, while a one-pound parcel would cost five cents postage, a two-pound parcel would cost erage change. only six cents, or three cents a pound. only six cents, or three cents a pound.

A 20-pound parcel would cost 24 cents, or one and one-fifth cents per pound, April 1, 93.3 on May 1, 1915, and 90.6, and a 50-pound parcel would cost 54 May 1 was 88.7, compared with 87.8 on April 1, 93.3 on May 1, 1915, and 90.6, and a 50-pound parcel would cost 54 May 1 was 88.7, compared with 87.8 on May 1, 1915, and 90.6, and a 50-pound parcel would cost 54 May 1 was 88.7. and a 50-pound parcel would cost 54 cents, or but 1 2-25 cents per pound.

NATIONAL DAIRY CONVENTION RESOLUTIONS

opment will require expensive search:

Dairy Interests calls the attention of Congress to this great field of conservation and approve legislation that age on May 1 was 85.2, compared with 87.2 on May 1, 1915, and a ten-year average on May 1 of 85.9. will make possible the necessary experimentation.

Transportation Rates.

Whereas, the railroads of New England are now before the Interstate Commerce Commission asking for an increase in rates upon the transportation.

Of spring planting 56.7 per cent was completed up to May 1, compared with 65.3 per cent on May 1, 1915, and a ten-year average on May 1 of 55.9.

as is the case with fruit and other pro- it has been shown by testimony under ducts marketed during a few weeks of oath that any increase in transportathe year. Then, too, the relation be- tion rates will be reflected in the price tween the intrinsic value of butter and paid to producers for milk and cream; its bulk is such as to reduce the cost and whereas, it has been shown by of freight and cartage. It can also be equally credible testimony that the handled in large quantities with ease, farmers are receiving less for milk and which reduces the cost of handling in cream than it costs to produce it; wholesale quantities. But a large mar- and whereas, the dairy industry of gin is required by the retailer because New England has declined rapidly, as housewives purchase the product in evidenced by the disappearance of small quantities—the pound being the many creameries, large numbers of usual unit, and there is a tendency to cows, and in certain localities the market in half and quarter pounds, abandonment of the dairy business; which will naturally increase the cost and whereas, an increase in transpor of retailing. Packages for distributing tation rates in New England may work to the final consumer also adds to the as an opening wedge in effecting an increase of such throughout the entire

Resolved, that this Conference of sumer, this margin may be reduced Dairy Interests tender its sympathy to somewhat; however, there is usually the farmers of New England in the fight against such increase in transportation rates and respectfully ask that the Interstate Commerce Commission give careful consideration to the through the regular channels of trade. rights and equities of the farmers, to the end that dairying may not be handis made, it is often found profitable to icapped by transportation rates or sys tems impossible for the producer to

THE PASTEURIZATION OF MILK.

(Continued from page 688). The Need of Laboratory Control.

Here again the laboratory study of that milk would be the most effective seems no alternative if we admit that we are interested in the production of the most wholesome milk than to intory inspection of the milk each day, and we repeat that in our judgement the laboratory control, supplementing the inspection as we have described in Average hens' eggs will weigh about our previous issues, is at the same one and one-half pounds to the dozen, time the cheapest method of milk con-

NATIONAL CROP REPORT.

The Crop Reporting Board of the Bureau of Crop Estimates, United States Department of Agriculture, makes the following estimates from reports of its correspondents and agents:

On May 1 the area of winter wheat to be harvested was about 33,020,000 acres, or 11.4 per cent (4,236,000 acres) less than the acreage planted last autumn, and 18.4 per cent (7,433,000 acres) less than the acreage harvested last year via 40,453,000 acres

less than in 1913. The out-turn of the crop will probably be above or below the figures given above according as the change in conditions from May 1 to harvest is above or below the av-

The average condition of meadow (hay) lands on May 1 was 88.4, compared with 89.8 on May 1, 1915, and a ten-year average on May 1 of 88.3.

(Continued from page 687).

pment will require expensive earch;

Resolved, that this Conference of year average on May 1.

Stocks of hay on farms May 1 are estimated at 11,049,000 tons (13.0 per cent of crop), against 8,468,000 tons (12.1 per cent) on May 1, 1915, and 8,109,000 tons (12.1 per cent), the five-

Of spring plowing 70.4 per cent was completed up to May 1, compared with 78.3 per cent on May 1, 1915, and a ten-year average on May 1 of 68.6.



Not Yet "Out of the Woods"

CCASIONALLY I meet someone who has come to believe, on account of the better showing now being made by the Pere Marquette, that its troubles are over and its problems all solved. Nothing could be further from the truth.

Thanks to the loyal support of our men, the co-operation of the public, and improved business conditions, we have made good progress, but much remains to be done.

Some of the Accomplishments:—

We are paying our operating expenses promptly, with a payroll of about \$8,000,000 a year and material and supply purchases of \$4,000,000 more. We are paying our taxes, this year a month ahead of time, and have paid up all arrearages—altogether \$1,500,000 in two years. We are catching up on our defaulted equipment notes and will have paid \$1,500,000 on these by the first of July. Receivership creditors have had 75%, two-thirds of which has been paid out of earnings this year. We are keeping up the property. Our plans this year contemplate more than \$6,000,000 for maintenance of way, maintenance of equipment, and additions and betterments. Good progress, but still there is much to do. We are not yet "out of the woods" by any means.

Some of the Things Yet to Do:-

We must finish paying up the creditors, who more than two years ago furnished materials and supplies to the Receivers, and who have not yet had all of their money. This takes \$600,000. We must finish

paying up the defaulted equipment obligations. This will require \$500,000. Then there are \$725,000 of Receivers' Notes issued more than two years ago to meet payrolls, \$600,000 of Receivers' Certificates issued two years ago to obtain funds for material creditors, \$605,000 of Certificates issued four years ago to pay taxes, and

\$3,500,000 of Certificates issued three years ago to cover equipment notes and improvements, a total of more than \$6,500,000. This makes no allowance for new equipment, an adequate working fund or for the payment of any return to those who have invested their money in the property—even first mortgage bond holders have had no interest for two years and a half.

All this indebtedness has had to be incurred because the Road has not been able to earn enough to pay its way, and the Court has been obliged to borrow money to continue its operation so that the people of Michigan could have service.

Although the better earnings of today may be temporary only, due to the unusual conditions prevailing on account of the war, we are grateful for the larger income while it continues. We are using it to keep the Road in good condition and to help pay our debts. With good earnings from operation and lightened burdens due to a more liberal policy on the part of the State, we can eventually overcome the conditions brought about by low rates and over regulation in the past.

We ask for the continued help of all to bring about ultimate success. The successful policy of the future must be constructive, not destructive. Co-operation between the people of the State and the Pere Marquette will develop the State and build up the Railroad, and the Road can in turn give more and better service than ever The interests of each are mutual. What helps one helps the other. A policy of mutual helpfulness means development and growth. It means adequate rates for service rendered, and adequate service in return for proper compensation.

Talk No. 5

Operating Receiver, Pere Marquette Railroad

Weeds! Weeds! Weeds! (And Why You Have No Cause to Fear The The Isbell Weeder Hoe Pulls Weeds instead of cutting them soil better than any straight blade hee, with less than half the time and labor. 30 inch handle 31.2 postpaid in U.S. Write for description. Sidney M. Isbell, Box 7, Jackson, Mich

Soy Beans Medium yellow variety, raised in Bage 20c extra. Ralph W. Smith, Mosherville, Mich.

When writing to advertisers please mendion the Michigan Farmer.

CRAINS AND SEEDS.

May 23, 1916.
Wheat—While the rumors of peace, slackening of foreign buying, continuation of heavy receipts and large stocks of wheat at primary centers what prices to a lower level, the most internation of many fields that were thought fit only to plow up and will greatly condance the yield throughout the wheat sections. Better prospects in Kansas and Nebraska are of especial interest in this connection owing to the heavy yield of these states; however serious damage has afready been done by the fly, the plant is not first 21½ (29.2%); containing with only a fair 10.00 the most thin and the inimid that prices are not likely to run ligh with only a fair 10.00 the most that prices are not likely to run ligh with only a fair 10.00 the most thin and the inimid that prices are not likely to run ligh with only a fair 10.00 the most the results and the results are not likely to run ligh with only a fair 10.00 the most time and cool weeker as a consumer to the contained of the search of the content of the requirement of the religion of the requirement of the religion of been done by the fly, the plant is not Firsts $21\frac{1}{4}$ @23\[\frac{3}{4}c; ordinary firsts 20 stooling well, the stand is thin and the @20\[\frac{3}{4}c; miscellaneous lots, cases inseed bed poor. But it must be kept in cluded 20@21\[\frac{1}{2}c.

Poultry.—Market is unchanged exhabit with only a fair to good crop, as cept for ducks and geese which are

	110. 4	1VO. 1		
	Red.	White.	May.	
Wednesday	.1.221/2	1.171/2	1.23	
Thursday	1.191/2	1.141/2	1.20	
Friday	.1.18	1.13	1.181/2	
Saturday	.1.171/2	$1.12\frac{1}{2}$	1.18	
Monday	1.141/2	1.09 1/2	1.15	
Tuesday	1.141/2	1.09 1/2	1.15	
Chicago Mar	v whea	t \$1.071/6	. July	

\$1.09; Sept. \$1.09.
Corn.—The decline of wheat gave the corn deal a bearish tone and with improvement in weather conditions prices have dropped from last week's level. The selling by farmers has been quite heavy; however, the visible supply for the United States shows a decrease of 1,479,000 bushels. One year ago the price for No. 3 corn was 75c per bushel. Detroit's quotations for per busnel. De last week were:

	No. 3 Mixed.	No. 3 Yellow
Wednesday	74	761/
Thursday		761/3
Friday		761/
Saturday		761/
Monday		75
Tuesday		75

Chicago.—May corn 73c per bushel; July 71.6c; Sept. 70c.

