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Selecting and Curing Seed Corn

By PROF. J. F. COX

CORN is late throughout Michigan. Even though an unusually late fall results, there will be a scarcity in many localities of mature corn fit for planting next season. The two factors which will most largely determine the yield of next year's corn crop, are the selection and curing this fall of seed to be planted next season. The common practices of selecting seed corn from the crib or when husking the main crop are too costly to be continued. Such corn germinates poorly and will result in poor stands. The field selection and proper curing and storing of seed corn is the only way to secure good seed. It is extremely important that the highest yielding and most mature corn of this season's crop be selected before harvesting the crop, and properly stored to furnish seed for planting next spring.

It has been demonstrated that the corn plant is easily altered by proper selection methods. Yield, maturity, physical characteristics, and even feeding value can be changed within wide limits. Field selection and proper storing as compared with the ordinary crib selection method will usually increase the yield of ordinary corn varieties from seven to ten bushels per acre. Enough corn to plant twenty acres can be easily selected in a day's time by one man. With a seven-bushel increase per acre, the corn grower who plants twenty acres of corn will be rewarded with one hundred and forty bushels in his next season's crop, or at present prices \$140 a day for his labor in field selecting—admittedly a profitable day's work.

The proper time to field select seed corn is in late September or early October when the corn is mature and ready to husk. In making the selection the best way is to walk down the rows with a sack tied over the shoulders, or carrying a basket, plucking those ears which are considered desirable. Only ears borne on vigorous plants growing under average conditions, which have

reached proper maturity and size, which are carried at proper height, (about three and a half feet), and with tips slightly drooping, should be selected. The ears should then be properly stored and further selection for uniformity, type, and composition can be made through the winter or when making the germination test. By proper field selection, any farmer in Michigan

comes from the field contains from thirty to forty per cent moisture. In order to retain its vitality it must be rapidly dried so as to pass through the winter with a moisture content of twelve to fifteen per cent.

Immediately after harvest, corn for seed should be placed where it will receive free ventilation. No two ears should be allowed to touch. There are

two-by-fours and laths on which the ears may be laid.

Free Ventilation Necessary.

These hangers or racks should be placed in the attic or a spare room in the house, tool room, etc. A well ventilated room should be selected. The cellar is as a rule a poor place to store seed corn. During the early period of drying all windows should be opened so as to remove excess moisture.

Corn properly dried will not be greatly damaged by freezing but it is best to store where it will not be exposed to extreme cold.

Where large amounts of seed are to be handled, special corn drying houses are desirable, equipped with numerous windows or panels which will give free circulation of air, or stove to furnish artificial heat to hasten drying and prevent freezing.

This fall is the time to select Michigan grown corn for next year's crop. Corn from other states is often not well adapted to Michigan conditions. To insure a sufficient supply of good seed corn to plant Michigan's crop the coming spring, the concerted action of all Michigan corn growers in selecting and storing the best corn for seed this fall is necessary.

Some Seed Corn Facts.

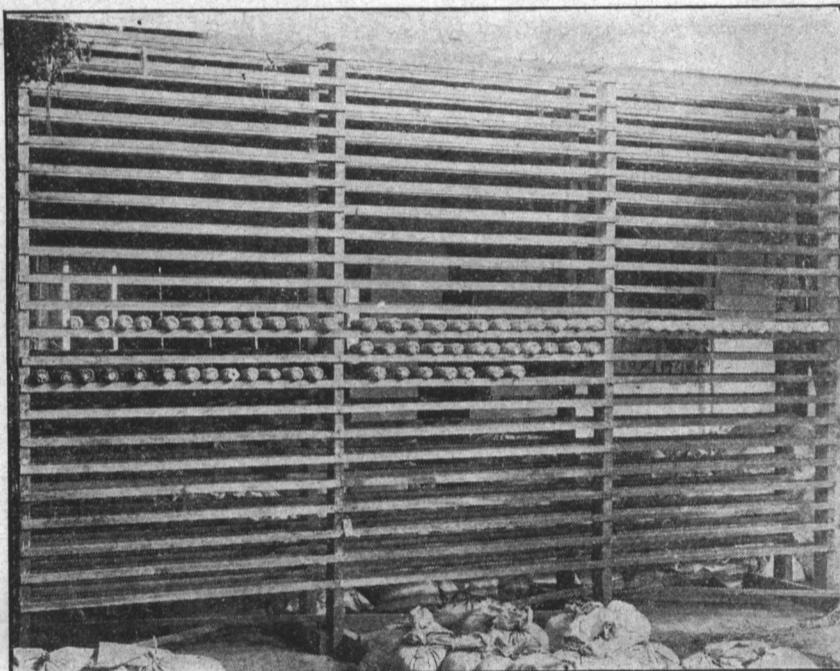
By selection in field during late September and October, the highest yielding ears can be selected.

About one corn grower in one hundred in Michigan selects seed corn in the field before harvesting the main crop. If every farmer field selects, a great increase in corn yield would result.

Seed corn of high vitality can only be secured by drying rapidly immediately after picking and storing in well ventilated rooms.

Good seed cannot be secured from the crib.

Good seed means a good stand. Planting poor seed results in frequent missing hills. It costs as much to cultivate a poor stand as a good one.



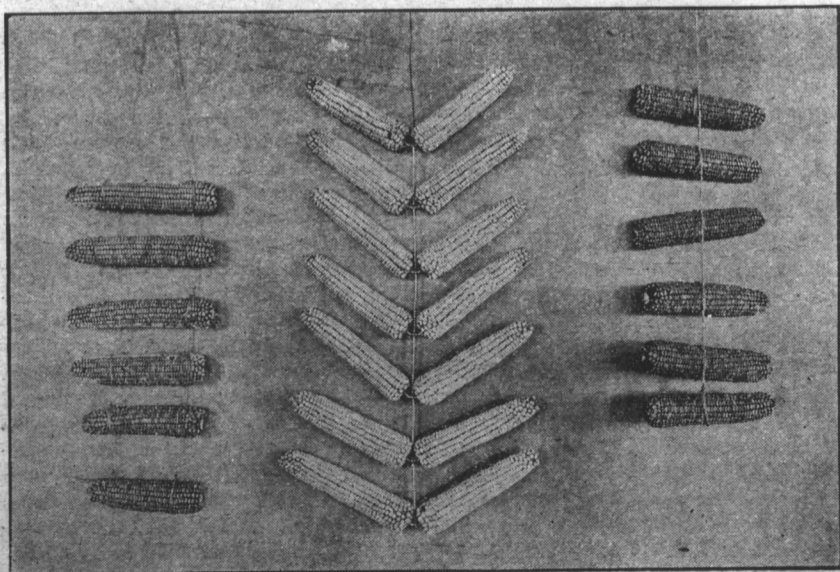
A Good Type of Corn Drying and Curing Rack, Made of 2x4's and Lath, on which the Ears May be Stored Until Tested for Germination.

has it in his power to markedly improve his corn variety.

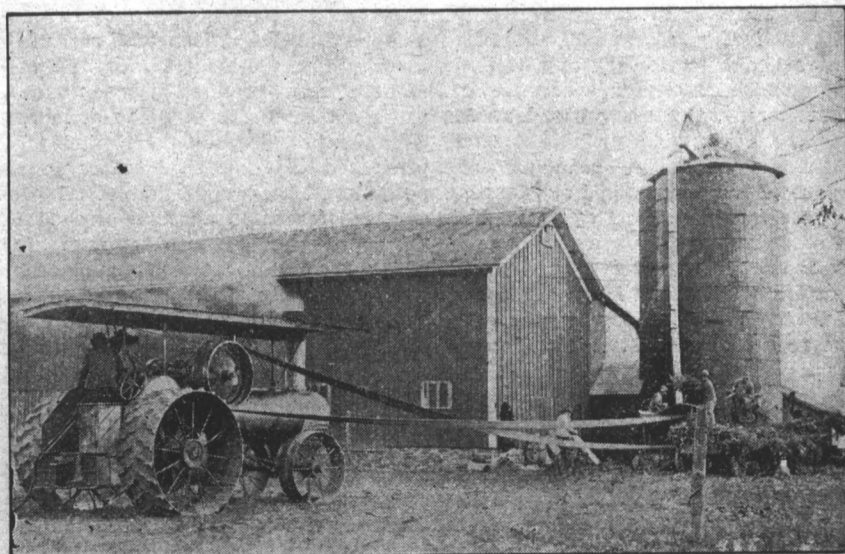
Curing and Storing Seed Corn.

Good seed corn can only be secured by thoroughly drying carefully selected mature ears before being exposed to freezing weather. In late September and early October, corn as it

many devices in common use, all excellent for this purpose: The ears may be strung on binder twine and hung from a rafter. Wire supports on which the ears are impaled may be made from woven wire fencing, or special seed corn stringers may be purchased. Racks may be easily constructed from



Convenient and Efficient Methods of Drying and Curing Seed Corn.



Well Selected and Well Cured Seed Corn Means Full Silos Next Year.

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DETROIT, SEPTEMBER 29, 1917



CURRENT COMMENT.