Oats.—A favorable crop outlook and the downward trend of wheat and the downward trend of wheat and corn values caused holders of oats to let go at lower prices. This crop was gotten in late, however, and this fact militates against the prospects for a big yield. One year ago the price for standard oats was 65c per bushel. Detroit's quotations for last week were: No.3 White

	Standard.	. White.
Wednesday	 . 461/2	45 1/2
Thursday	 . 46	45
Friday	 . 46	45
Saturday	 . 46	45
Monday	 . 45	44
Tuesday	 . 45	44
Chicago May o		T 401/00

May oats 43c; July $40\frac{1}{2}c$; Sept. 38.6c.

Sept. 38.6c.

Rye.—This grain is scarce and firm with cash No. 2 quoted at 97c.

Beans.—The local market is firm and higher. The demand continues steady with offerings scarce. Immediate prompt and May shipments are grounded at \$4 and June \$4.05. Chieseo.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$6.50; seconds \$6.20; straight \$5.80; spring patent \$6.80; rye flour \$6. Feed.—In 100-lb. sacks, jobbing lots are: Bran \$24; standard middlings \$25; fine middlings \$30; cracked corn \$33; corn and oat chop \$29 per ton. Hay.—No. 1 timothy \$22.50@23; standard timothy \$21.50@22; light mixed \$21.50@22; No. 2 timothy \$19@20; No. 1 mixed \$16@16.50; No. 1 clover \$13@14.

Chicago.—Choice timothy hay \$21@

Chicago.—Choice timothy hay \$21@

GRAND RAPIDS.

The egg market is firm, with prices higher, fresh laid being quoted at 21½c. The butter market is off, with No. 1 dairy at 23c. Potatoes are higher, with sales at 90c in this market and er, with sales at 90c in this market and er, with sales at 90c in this market and er, with sales at 90c in this market and er, with sales at 90c in this market and er. Early receipts were on a modern than a sale of the leading at the leadin quotations at 80c at the loading sta-tions. Important markets like Cadil-lac are reporting that potato stocks are pretty well out of farmers' hands now. Grain prices at the mills follow: No. 2 red wheat \$1.11; rye 75c. corn 75c; oats 45c; buckwheat 70c.

LIVE STOCK MARKETS.

Buffalo.

May 22, 1916
(Special Report of Dunning & Stevens,
New York Central Stock Yards,

Buffalo, N. Y.)
Receipts here today: Cattle 132
cars; hogs 90 d. d.; sheep and lambs
50 d. d.; calves 1800 head.

With 132 cars of cattle today, there were around 50 cars of shipping cattle; the demand was strong and bulk of the cattle sold 15c higher. The light butcher cattle and cows were scarce and sold 10@25c higher. We look for a fair run of cattle next Monday, and if they do not have a heavy run in a fair run of cattle near and heavy run in if they do not have a heavy run in

time, with choice grades selling generally at \$10.25, a few selected lots at \$10.30, and one or two small bunches of extreme heavies at \$10.35; pigs generally \$9.75; roughs \$9; stags \$6.50@ 7.50. While the receipts were not overly heavy, demand was very limited and the closing trade was extremely dull, with poor prospects of any improvement for the next few days.

Market was active on sheep and lambs, with prices 15c higher than the close of last week. About all sold and we look for steady to possibly shade higher prices last of the week.

We quote: Clipped lambs \$11.25@ 11.40; heavy lambs \$10.25@10.50; cull to fair \$6@11; yearlings \$9.75@10.25; \$10.30, and one or two small bunches

22; No. 1 do \$19.50@20; No. 2 do \$9@9.25; cull sheep \$4@7; veals, good NATIONAL MEETING OF HOLSTEIN to choice \$12@12.25; common to fair BREEDERS. \$8@11.75; heavy \$6@9.

Current receipts are quoted at 22½c; sharp general advances during the past firsts 22¾c per dozen.

Chicago.—Market is ruling steady at strong demand from all classes of higher prices. Consumptive demand is good and receipts growing lighter. ers of feeders taking a hand. A large Firsts 21¼@23¾c; ordinary firsts 20 share of the beef steers changed @20¾c; miscellaneous lots, cases in cluded 20@21½c.

Poultry.—Market is unchanged except for ducks and geese which are @8.70, while the best class of long-fed lower. Fowls 18@19c, according to quality; broilers 35@40c; ducks 19@ to medium steers sold at \$8.75@9.20, and medium to good offerings brought Chicago.—The market is firm and \$9.25@9.70, with a good class taken at mind that prices are not likely to run high with only a fair to good crop, as the holdover from the yig crop of last the holdover from the price sold at \$8.75@9.20, and medium to good offerings brought \$9.25@9.70, with a good class taken at \$9.75@9.95 and the best yearlings quots are 2c higher. Strike of express drivers of stock. Hens and prices higher. Strike of express drivers of stock. Hens and prices higher. Strike of express drivers of stock. Hens and prices higher. Strike of express drivers as the condition of the crop there is not prices higher. Strike of express drivers as the condition of the crop there is hinders delivery of stock. Hens and prices higher. Strike of express drivers as the condition of the crop there is hinders delivery of stock. Hens and prices higher. Strike of Apples.—Apples are in fair demand and good supply. Quotations as follows: Baldwins \$3@3.50; Steele Reds 100 lbs. for inferior heavy to prime \$4@4.50. At Chicago business is quiet light vealers. The market for stockand good sound apples held firmly. The prices are unchanged. Quotations: No. better prices, with stockers taken at 1 Greenings are quoted at \$2.50@3.25; \$6@8.65, feeders at \$8@8.85, stock and per bbl; Golden Russets \$3@3.25; feeding heifers at \$6.50@8 and stock Baldwins \$3@3.25; Spys \$3.50@4.50; and feeding bulls at \$6.50@7.65. On Ben Davis \$1.75@2.25; Steele Reds \$4@5.

Potatoes.—Potatoes are in light supply and brought higher prices. Carble the highest, the smallest advance belots on track \$1.10@1.15 for white. At ing in strictly prime steers Competi-Potatoes.—Potatoes are in light supply and brought higher prices. Care the highest, the smallest advance belots on track \$1.10@1.15 for white. At ing in strictly prime steers Competicated the market is firm and prices to be the packers and country are higher. Receipts are light. No buyers for steers of the better class of Michigan stock is quoted but others feders forced sharp advances in these sell from \$1@1.15 per bushel. At cattle. Canners and cutters sold at Greenville the ruling price is 90c. cattle. Canners and cutters sold at fancy prices, as did the best yearling bulls, while choice veal calves sold particularly well. Cattle sold largely

ers. Early receipts were on a moderate scale, but the further rise in prices brought in larger supplies on Wednesday, causing a break in values. The day, causing a break in values. The highest price paid for prime hogs during the week was \$10.35 for prime butcher weights, with the best light shipping hogs selling at a discount. Recent receipts of hogs averaged 216 lbs., comparing with 218 lbs. a week earlier, 232 lbs. a year ago and 237 lbs. two years ago. Recent prices for matured hogs look good to the average owner, and the tendency is to let the hogs go to market whenever ready, prohogs go to market whenever ready, provided prices are not down at the time. The market closed the week at \$9.65@ 10.20 for the commonest to the best hogs, with a few prime light singeing hogs bought by Canadians up to \$10.15, while prime hogs bought by Canadians up to \$10.15, while prime house the \$7.50@ 10.25.

Lambs, yearlings, wethers and ewes underwent their customary advances during the past week, with greatly inadequate offerings for meeting the vigand higher. The demand continues steady with offerings scarce. Immediate prompt and May shipments are quoted at \$4, and June \$4.05. Chicago market is firm. Prices are higher. Pea beans, hand-picked \$4.25; red kidneys \$5. At Greenville beans are sold at \$3.50 per bushel.

Clover Seed.—Prime red clover \$8.85 and prime alsike \$9.

Timothy Seed.—Prime timothy \$3.70 per bushel.

If they do not have a heavy run in their customary advances during the past week, with greatly in-adequate offerings for meeting the vigurative and orous local and shipping demand. New high records for fat lots were established for the different kinds of live muttons, with feeders scarce and extended the summer and expect to see them sell higher.

Our hog market was extremely dull and 10@20c lower than Saturday's best time, with choice grades selling gener. ambs advanced 75@90c, wooled lambs 40@55c, best yearlings 50c and fat sheep 25c. Prime Colorado wooled lambs brought \$12.80, or 95c above the record prior to 1916. Spring lambs brought \$12@13.50 per 100 lbs., and clipped offerings closed as follows; Lambs \$6@11.15; yearlings \$9.60@10; heavy yearlings \$9.25@9.50; wethers \$8.75@9.25; ewes \$2.50@9; bucks \$6.75@8.

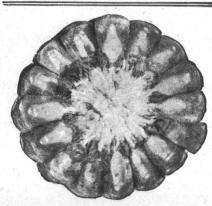
Horses were in fair supply last week and in good demand, with especially lambs, with prices 15c higher than the close of last week. About all sold and we look for steady to possibly shade higher prices last of the week.

We quote: Clipped lambs \$11.25@
11.40; heavy lambs \$10.25@10.50; cull to fair \$6@11; yearlings \$9.75@10.25; bucks \$4.50@7.50; handy ewes \$8.50@
8.75; heavy ewes \$8.25@8.50; wethers

Larger marketings of hogs for June and later months are generally expected, and this may result in considerable breaks in values, but it is remembered that last summer prices held up well, although prices paid then would look very low now. At that period hogs sold at around \$7.30@7.95. Naturally, hog products share fully in the advance in hogs, and pork has sold of late around \$6 a barrel higher than a year ago, with other products showing similar advances. There is a difference of opinion among farmers showing similar advances. There is a difference of opinion among farmers as to whether it is the best policy to feed high-priced corn to hogs and cattle or to let it go to market, and recent marketings of corn have been the largest seen at this season for years. The best authorities believe it will pay better to feed it on the farm however.

best authorities believe it will pay better to feed it on the farm, however, and certainly hogs at ruling prices will show big profits even if fattened on the highest priced feed.

Small numbers of spring lambs are arriving on the Chicago market, most of them grading poorly and selling unsatisfactorily for this reason. Grassy lots are too numerous and these lambs have to go at from \$1.50@2 per 100 lbs. below prices paid cheerfully for choice bunches. Most of the last year lambs are from Colorado, part coming clipped and part with the wool on, with the usual increase in shorn lots as the season advances. lots as the season advances.



Yellow Dent Seed Corn Michigan-Grown 1914 Crop **Tested for Germination**

\$3.00 Per Bushel

Bags Extra at 25c each. Quick Shipment Guaranteed.

YOUNG-RANDOLPH SEED COMPANY, Owosso, Michigan



A well known make of plug selling all over the U.S. for 75c ninus the advertising cost—at 4 for \$1. J. D. Porcelain Petticoat type--all styles. Specify make and year of machine.

WRITE TODAY! COCHRAN & PHILLIPS, 1406 Majestic Bid., Detroit.



THIS IS THE FIRST EDITION.

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. May 18, 1916. Cattle.

\$8 per cwt., and as high as \$9.25. The trade was active from start to finish and there seems to be little prospects of lower prices until the Texans begin to arrive from western markets and then they will not decline much as they are very high everywhere and the consumer can make up his mind that beef will be very expensive food for some time to come. A few country buyers were on hand looking for stockers but they looked too high and steers, \$10.35 for prime outcher hogs few went back for feeding purposes. Good milch cows were very scarce and lambs of medium weight. Other kinds of live stock sell relatively high, and

Henry Ford had 40 good cattle on the market which were bought by Karl Kull of Fort street east, 25 of them at \$9 and 15 at \$8. They were fed at the Ford farm at Dearborn.

The close was steady as follows:

The close was steady as follows: Eest heavy steers \$9@9.25; best handy weight butcher steers \$8.50@8.75; mixed steers and heifers \$7.75@8.50; handy light butchers \$7.50@8; light butchers \$6.50@7.50; best cover \$7.85.

weight butcher steers \$3.50@3.75; the greatest ever known, largely be mixed steers and heifers \$7.75@8.50; handy light butchers \$7.50@3: light butchers \$6.50@7.50; best cows \$7.26\$; cause of the heavy export demands \$4.50@5.50; canners \$3.50@4.25; best heavy bulls \$7.07.50; bologna bulls \$6.25@6.75; stock bulls \$5.06.50; cenmon cows \$6.50.60; cenmon cows \$7.50@8.25; stockers \$6.50@8\$; milkers and springers \$40@80.

Sandel, S., B. & G. sold Sullivan P. Sandel, S., B. & G. sold Sullivan P. Go. 1 cow wgh 1000 at \$6.3 butchers av 683 at \$7.25, 12 do av 912 at \$7.90; to Mason B. Co. 2 bulls av 1070 at \$6.25; to Golden 1 cow wgh 900 at \$6.25, 1 steer wgh 1130 at \$8.85, 6 butchers av 740 at \$7.25, 2 steers av 1100 at \$9, 2 do av 705 at \$6.50, 1 heifer wgh 780 at \$7.75, 1 bull wgh 1860 at \$8.25, 3 cows av 977 at \$7.25, 2 do av 80 at \$7.25, 4 butchers av 875 at \$7, to Newton B. Co. 12 steers av 900 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.2 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50, 2 cows av 930 at \$7.1 do av 950 at \$8.50,

Receipts 1479. The veal calf trade was active from start to finish and prices were fully 50c higher on good grades. Shippers should go slow on the heavy grades and bob calves, as the meat inspector watches them close and will not permit them to be sold for food. The little ones must go with the mother or be condemned. Best \$11.012: medium and heavy \$7.010.

the mother or be condemned. Best \$11@12; medium and heavy \$7@10.
Erwin & S. sold Mich. B. Co. 10 av 156 at \$12, 3 av 130 at \$9, 6 av 125 at \$11; to Burnstein 2 av 170 at \$12, 6 av 150 at \$11.50, 3 av 135 at \$9, 11 av 150 at \$11.50; to Thompson Bros. 12 av 160 at \$11.75, 5 av 120 at \$9, 4 av 145 at

Sheep and Lambs.

8 sheep av 145 at \$7.25; to Mich. B. Co. 210 sheep av 98 at \$8, 12 do av 90 at \$7, 97 lambs av 75 at \$10.50, 35 do av 70 at \$10.50, 76 do av 55 at \$8.75; to Newton B. Co. 21 lambs av 85 at \$10.50, 7 do av 60 at \$8; to Sullivan P. Co. 24 do av 45 at \$6, 35 sheep av 50 at \$7.50, 15 do av 65 at \$5.50; to Barlage 88 lambs av 65 at \$9.75; to Nagle P. Co. 27 do av 80 at \$10, 14 sheep av 110 at \$7; to Parker, W. & Co. 41 do av 115 at \$7.50, 128 lambs av 75 at \$10.25 \$10.25.

Haley & M. sold Parker, W. & Co. 86 lambs av 70 at \$10.25; to Mich. B. Co. 23 lambs av 60 at \$6.

Hogs.

Receipts 11,603. The hog market was a trifle more active than on Wednesday. Yorkers and mixed 5c higher and selling at \$9.80@9.85; pigs steady at \$9@9.25.

LIVE STOCK NEWS.

"Ninety per cent of the Montana 1916 lamb crop has already been conracted by speculators and feeders," said O. B. Parham, who reached the Chicago market on a recent day from his headquarters in Billings, Montana. "The lamb crop is about a normal one in that state," he continued. "There were fewer ewes bred, because they were not there to breed, but this was offset in a large measure at least by excellent lambing results as figured on percentage to ewe basis. The lambs have been contracted for fall delivery at -7@7.50 per 100 lbs. More probably were sold at the former than the latter forms. Receipts 1877. The run of cattle at have been contracted for fall delivery the local yards was considerably less at -7.07.50 per 100 lbs. More probably than at the same period a week ago. were sold at the former than the latter quality was unusually good and ter figure, but contracts are now hard the bulk of the sales were as low as to make below \$7.50. A hungry call

lambs and sheep, demand having out-stripped production, and late sales took place on the Chicago market as high as \$10.35 per 100 lbs. for prime steers, \$10.35 for prime outcher hogs and \$12.80 for prime Colorado wooled lambs of medium weight. Other kinds of live stock sell relatively high, and there has never been a period when the entire live stock trade was so fav-orable for stockmen as now. This orable for stockmen as now. This arises from underproduction throughout the states comprising the corn belt and elsewhere, this taking place at a time when the trade requirements are time when the trade requirements are the greatest ever known, largely because of the heavy export demands rendered necessary by the war. Whether prices will go higher or not, the popular belief is that they will, and hardly any limits are fixed in the boom in prime beef cattle.

The great advance that has taken place in prices for well finished cattle creates a strong general desire to engage in grazing well-bred cattle

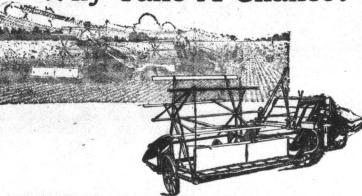
whether the market is declining or advancing at the moment, and feeding lambs have sold of late at higher prices than were ever paid before. Many lambs were contracted early in the season for later delivery at from \$7 to \$8 per head, and some contracts were turned over at profits later. Most of the white-face ewe lambs are going to be retained for breeding making a be retained for breeding, making a corresponding scarcity of lambs for corresponding scarcity of lambs for marketing later as live muttons or feeders. Recent, sales took place in Michigan of grade stock ewes at from \$10 to \$20 per head. California lambs in trains have been shipped to Chicago at good profits in spite of high rates of freight and the great shrinkage on the long journey.

Receipts 1901. The supply of sheep and lambs was very small and prices averaged 50c higher than they were a week ago and was very active at the following prices: Best lambs \$10.25@ 10.50; fair lambs \$9@9.75; light to common lambs \$8@8.50; fair to good sheep \$7@7.50; culls and common \$4.50@5.50.

Bishop, B. & H. sold Sullivan P. Co. 5 sheep av 95 at \$7.25, 9 do av 105 at \$7.25, 20 lambs av 80 at \$10; to Hammond, S. & Co. 54 do av 80 at \$10.50, the soil, and the selection of the seed to the combating of weed and insect Co. 210 sheep av 98 at \$8, 12 do av 90 persts and the harvesting and utilized. pests and the harvesting and utiliza-tion of the crop. It contains many il-lustrations and a large fund of infor-mation of value to grain farmers. Pub-

mation of value to grain farmers. Published by the Macmillan Co.
"The Breeds of Live Stock" is a number of the Rural Textbook series, edited by L. H. Bailey. The text is written by live stock breeders and revised and arranged by Carl W. Gay, Professor of Animal Industry in the University of Pennsylvania. It is a book of 480 pages, containing the history and description of the improved breeds of live stock which have been developed in this and other countries. This latest book of the kind is profuse. This latest book of the kind is profusely illustrated, and will contain much of interest to every live stock breeder. It is published by the Macmillan Co., of New York.