The Farm Labor Problem. Many and serious problems have confronted the farmers of Michigan during the period of the state's agricultural development, but of all the problems which have been met and solved, none have been more serious than is the farm labor problem at the present time. Having successfully survived the period of low prices for agricultural products during which it was difficult to make a respectable living for the farm family—to say nothing of an adequate labor income without resorting to the evil of soil robbery—the present day farmer finds himself confronted with a scarcity of available labor with which to produce the staple food stuffs so badly needed by the country and the world at large in the present emergency, and is discouraged in the attempt to avail himself of the financial reward which would result from the more compensatory prices now prevailing for staple products, were it possible for him to maintain maximum production under present conditions.

This problem is right now a very serious one, and a large number of farmers who have increased their acreage of staple crops in response to an appeal to their patriotism are now confronted with the problem of harvesting their belated summer crops with an inadequate supply of labor available, due to the drafting of their sons or hired men for army service. Still others, anticipating the demands of future drafts on available agricultural labor are already reducing their acreage of fall sown crops or planning on the conduct of their operations on a smaller scale next year.

So many protests with regard to the operation of the selective draft law in the taking of needed farm help have been received from Michigan Farmer subscribers that their publication has been impossible. Through various official and semi-official channels the farmers of the state have protested the application of the selective draft to farm labor, but without avail so far as general exemption is concerned. Observation of the application of the selective draft makes it appear that the policy pursued is the exemption of the indis-

pensable farm manager and operator, and the certification for service of the physically fit farm laborers and members of farm families not falling within the above definition as indispensable to the operation of the farm. Without doubt, this application of the selective service law is particularly hard upon the farmers of Michigan who must compete in the labor market with the highly developed manufacturing industries of the state which are now so largely engaged in the manufacture of needed war materials. This condition however, must be borne as one of the unavoidable hardships of war, since national war policies must necessarily be determined with regard to general, rather than local or special conditions.

Since all efforts to secure a modification of the general rule with regard to agricultural exemptions have failed except as above indicated, the more difficult farm labor situation brought about by the operation of the draft law must be met and solved in some other manner. In the event of the long duration of the war, it is probable that the government which has found it necessary or expedient to apply the draft to agricultural laborers as above noted will find it equally necessary to aid in the supplying of needed labor to operate the farms, at least in many sections of the country, in order that a maximum production of needed food stuffs may be maintained.

In the meantime, the farmers of Michigan will find themselves under the necessity of doing the very best they can under present conditions to maintain a normal production from their farms. This will necessitate a marked increase of man efficiency on every farm. The desired result cannot be accomplished by lengthening the hours of labor, which are already too long in many cases, nor is it desirable that it be accomplished as it has been done in European countries, by the performance of hard manual labor by our farm women.

The most promising method of overcoming the labor shortage is through the use of labor-saving devices for the accomplishment of every task so far as that is possible, either by the individual farmer where his operations are on a large enough scale, or on the community plan by the farmers of a neighborhood. The elimination of hand work will be more necessary than ever before, in order to increase the efficiency of man labor in crop production. The adoption of labor-saving methods in the planting, culture and harvesting of crops, and the feeding of same to live stock where used for that purpose will be more necessary than ever before. To this end, various plans will be tried out by the progressive farmers of all sections of the state, and wherever such experiences are successful, it should be considered a duty as well as a pleasure to pass their labor-saving ideas along to their brother farmers, in order that they may be used wherever conditions warrant their trial.

For this reason we desire every Michigan Farmer reader who has developed a practical idea with regard to labor-saving methods in any department of farm production or operation to report same for publication in our columns, in order that the idea may be presented to as many other farmers as possible. The cooperation of all progressive forces is urgently needed in the solution of this vexed problem, for which a solution must be found other than a general reduction of production, which would undoubtedly be the easiest way out for the large number of farmers who will be directly affected by the acute labor situation.

But patriotism and good business alike demand the solution of the problem on a higher basis. Let us devise ways and means by which man power efficiency on the farms of Michigan may be increased to an extent which will at least maintain if not increase the normal product of Michigan farms

for 1918, to the end that our obligation to the nation may be fully met, and that our farmers may participate in the fuller measure of prosperity which will be theirs if this problem can be successfully solved.

Marketing Problems. The marketing problem continues to be a perplexing one for very many farmers, even under conditions where it ought to be a simple proposition. This is particularly true with regard to marketing the season's wheat crop. With a basic price of \$2.20 established by the government, the differential value of Michigan grades of winter wheat likewise have a definite value in the markets in which they are normally sold. In the Detroit market for instance, No. 2 red wheat is worth \$2.19 and No. 1 white wheat \$2.17 per bushel.