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Eggs Delivered FREE, FROM S. S. Hamburgs, Barred P. Rocks, White Leghorns, Burred P. Rocks, White Runner Ducks, White Holland Turkeys. Circular free. Riverview Farm, Vassar, Mich.

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Saving the Little Chicks | Management of Roosters and Culls liminary preparation, can be done all

them forward as fast as possible and turity, and quick maturity is neces- half to two dollars. sary if we would reap the dollars. The quick maturing hen is the one that to sell a two-pound rooster for seventy cents than it is to sell a five-pound rooster for fifty cents. It is more profitable to feed all you can coax them to eat for two months and bring them to difference in price would probably more than pay for all the feed it took try, old or young, is poor economy.

When to Caponize.

ment of the young stock unless the be on the wrong side of the ledger, un- pecially good for the young stock. less we caponize them and thus make them bring in the extra profits. I We can work with the little fellow two them in prime condition.

F we want to be sure our poultry wait another year to get another little pays us we want to make every bunch of two-pounders. With capons point count. From the time the we can keep on putting meat on the chicks are hatched we want to push little two-pounder for several months yet avoid undue forcing. A rapid heal- and our little fifty-center has climbed thy growth is necessary to quick ma- up to a bird worth from a dollar and a

Feeding for Quickest Gains.

Keeping grain by young stock is not pays her way by laying in the winter. enough if you want to have them make consider when pushing the chicks. true if they have free range, and there them as broilers. It is more profitable the go if they can find anything to own way. scratch for. They will not get all they should by this hunting, and they will not stop to eat as often as they should. The finest flock of pullets I ever reared were fed five or six times a day. They hens this past year. Their livers have had mash always by them, too. I would white spots on them. They are sick boil oats or wheat, make a steamed three or four days and then die. Are the eggs good to use?

E. S. two pounds than it is to take three had mash always by them, too. I would months and less feed per month. The boil oats or wheat, make a steamed mash, or some other feed that they would relish and would pound on a in either event. Saving feed with poul- pan with the spoon to call them, so whenever I would pound on the pan they would cease bug hunting and come I always tried to make the roosters for the feed I was preparing to give pay the expense of rearing the pullets them, and they would eat all they to laying age. This often requires could of it. The more you can get them pretty close figuring and rapid develop- to eat the better. Then the ration should be balanced for them. I always whole flock is hatched very early. It feed some meat meal or meat scraps, is not difficult to do this with March and like to have cracked bone so they hatches, and April hatches will be all can get all they want, and they will right if everything moves smoothly, want more than you would guess. Exbut May hatches will take close figur- cept a steamed mash once in a while ing, while later hatches are bound to I never feed wet foods. Milk is es-

A Good Finishing Ration.

As soon as the roosters can be diswould advise caponizing all cockerels tinguished they should be separated that reach two pounds when the price from the pullets and shut up in a modis below twenty cents, or even twenty- erately sized pen where they can be five. That is what I plan to do this fed heavily, providing plenty of green season. Capons sell well and the mar- feed and meat scraps, as well as corn ket is sure to be good for them. They and other grains. Corn meal moistengrow to be heavier than cockerels of ed with milk makes a splendid fattenthe same breed, and as they bring al- ing ration and should be fed the last frame is pretty well developed, it pays od of preparing for market will give best to keep them. Then we have the plump broilers, and they should be of young geese is to keep them conadditional advantage of having the marketed at about two pounds to two fined and dry for the first day or so. foundation for a considerable product, and a quarter. After this stage they

at one time, and, as it is often necessary to ship broilers from small stations where the local buyer will not we can keep on putting meat on the handle them, the one shipment is an advantage. Often a small number of until we get him up to a ten-pounder, broilers that would not pay to ship, cannot be disposed of at all in these small places without taking the spring chicken price.

Another advantage of early hatched chickens is the fact that early pullets will begin to lay in the fall and so do This is not all, though, that we must the best growth. This is especially not need to be fed so long before they begin laying. This makes it easier for The earlier we get the young roosters are many of them. Chicks are great the masculine proportion to support on the market the more we will get for hunters, and they will be always on them until they go to work to pay their L. H. Совв.

LIVER TROUBLE.

I have had a lot of trouble with my

From the symptoms you give, there is no doubt but what your chickens have liver trouble. This is a very common chicken disease which is most always due to the lack of exercise or improper feeding. It is a disease which rarely shows itself until just a few days before the death of the chicken.

For treatment, we would suggest that you feed the chickens light feeds, such as plenty of greens and bran, and, of course, some grains, and make them work for what feed they get. Also, use special care in seeing that the drinking fountains and any feeding dishes are kept clean and sanitary. The coop surroundings should also be kept in a sanitary condition.

This disease is not easily cured, and the methods above suggested will act rather for preventive than curative purposes.

FEEDING GOSLINGS AND POULTS.

Will you give me some information most as much per pound as broilers ten days almost entirely, during which do after the first crop or two, and the time they should be shut up closely so pounds can be put on cheaper after the they cannot exercise much. This methate is as to care and feeding of young geese and turkeys as I am inexperienced and wish to raise some this year. We have some setting now. F. I. D.

One of the chief things in the care

Sometimes the goslings are quite while it takes a lot of work and trou- will begin to develop frame rapidly, slow in taking to feed, but one should ble and the two pounds produced by it and you will have to grow them to not worry about that. For the first goes such a little way with broilers. three and a half to four pounds to get feeds, the yolk of hard-boiled eggs with a little dried bread crumbs is very months and get two pounds, but then Early hatched chicks all being hatch- good. This can be changed later to we are done. We can sell him and ed at once makes the ideal flock, for any of the grains finely ground, and mixing these grains with chopped egg. Fresh, tender grass is also good.

It is best to keep the goslings confined for the first ten days or two HE incubator in many poultry common, and a chick soon dies if not weeks. This can best be done by keeping them in a wire enclosure with the Many a hatch in warm weather mother hen or goose on grass, shifting haps longer. The best hatches invar- would be exhausted with the hot im- the location of the pen every day or iably, in my experience, come off in pure air of the chamber and die in a so. After the young geese are let out warm weather. When you set the in- few days were it not for opening the to pasture, if they have plenty of grass, cubator in warm days, also set some incubator doors quite often to see how it will not be necessary to feed them

cies left by the infertile eggs tested and the purer, cooler air to come in as The feeding of young turkeys is out, with fertile eggs tested from un- the old hen lets it in to her hatching somewhat similar to that of feeding der the hens. All of your care will chicks. One can do this and yet not goslings. A little grit should be put

During the first two or three weeks way. Also, don't pay any attention to One of the largest per cent hatches the turkeys should be fed about every the person who insists on you keeping I have ever seen, where no testing out two hours, but after that when they the doors of an incubator closed during of infertile eggs was done, was a hatch get so they roam about, the number of the hatching process, not even to open made with an ordinary machine, the feeds can be lessened considerably. them to help a chick from its shell. hatch coming off by the middle of July. When they are able to stay out in the The one who advises this, though he The incubator was kept in a small bed-field all day, one feed in the morning

Doing Good Business.

comb, Byron Center, Mich.

Diamentalia de Producio de Carlo de Car Summer Incubator Hints

plants and farm flocks is kept set free. hatching until far in June, perance with mine.

during the last part of the hatch any- in the nursery. and dry. I would have lost many chickens had I listened to this advice and
failed to open the door often enough
to loosen the chick struggling with
the shell dried and glued to its throat
or wing In warm weather this is quite

was folded a heavy blanket to help
make more heat. We all prophesied a
ness in White Holland turkeys, orders
coming by both mail and telegraph.
Most of them show key marks of the
Michigan Farmer. You may continue
my ad until further notice."—A. Whitand dry. I would have lost many chick- was folded a heavy blanket to help or wing. In warm weather this is quite

hens and when you test out the the chicks are coming on and in this more than twice a day for a while, and incubator eggs fill in all the vacan- way allowing the hot air to flow out later once a day. then be right with the incubator. If overdo the opening of doors on the into the pen as soon as the poults are you do not get a more than 95 per hatching chicks. In fact, if the incu- able to pick about, then stale bread cent hatch from that incubator then bator is kept in a room of the dwell- moistened with sweet milk and squeezyour experience will not be in according house, after the chicks are well ed dry should be fed them, or if the started to hatch I open the incubator stale bread is not available, cottage It will be best to keep the incubator door to a tiny crack, and prop it open cheese may be fed. This should be window that can be left open to stay until the hatch is all over and prepared so that it is quite dry.

be from some experiment station, has room off a hot kitchen. The bedroom and another at night are sufficient, failed to experiment in the hatching had one small window which was kept conditions when the days are warm open all the time. Over the incubator

> Indiana. IDA SHEPLER.

Grange.

INTERESTING CHILDREN IN THE GRANGE.

We are so often asked what to do with the children, or how can you interest the young folks so they will stick to the Grange? I always ques-"What are you trying to do for them?" and too often the answer comes back: "Well, nothing special."

The average Grange elects its officers to fulfill the work of the Grange and I venture to say that not one out for Potterville and Benton townships." of 10 members accept personal responthe object of special thought and effort. This is not because the members are unwilling, but they lack initiative and wait for a few to plan and direct. We know that one of the most marked tendencies of the times is organization and co-operation. We can see that both multiply effectiveness ductive of more practical results than many-fold. The great forces of modern times are those which, as organized forces, have taken advantage of this the latter line of endeavor is not a mighty "tide in the affairs of men and legitimate one for any organization of women" and the Grange must lay hold of this same power if it would in the may be more quickly accomplished by of this same power if it would in the future give direction to the development of its youth. They are a part of munity the efficiency of organized efthe machinery by which we can accomplish what our future Grange may ence for the accomplishment of a still be and should be regarded as such, and in proportion to which they are kept up to the mark and made to perform their full share of the work, they will their full share of the work, they will be profitable or unprofitable also if more attention was given to the children, not only would they be benefited, but the entire family would have higher conceptions of the meaning and possibilities of life. Let us give of our strength, our helpful suggestions and enthusiasm so that our young folks will live in an atmosphere that they, in a measure, are responsible for every happening in the community. This will cost some effort, much sacrifice, but it would not be worth doing if it didn't. I believe I appreciate in some measure the magnitude of problems which confront a Grange in such an effort, but such is my confidence that no other branch of Grange work is more worth while. With respect to the exact routine to be pursued no rule can be prescribed which would apply to all cases. Each Grange must be governed by circumstances. Where you have a general theme of the occasion was "Thrift." The discussion was opened by W. K. Crafts, but most of those present participated and gave their ideas to to what constituted "Thrift." Mr. George Dorr then gave a talk on "Fruit Growing in this Loality." This was followed by discussion and "round-table," after which all took seats at the "square tables," and did full justice to the supper provided by the ladies. Mrs. Hard, our corresponding secretary, having moved to Vermont, and left a vacancy, N. B. Wood was elected to fill the position. The Club voted to participate in the proposed summer rally to be held at the M. A. C., Lansing, in August. The next meeting of the Club will be held with Marcus Preston and family, Wednesday, June 14.—Norman Wood, Secretary. be profitable or unprofitable also if Each Grange must be governed by circumstances. Where you have a room the children can use, a much greater work can be accomplished. If you haven't a room why not provide one? If possible choose a leader who has a love and interest for little folks. Furnish some means for them to work with until they get started and I am ably well prepared for defense. Mrs. quite sure they will have a fund of their own to draw from. If one members, said: "Everything in life needs preparation." Miss Maude ber doesn't care to direct all the time let the sisters take turns or there may be teachers or those fitting themselves for teaching who would realize the worth of community service they would be doing and gladly take hold of it. (Continued next week).

AMONG THE LIVE GRANGES.

candidates were given the first degree, and 21 the second degree. After the degree work the following Easter program was given: Song by the Grange; an Easter prayer, by Florence Spangler; recitation, Ola Collins; song, Martha Pfouts; Easter exercises by the little folks; six girls carrying Easter lilies sang an Easter song; six boys repeated verses in memory of Christ upon the cross; 13 little girls with appropriate verses placed golden letters upon the cross, forming the words Easter Lilies, and Rock of Ages; closing piece, Leland Foster.

Farmers' Clubs

Address all communications relative to the organization of new Clubs to Mrs. J. S. Brown, Howell, Mich.

MAKE THE CLUB A BOOSTERS' ORGANIZATION.

A recent report from Eaton county describes the organization of a "Booster Club" by the residents of two townships. The purpose of the Club is to "promote better agricultural, educational, social and business advantages

This should be the purpose of every sibility for a certain work and make it local Farmers' Club in the state. Too often the local Club becomes a sort of self-centered, close corporation, with too little thought for the good of the community by the Club membership. An effort on the part of any Farmers' Club to benefit the community along the lines proposed by this booster Club will be effort better expended and productive of mean practical results than may be more quickly accomplished by first demonstrating to the local comreater work will be many times mulgreater tiplied.

CLUB DISCUSSIONS.

Secretary.

Preparedness.—The May meeting of the Columbia Farmers' Club met at the home of Mr. and Mrs. Sumner Ladd in the village of Brooklyn on the thirteenth. "Preparedness" was the subject discussed. Mr. J. Freeman spoke for the negative and Mrs. Grace Hendershot gaves some excellent rese Hendershot gave some excellent rea-sons wry the nation should be reason-Van DeCur gave a reading. Mrs. Frank Lomis and Mrs. Hayes gave a vocal duet. The June meeting will be held at the home of Mr. and Mrs. Walter Reading.—Maude Smith, Reporter.

A Varied Discussion.—The first half-day meeting of Washington Center day meeting of Washington Center Farmers' Club met May 17 at Elmdale Stock Farm, the home of Mr. and Mrs. Frank Heinlen. On account of the heavy rains quite a number of the men Morenci Grange met Friday evening,
May 5. All the officers were present.
After the business a recess was declared to prepare for degree work. Eight candidates were given the first degree, and 21 the second degree. After the degree work the following Easter program was given: Song by the Grange; an Easter prayer, by Florence Spangler; recitation, Ola Collins; song, Martha Pfouts; Easter exercises by the little folks; six girls carrying Easter tilles sang an Easter song; six boys repeated verses in memory of Christ upon the cross; 13 little girls with appropriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate verses placed golden letters settlement of disputes between Nature 12 to the propriate propriate verses placed golden letters settlement of disputes between Naupon the cross, forming the words "Christ is Risen." Then all joined in singing "Ring the Bells of Easter;" Wiches, coffee and cake were served by recitation, Donald Cone; instrumental music, Margarette Huffman; recitation Ethel Colgrove; tableaux in two parts, Easter Lilies, and Rock of Ages; clost Thursday in June.—Mrs. E. Z. Crowel, ing piece, Leland Foster.





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Heavy Winter Layers: Louis, S.O.W. Leghorns, Wyckoff strain. Eggs, \$1.00 per 15; \$3, per 50; \$5. per 100. H. A. Magoon, R. 5, Ann Arbor, Mich.

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Let us sell you a trio or pen of this year's breeding stock at half the price you pay at other times of the year. A good chance to start with well-breed stock. Hatching eggs ½ price after May I5 th. Order chicks now. Remember this, Statisfaction or your money Back.) Babcock & Son. Battle Creek, Mich., R. D. 4.

ROSE Comb Rhode Island Red Eggs, dark colored matings \$1.50 per 15. Utility eggs, laying stran \$4 per 100. MRS. T. A. ETTER, Richland, Michigan

OSE and S. C. R. I. Red eggs by mail \$1.50 per 15 to r 20c per egg from special pens; \$5 per 10). Hens r sale. JENNIE BUELL, Ann Arbor, R. 8, Mich. Rose Comb Brown Leghorns Eggs \$1 per 15: \$4 per 15: \$4 per Philadelphia winners. D. Elon Spotts. Hillsdale, Mich.

IMPROVE your poultry. My Young's strain S. O. White Leghorns great money makers. Strong, vigorous, free-range stock. Baby chicks 39 per 100. Satisfaction guaranteed. Free catalogue. W. Van Appledorn, Holland, Michigae

C. WHITE LEGHORNS, bred for size, shape, vigor, egg production. 14 years' experience breeding Leghorns. Hatching eggs \$1.50 per 100. Baby Chicks \$10 per 100. A. O. HOWARD, Tecumseh, Mich.

Tom Barron S. C. W. Leghorns. Large, vigorous stock. Eggs \$5.00 per 100, \$1.25 per 15, post paid. No Chicks. Bruce W. Brown, Mayville, Mio.

Buff Wyandotte and Barred Rock Cockerels \$2.00 each, ergs for hatching \$1,00 per 15.
Mrs. R. W. BLACK, Caro, Michigan

SILVER GOLDEN AND WHITE AWYANDOTTES.
Eggs from all mattings, 1.50 per 15, \$2.50 per 30 until
July 1st. C. W. Browning, R. 2, Portland, Mich.

White Wyandotte Cock & Cockerels. Eggs \$1, \$2, \$3, \$3, DAVID RAY, 202 Forest Ave., Ypsilanti, Michigan. WHITE WYANDOTTES, Eggs \$1.50 per 15, \$2.50 per 30, \$7.00 per 100. From choice stock.

A. FRANKLIN SMITH, Ann Arbor, Michigan.

White Wyandotte Eggs Half Price balance of the season.
EGGADAY POULTRY RANCH, Marshall, Michigan.

"PREMIER" PARTRIDGE WYANDOTTES 80 * winter

W. H. BACON, Petersburg, Mich.

BREEDERS' DIRECTORY.

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CATTLE.

ABERDEEN-ANGUS

HERD ESTABLISHED IN 1900.
TROJAN - ERICAS and BLACKBIRDS only.
Also breeders of Percheron, Hackney and Saddle Horses.
WOODCOTE STOCK FARM, Ionia, Mich.

ABERDEEN ANGUS: We are ing 15 head of Choice young bulls, one two year old Trojan Erica at \$200.00 if taken in 6 weeks, 14 head from 8 to twenty months old including the first and second prize. Senior bull calves at the 1915 State Fair. Write for Particulars, and come to the farm to look our stock gover, they are of the Blackbird Trojan-Ericas, and K Pride Families only. U.L. CLARK, Hunters Creek, Mich. SIDNEY SMITH, Mgr.

FOR SALE-14 Angus bulls 9 months and older, in-cluding our herd bull. Also a few cows and heifers. Geo. Hathaway & Son, Ovid, Mich,

AYRSHIRES—One of the foremost dairy breeds. The most economical milk producers. Calves for sale. White Leghorn cockerels: Duroo Jersey swine. Michigan School for the Deaf, Flint, Michigan.

VILLAGE FARMS, Incorporated Grass Lake, Michigan, GUERNSEY CATTLE BERKSHIRE HOGS

MILO D. CAMPBELL CHAS. J. ANGEVINE

BEACH FARM **GUERNSEYS**

Average yearly production 422.3 lbs. of fat, three-fourths of them making their records as two year olds. By the use of a pure bred sire, a big improvement can soon be attained if the right selection is made. The breeding of the Beach Farm Herd is as good as can be found, and we guarantee them to be free from contagious diseases and to be satisfactory in every way or money refunded. Write and let us tell you about them.

CAMPBELL & ANGEVINE. Coldwater, Michigan.

Registered Guernsey Bull Calves for sale, May Rose breeding. Address Clint Bishop, Watervliet, Mich.

A VONDALE Guernsey bulls all sold. Sorry to disappoint those wishing ourstock. Only registered bull calves left. Avondale Stock Farm. Wayne, Mich.

Guernsey Bulls of service age and calves from choice. Adv. reg. breeding.
T. V. HICKS, Route 1, Battle Ceeek, Mich.

For Sale ² Registered Guernsey Cows, ¹ grade cow, ⁶ bull calves cheap if taken soon JOHN EBELS, HOLLAND, MICH., R. No. 10.

AT Farmers' Prices. Registered Guernsey Bull calves from A.R. dams and dams being tested, If interested write for photo, breeding and price. Byers & Barnes, Coldwater, hich.

Gurnseys-Bull calves sold, they were beauties, every one pleased, 3 cows to freshen this month, better write now for a good one. J. M. Williams, No. Adams, Mich.

GUERNSEYS We offer a choice lot of high grade Guerney cows and heifers, bred to registered bulls La Tertre of Maple Lane, No. 23192 and Sir Dena No. 36173. Prices reasonable. THE JENNING'S FARMS, R. I, Balley, Mich.

GUERNSEYS-REGISTERED BULL CALVES HICKS' GUERNSEY FARM, Saginaw, W. S., Mich.

Registered Guernseys: One yearling Bull, and three Bull calves for sale. Glenwood and May Rose Breeding. Special price for quick sale. August Morlock, Watervliet, R. 2, Mich.

REG. GUERNSEY Bull Calf for sale, four months old well marked and vigorous. Price reasonable. Eugene Wilcox, R. 2, Bangor, Michigan

Herefords-One Bull Calf. PAW PAW, MICH.

HEREFORDS: 7 Bulls, 10 Heifers. Michigan

HOLSTEIN BULLS FOR SALE Four of them from 12 to 17 months old by 31 lb. re dam's A.R.O. Price \$100.00 to \$150.00. Younger

BLISSVELDT FARMS,

You Want A Bull?

Ready For Service.

From a grand daughter of The King of the Pontiacs. Sired by a bull that is more than a half brother to the Champion Holstein Cow of the World, and whose dam is a 30 lb. 6% % fat daughter of Fontiac Aggie Korndyke who has more 30 lb. daughters than any other living bull, If you do write for pedigree.

EDWIN S. LEWIS, Marshall, Mich.

FOR SALE

SOME VERY FINE YOUNG BULLS

Whose sires have as high as 31 lbs, of butter behind them. As they are young, will make a low price on them. BIGELOW'S HOLSTEIN FARMS, BREEDSVILLE, MICH.

HOLSTEIN Bull Calf: Born Oct. 5. A splendid in dividual, well grown, and of choice breeding. Dam has A.R. Orecord, butter 7 days 18.04 lbs. milk 419.8 asa 2yr. old. Sire Albina Bonte Butter Boy No. 93124. W. B. Reader, Howell, Mich.

HOLSTEIN-FRIESIAN CATTLE

Herd headed by grandson of King Segis Pontiac, and tuberculin tested annually. A few choice young bulls from dams having official recerds. PEACELAND STOCK FARM, Three Rivers, Mich, Chas. Peters, Herdsman. C.L. Brody, Owner, Port Huron, Mich,

For Sale: Big Holstein Bull 2 yr, old. Good breeding, Reg. bulls and heifers 10 mos. old.
Ferd. J. Lange, Sebewaing, Mich.

Duroc Jersey Herd Boars

Special Offering of High Class Fall Boar Pigs. Breeding and Individuality good enough for breeders who appreciate the best.

Also some good farmer's boars. This is the best lot of fall pigs we have ever had to offer. A cordial invitation is extended to visit the farm and inspect the stock. If you wish one of the best young Jersey bulls in Michigan we have him for sale. For further particulars, address,

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



Purebred Registered

HOLSTEIN CATTLE

Holsteins, the best dual purpose breed.

Holstein merit the basic principal. The sound administration of the Holstein-Frieslan Association since 1871, has been the helpful influence, the educational advance agent, and not the basic principal, for the basic principal of Holstein prosperity is the genuine and demonstrated superiority of the purebred registered Holsteins as the largest and most economical producers of milk and the most profitable dual purpose breed. All of the elever exploitation and the most profific advertising in the world would not have placed the Black-and-White breed where it is, had not genuine superior merit been its foundation. Investigate the big "Black-and-Whites."

Send for FREE llustrated Descriptive Booklets The Holstein-Friesian Association of America F. L. Houghton. Sec'y., Box 164. Brattleboro, Vt.

67.5 Rets Hazel-let grandson of Maplecrest De Kol March 26. Traces to De Kol 2d 17 times. Dam Pontiao March 26. Traces to De Kol 2d 17 times. Dam Pontiao Hesperia 2d, a Fontiac Korndyke, Pontiac Cornucopia and Pontiac Burke combination. M. L. McLaulin, Redford, Mich, J

I Have Holstein Bulls, Bull Calves and Cowa I can show breeding, records, in that I offer for sale, two prices. L. E. CONNELL, Fayette, Ohio.

"TOPNOTCH" Holsteins

By careful retention, for many years, of largest ', pro-ducing females, and use of superior sires, a breeding herd of 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.

FOR SALE Registered Holstein Bulls ready for service, and bull calves, also females. FREEMAN J. FISHBECK. Howell, Michigan.

 $R^{\rm EG.\,Holstein ext{-}Freisian}$ cows and heifers, some fresh and some ready to freshen \$125. Reg. bulls \$30 up; Frank Staffen, R. 3, Box 38, Howard City, Mich.

Holstein-Friesian Cattle. HOBART W. FAY, Mason, Michigan.

men to buy pure bred HOLSTEIN BULL Good notes on a year's time accepted in pay-GEO. D. CLARKÉ, VASSAR, MICH.

For Sale My entire herd of high grade Holstein Cows and Heifers. Also one Reg. 3-yr. old Percheron stud colt or will trade for Reg. Holstein cows. Arthur N. Birkholz, New Buffalo, Mich.

CHOICE HOLSTEIN BULLS—all from A. R.O. dams C Entire herd on Semi of, test for yearly work. Jr. 2-yr.-old just finished year's record of over 15,000 lbs. milk, over 1000 lbs. butter record in mature class. Chery Creek StockFarm, M.E. Parmelle, Prop., Hilliards, Mich.

FOR SALE Reg. Holstein females, Pontiac Korndyke and Hengerveld DeKol Breeding. Price right, 1 to 5 years. John A. Rinke, Warren, Mich.

6 Holstein Bulls

Ready for service, at farmers' prices. All have high testing A. R. O. daughters from world Record Sire, nothing better at any price. LONG BEACH FARM, Gull Lake, (Kalamazoo Co.) Michigan.

Lillie Farmstead Jersey Cattle. Bull calves from R. of M. Cows, also heifer calves and several bred heifers for sale. Colon C. Lillie, Coopersville, Mich. Hope Farm Jerseys FOR SALE-3 yearling george c. Borck, Grand Haven, Mich.

Jersey Bulls for Sale from high-producing dams, with testing Asso. records, also on semi-official test. O. B. Wehner, R. 6, Allegan, Mich

One Jersey Bull READY FOR SERVICE, and sev-notten Farm, Grass Lake, MICHIGAN.

Grade Jersey Herd For Sale FORTY COWS

The result of twenty years careful breeding and selection, are now offered for sale. Individual milk records have always been kept and are open for inspection. If interested write for particulars and if possible visit and examine the herd and their record. Delivery will be made at any time desired during the spring or early summer. A few registered Jerseys also for sale. Address Geo. A. True, Armada, Mich.

The Wildwood Jersey Herd 40 head, tuberculin tested, herd now on R of M test. No females for sale. Choice young bulls for sale from Dams that are on test for Register of Merit. Write your wants or come and see them before buying. ALVIN BALDEN,

Hillside Farm Jerseys A 10 mos. old. solid color bull now offered for sale. Dam is a R. of M. cow with record of 546 lbs, of butter as a 3 r. old. He is a fine individual. Price right. C. & O. Deake, Ypsilanti, Mich.

Maple Lane R. of M. JERSEY HERD offers for sale, tuberculin tested cows, heifers, bulls, and buil calves backed by several generations of R. of M. breeding. IRVIN FOX, Allegan, Michigan.

JERSEY BULL CALF FOR SALE Ready for service. Majesty—Raleigh breeding. Meadowland Farm, Watermank Waterman, Ann Arbor, Miche

FOR SALE: Our herd bull, Jacoba's Fairy Emanon age 4 years, kind, quick and sure. Must be seen to be appreciated. Reason for selling, must change sires. Also two yearling bulls from him SMITH - PARKER, R. D. No. 4, Howell, Michigan.

BIDWELL SHORTHORNS



For "Beef and Milk" Registered bulls, Scotch-topped roans, reds and white for sale. Farm at N.Y.C. Depot; also D. T. & I. R'y. Address G.R. Schreder Mgr. BIDWELL STOCK FARM

Shorthorn Cattle of both Sex for Sale W. W. KNAPP. Howell. Michigan.

DATRY Bred Shorthorns of best Bates strains. No more females for sale at any price.

J. B. Hummel, Mason, Michigan.

FOR Sale—12 Reg. Short Horn Bulls by Maxwalton Monarch 2nd, a son of Avondale, from 5 to 9 mos.old John Schmidt, Reed City, R. No. 5., Michigan

Shorthorn Cattle. Five cows, Ten heifers, Five bull calves; also herd bull for sale, write. Wm. J. Bell, Rose City, Mich.

Shorthorn Cows and Bulls For Sale R, R. Station, Elsie. H, B. PETERS, Carland, Mich.

Shorthorn AND POLLED DURHAMS FOR SALE, head in herd. C. Carlson, Leroy, Mich.

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

Two vr'l. red shorthorn Bulls. Roan Calf 9 mo. old Poll Angus Bull calf, 8 mo. old, not reg. Priced to move quick. CHASE'S Stock Farm, Marlette, Mich., R. 1. Loads feeders and two load yearling steers. Also can show you any number 1, 2 and 3 years old from 500 to 1200 lbs. Isaac Shanstum, Fairfield, Iowa. R-8

Brown Swiss—One Bull Calf. onchard Lawn Dairy, Lawton, Mich.

HOGS.

Royalton Bred Berkshires. Male and female pigs born March 9th, also October boars and gilts, registered with papers. Satisfaction guaranteed. D. F. Valentine, Supt., Temperance, Mich.

Berkshire Hogs Sows bred to farrow in April. Best, Maple Place Farms C. S. BARTLETT, Propr.

Berkshires of best breeding of various ages, either sex, all registered stock, no akin, special reduced price. Write your wants quick. Mitchell's Lakeside Farms, R.2, Bloomingdale, Mich.

Berkshires. Of various ages, either sex, open orbred, prolific strains, Registered, at moderate price. Elmhurst Stock Farm, Almont, Michigan. Berkshires, I have two choice Boars for sale six mos.

A. A. PATTULLO, R. 4. Deckerville Mich.

Boars for Sale One yearling: two 10 mos; two 6 mos; first class specimens.

J. H. BANGHART, East Lansing, Mich.

DUROC JERSEY BOARS a choice lot of spring boars not akin. W. C. TAYLOR, Milan, Michigan

Duroc Jerseys Fall and spring pigs either sex, from choice strains. S. C. STAHLMAN. CHERRY LAWN FARM, Shepherd, Michigan.

DUROC JERSEY Bred sows and gilts orders for spring pigs. E. D. Heydenberk, Wayland, Mich.

DUROC Jerseys—Fancy fall pigs (either sex). Buff Rock eggs \$1.25 peg 15; S. C. W. Leghorn eggs \$1 per 15. John McNicoll, R. 4, Station A, Bay City, Mich. Duroc Jersey—Sept. boars ready for service also open gilts and some sows bred for Aug. and Sept. E. H. MORRIS, MONROE, MICH.

DUROC JERSEYS :- all sold out for the present. Wm. W. Kennedy, Grass Lake, Michigan.

DUROC JERSEYS-A few fall boars for sale.

Duroc Jerseys I have some good last September Boars and gilts. Gilts will be bred for September farrow, H. G. Keesler, R. No. 5, Cassopolis, Michigan

DOBSON'S DUROCS Combine size, quality, breeding. Boars for sale. Pigs at weaning time. Registered Jersey bull. Orlo L. Dobson, Quincy, Mich. Heavy Boned Duroes For Sale, Bred Sows Sping Pigs. M. A. Bray, Okemos, (Ingham Co.) Mich.

Duroc Jersey Boars Ready for service. Big. Grand Champion blood lines. Gilts bred for Sept. farrow. F. J. DRODT, R. 1, Monroe, Michigan.



I HAVE started thousands of breeders on the road to my great herd in ever community where I am not already represented by these fine early developers—ready for market at six months old. Write for my plan—"More Money from Hoga." G. S. BENJAMIN, R. F. D. 10 Portland, Michigan

Chester Whiles Spring pigs from the best blood lines for sale. Pairs not akin.

F. W. ALEXANDER. Vassar, Mich.

0. I. C. BRED GILTS, Also young boars shipped C. O. D.



O. I. C. SPRING BOARS of good type and Red Polled bull calves.

John Berner and Son, Grand Ledge, Mich.

O. I. C. Choice serviceable boars. Choice gilts all pigs, either sex. not akin. Write for low prices and description. A. V. HATT, Grass Lake. Mich.

O. I C. Swine—A nice lot of spring pigs. Write your wants. Meadow View Stock Farm, Holland, Michigan. R. R. No. 5. O. I. C. October boars weighing 200 lbs. at \$25 c. J. THOMPSON, Rockford, Michigan,

O. l. C. Boars for service. Gilts bred for May and express. G. P. ANDREWS, Dansville, Mich.

O. I. C. Serviceable boars, glits bred for June no akin. H. W. MANN, Dansville, Michigan.

O.I.C. Swine. I am booking orders for Spring pigs, Elmer E. Smith, Redford, Mich.

0. I. C. bred gilts all sold, am offering Sept. boars and gilts, large growthy ones, and booking orders for spring pigs. A.J. Barker, R. 1, Belmont, Mich.

0.1. C's. 50 Mar. and Apr. pigs, pairs and triosno akin, bred gilts to farrow in Aug., 3 Holstein Bulls. Cloverleaf Stock Farm, Monroe, Mich. R. No. 1

BIG TYPE O. I. C.'s. and Chester Whites. Special prices on all boars and fall pigs either sex. These are sired by Abo 2nd, this boar sired our unbeaten breeders young herd at every state fair we showed this year, other sires are Wonder Boy, White Hall and Allen, this boar was junior champion at Wis. State Fair last year. Now Mr. Buyer our pigs are all sired from champions, our price is no higher than other breeders and the Express Co. charges just the same for a poor pig as it does for a good one. Get our catalog and see where the good ones are. We are booking for Spring pigs sired by Sch colmaster, the highest priced boar of the breed and five times G. Champion. We Reg. Free and ship C. O. D. Rolling View Stock Farms, Cass City, Mich.

O. l. C's. A few bred sows to farrow in April, May also gilts. Have them not akin. All good stock. Otto B. Schulze, Nashville. Mich. ½ mile west of depot.

O.I.C.s Some 2-year-old sows bred. Fall pigs, either sex. A. R. GRAHAM, Flint, Michigan.

O. I. C. Spring pigs, both sex, \$10.00 each at weaning time. Booking orders now. Recorded free. Satisfaction guaranteed. Julian P. Claxton, Flint, Mich. R. 8,

Two Sept, boars, Ithree 1915 July gilts, bred for July farrow, sired by Lenghty Prince, No. 38161, bred to Wonder 4th. No 33297, he by Wonder 18689, one of the most popular boars of the breed. Have the finest lot of Spring pigs I ever raised. Can furnish in pairs not akin, NEWMAN'S STOCK FARM, R.1, Marlette, Mich.

O. I. C. September pigs, both sex. Bred sows all sold.
E. B. MILETT, Fowlerville, Michigan.

O. I. C. SWINE: If you are interested in you with a choice pair or trio, not akin, or a gilt, due to farrow about September first.

A. J. GORDEN, R. No. 2, Dorr, Mich.

Boars at Half Price We still have a few big boned, big type Poland China boars ready for Service, weighing up to 250 lbs, not fat at \$20 & \$25 each. Registered in buyer s name. Also registered black Percheron Stillion 2 years old \$250,00. J. C. BUTLER, Portland, Mich., Bell Phone.

Big Type Poland China Pairs and trio not akin out of large litters.
G. W. HOLTON, Route 11, Kalamazoo Michigan. Big Type Poland Chinas Boars of August farrow, pigs. A. A. WOOD & SON, Saline, Michigan.

FOR SALE, P. C. Sows, "Big Type" bred for Sept, farrow. Extra good 7 months boar. March and April pigs. S.C.B. Minoreas, R.W. Mills, Saline, Mich.

Poland China Spring Pigs

Our herd sire was Champion and Grand Champion at the State Fair last fall. Our sows are great big stretchy, splendid individuals, with best breeding. Pigs from such matings, will please you. Get our prices HILLCREST FARM
KALAMAZOO, MICH.

Large Strain P. C. A few choice fall boars ready Gilts for early farrow all sold, a few choice Gilts to farrow in Aug., and Sept., bred to black Wonder and Oaklands Equal Jr. H.O. Swartz, Schoolcraft, Mich.

Large Type P. C. Gilts and sows, Bred for Mar. and Moines, Big Knox Jr., and Giant Defender. Bred to Big Knox Jr., Smooth Wonder 3 and Big Jumbo, four greatest boars in state. Come or write. W.E. Livingston, Parma, Mich.

BIG Type Poland Chinas, Sired by Big Type King, our 1000 lb. boar. Spring pigs, sired by big type King, Fesenmeyer A Wonder Jr., and Mow's Big Bone. W. Brewbaker & Sons, Elsie, Michigan.

For Sale Poland Chinas either sex, all ages. Something good at a low price. P. D. Long, R. F. D. No. 8. Grand Rapids, Mich. Heavy Boned Poland Chinas. Fall and Summer Pigs. Sows Bred. Eggs from big Barred Rocks \$1.00 for 15. ROBERT NEVE, Pierson, Michigan.

REGISTERED Poland China Spring Boars and Sows Rat \$15 each. Making this special price to make room for others. A.G. Meade, Stanton, Mich., Colbys Ranch.

Large Type P.C. Sows & Gilts all sold. Have 3 extra good spring boars. Sired by Big Defender. Augusta, Michigan.

Large Yorkshire Swine all sees. Red Poll Bulls ready to use \$75 each. HOMER, MICHIGAN.

Large Yorkshires August and September pigs. 2 spring boars. Prices reasonable. Route No. 1, ADA, MICHIGAN. GROWTHY DISEASE PROLIFIC "MULEFOOT" RESIST.

HOG WE ARE NOW BOOKING ORDERS FOR SPRING PIGS THE CAHILL FARMS KALAMAZOO - - - -

Yearling Hampshire Boars \$25.00,each for quicksale. Spring pigs \$10.00 each, registered. John W. Snyder, R. 4, St. Johns. Mich.

Hampshire Swine. Bred Sows and gilts for August and September farrows. Spring pigs, both sex. FLOYD MYERS, R. No. 9, Decatur, Ind.

HORSES

Registered Percherons Brood mares, fillies and young stallions priced to sell. Inspection invited.

L. C. HUNT, Eaton Rapids, Michigan

Percherons, Holsteins, Angus, Shropshires, Durocs DORR D. BUELL. Elmira. Michigan.

Grey Registered Percheron Stallion sold. Have the him. T. H. LOVE, R. 3, Howell, Michigan.

FOR SALE-Registered Percheron Stallions, Mares and Fillies at reasonable prices. Inpection invited. F. L. KING & SON. Charlotte Mich. FOR SALE: Percheron Stud Colt, 11 months old, Duroc pigs, Feb. farrowed, either sex. E. J. ALDRICH, Tekonsha, Cal., Co., Mich., Bell Phone,

Breeders' Directory—Continued on page 703.

Veterinary.

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

Vaginal Hemorrhage.-When my 12year-old mare comes in heat she passes blood for several days. R. H., Jr., Ster-ling, Mich.—Give her a teaspoonful of fluid extract ergot at a dose three times a day times a day.

Water Farcy.—I have a seven-year-old mare that has water farcy and her leg opens in several places, discharg-ing a watery pus. E. H., Marion, Mich.—Give her 1 dr. powdered sul-phate iron and 1 dr. acetate of potash at a dose in feed three times a day. Dissolve 1/4 lb. sugar of lead in a gal-lon of water and wet leg three times a day. Unless your name is signed to a day. Unless your name is signed to your next communication, it will not receive attention. This department is conducted solely for the benefit of our subscribers, but how are we to know them, unless their name and address accompanies their letter?

Milk Sours Quickly.—I am milking six cows and the milk from them will six cows and the milk from them will sour in a cool room in less than 24 hours. My cows appear to be healthy, and I am feeding them corn silage, clover hay, cornstalks, also corn and oats ground. J. F. C., Hersey, Mich.—Clean and disinfect your cow stable, remove all everyment not only from remove all excrement, not only from stable but near by; perhaps your cow stable is not properly drained; besides, your cows may not be clean. I do not your cows may not be clean. I do not believe the fault is in the feed; neither do I believe your cows are unhealthy, but the milk becomes loaded with bacteria, either at or after milking; or else your milk house is not sanitary. I also advise that your milking utensils be kept clean and thoroughly aired outdoors. outdoors.

G. L., Berrien Springs, Mich.—Do not crush the warbles unless you open skin and allow them to escape; however, you had better paint bunches occasionally with tincture iodine.

Suppurating Glands.—I have a three-year-old heifer giving milk; she has a round raw sore about the size of a fifty-cent piece on front leg and one on ntty-cent piece on front leg and one on hind leg just above the hoof, and lately I noticed a few more bunches high up on the leg. H. W., Milford, Mich.—Paint sores and bunches with tincture of iodine three times a week and give her a teaspoonful of sulphur at a dose in food tribes a day. in feed twice a day.

Eczema.—I have a few four-month-old pigs whose skins are covered with a dry scab or scale. I have blistered them with kerosene, but they fail to get well. L. K., Yale, Mich.—Apply one part oxide of zinc and five parts

one part oxide of zinc and five parts of vaseline three times a week.

Blood Poison.—I have 40 R. I. Red hens (pullets) that have laid good all winter and are yet laying; besides, they appear to be healthy, but some of them break open on the breast and after a while die, but during this sickness they never stop laying. I have opened the dead ones and find they are fat and full of eggs. My White Leghorn sare all healthy. I lost a couple of the Reds in the winter; I took the corn away from the others and have had no trouble until lately. I am feeding oats and wheat. J. K., Otsego, Mich.—I am inclined to believe that your hens are perhaps overly fleshy and die from suppurative gland troughle. If your other chickens are fed the same kind of food and are well, it would seem as though you were feeding about the right ration. Apply tincture iodine to sore parts as soon as you discover them.

Suppression of Urine.—I frequently

you discover them.

Suppression of Urine.—I frequently obtain valuable information by reading your veterinary column but fail to find a remedy for my three-year-old colt which has some difficulty in passing urine. His stall has a very strong odor, but his appetite appears to be good. R. H. B., Atkins, Mich.—Give your horse a teaspoonful of acetate of pot-

vaginal discharge, dissolve 1 dr. per-manganate of potash in three quarts of tepid water and wash out vagina three times a week.

Weakness.—Have a mare 11 years old that works and feels good in the morning, but in the afternoon tires, trembles and seems to be about all in. trembles and seems to be about all in. Her muscles tremble several times a day, but these spells do not last long. I feed her four quarts of oats and hay every feed, but she is never satisfied, always appearing hungry and I have thought that her water was rather milky. F. B., Mancelona, Mich.—Increase her food supply and lighten her work until she gets in better condition. Give her 1 dr. of ground nux vomica. Give her 1 dr. of ground nux vomica, ½ oz. tincture gentian, ½ oz. tincture cinchona at a dose three times a day.

Chronic Indigestion.—I have a four-year-old colt that has been in low flesh since middle of last winter. Since turning him to pasture I fail to see any improvement. E. C. W., Bellaire, Mich.—His teeth may need a little at tention, also feed him grain in addition to his grass ration. Give ½ oz. Fowler's solution at a dose night and morning for two or three weeks, or longer you believe it necessary.

Bunch on Shoulder.-I have a black Percheron mare five years old that has a bunch on the middle of her shoulder and I am at a loss to know how to treat her. W. G. W., Avoca, Mich.—Clip off hair and apply tincture iodine once a day, or cut out bunch.

Scrotal Hernia.—I have a suckling colt ten days old which seems to have a rupture in scrotum and I also have a

colt ten days old which seems to have a rupture in scrotum and I also have a calf which bloats when given milk. W. N. W., Carsonville, Mich.—If your colt is left alone, it might perhaps recover, if not a competent Vet. could doubtless save it by performing a surgical operation. Give your calf either hyposulphite of soda or salicylic acid in milk or perhaps if you would sterilize milk the calf would not bloat.

the calf would not bloat.

Barren Cow.—I have a three-yearold cow that came fresh May, 1915;
soon bred her and she got with calf,
but lost her calf in September and
since then she has failed to get with
calf. Do you advise me to keep her
for dairy purposes? Our local Vet. believes that she will never be much of
a milker, and will never be profitable
for dairy purposes, unless she gets
with calf. Do you advise me to try
the yeast treatment on her? W. S.,
Bellaire, Mich.—All things considered
I believe she had better be fatted and
sold for beef; however, if she is the
dairy type, you might try the yeast
treatment; however, I am inclined to
believe that she suffers from contagibelieve that she suffers from contagious abortion.

Sore Back.-About April 8 I wrote you regarding a sore back on cow; you prescribed a remedy for this, but I am sorry to say she is no better. The am sorry to say she is no better. The sore, which is in the form of a scab or fine warts, is beginning to grow larger and is nearly five or six inches across. Tincture of iodine does not seem to help her. O. A. R., Thompsonville, Mich.—Employ a Vet. and cut out the entire bunch is the only way to get rid of it.

mint hay which causes a looseness of the bowels and an abnormal secretion of urine. F. E. L., Decatur, Mich.—Change his food supply and give him 1 dr. fluid extract nux vomica, ½ oz. of tincture gentian (comp.), and 1 dr. of hydrochloric acid "dilute," U. S. P. in a pint of cold water as a drench three times a day.

three times a day.

Inflammation of Eyes.—What can I do for sheep with a scum over eyes? This is only at times. I have a flock of very fine sheep and find two among them that the eyes cover over, sometimes they are totally blind. I have a plied burnt alum which I blow into eye. Mrs. O. E. B., Hersey, Mich.—Discontinue blowing burnt alum into eyes, but occasionally blow a small quantity of calomel directly on eyeball joint. A. C., Melville, Mich.—Apply one part red iodide mercury and eight parts lard to splint every week or ten days and apply one part powdered cantharides and eight parts lard to bospavin every week or ten days and apply one part powdered cantharides and eight parts lard to breed her again. B. S., Fosters, Mich.—It depends entirely upon cause of her miscarriage. If you have no cases of contagious abortion on your farm and if she has no vaginal discharge, breed her again. If she has a Inflammation of Eyes.-What can I

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