With this condition prevailing, reports from the interior of the state indicate that farmers are being offered all the way from \$1.90 to \$2.08 per bushel for their current wheat crop. From threshers' reports, it would appear that there is considerable Michigan wheat which will not grade as above; in such cases the price for which the wheat should sell will depend altogether on its quality. With a fixed basic price for wheat at terminal markets and a fixed scale for profits prescribed for millers, it would appear that a similar fixed profit for local handlers would be equally just. In the absence of a ruling on this point by the Food Administration, wheat growers will be obliged to judge for themselves as to whether the price offered by the local dealer is a fair one under the basic price as fixed by the government.

From this price the cost of transportation is necessarily deducted, also a reasonable handling charge by the local dealer. The deduction of the freight to the terminal will enable the grower to ascertain the handling charge which the local dealer is imposing. If this charge be a just one, then there is no reason for holding the wheat crop for any advance in price, since there is no doubt but that the basic price as fixed by the government will be maintained throughout the year. If the handling charge demanded is too high, then growers will be warranted in withholding their wheat from the market until such time as this charge is reduced or they are able to market their grain at terminal points by pooling their shipments in a co-operative way.

Another marketing problem which is receiving much thought by growers at the present time is that of the late potato crop. Recent reports following the untimely frost in Michigan and other important potato producing states indicate that the yield will be considerably less than has been previously indicated. It is entirely probable however, that the late potato crop will be ample for the food requirements of the country. The Food Administration is aiding the situation by urging a larger use of potatoes in the dietary, and by seeking the cooperation of growers in the making of bulk sales of this commodity during the early marketing season to as many families as possible.

Under these conditions, and because of the transportation problem, as large a proportion of the late potato crop should be marketed during the late fall as will be taken for immediate consumption at a fair price. But when speculators show a disposition to absorb shipments for speculative purposes, growers should withhold supplies accordingly. The more directly this product can be moved from producer to consumer, the more healthy will be prevailing market conditions.

There seems little doubt that a large early movement of potatoes will occur at prices which will be compensatory to growers, in which case both producers and consumers will profit by an early movement of the crop in consid-

erable volume. Commercial growers will, however, do well to hold a considerable part of their crop for later distribution, in order to avoid a congested early market and a large absorption of potatoes by speculative dealers.

Production Costs. In accordance with the spirit of the times when it is generally conceded that farmers as well as manufacturers should receive a price for their product which represents the cost of production plus a reasonable profit, serious efforts are being made to study production costs in various lines of agricultural production. While the government, through the Food Administration, has fixed a basic price for wheat for the current year, it is not anticipated that similar action will be taken with regard to other staple food products, but that government purchases of food stuffs will be made on the basis which will cover the cost of production plus a reasonable profit to the producer. In view of this fact, it has been deemed desirable to make the best possible estimate of production costs under present conditions along various lines.

In addition to the commission now studying the cost of producing dairy products, another commission has been asked to consider the cost of growing beans and potatoes in Michigan. This commission which is meeting at the Agricultural College this week, is composed of the following well known gentlemen: Representing bean and potato growers, Hon. Jason Woodman, Hon. A. B. Cook, John Bale and Jotham Allen; representing the business interests of Michigan, R. C. Rothfuss, Joseph H. Brewer and Judge Frank Williams; representing agricultural organization, Hon. Chas. B. Scully, Nathan Simpson and John C. Ketcham.

The investigations of this commission should be of practical value to the organized bean growers of the state, who will meet in Saginaw on October 3, as announced in another column of this issue. Notwithstanding the pressing seasonal farm work, every bean grower in the state who can possibly do so should attend the organization meeting at Saginaw. Producers of food stuffs cannot become too familiar with cost figures or improved methods of arriving at accurate cost estimates.

ATTEND THE MICHIGAN BEAN GROWERS' MEETING.

The Michigan Bean Growers will meet at Saginaw, Wednesday, October 3, at 11:00 a. m., at the Court House, or a hall near thereto. This meeting will be of the utmost importance not only to the state but to the bean growers of the United States. The National Food Administrator, Mr. Hoover, advised the bean growers that the United States would not fix the price of beans, directly, but wanted the growers to have the cost of growing plus a fair profit. The buyers have no incentive to speculation as this is forbidden under government restrictions. The opportunity is at hand for agriculture to be placed on a business basis. The Cost of Production Committee, headed by Hon. Jason Woodman, assisted by able representatives of growers and business men interested in farming, met September 25 at the Agricultural College to consider the growing costs of beans and potatoes. The report of this committee will be placed before the growers for their action. The United States Food Administration has made recognition of A. B. Cook as the national representative of the Bean Growers' Association. Alex Pollar, of Saginaw, is secretary of the Michigan Bean Growers' Association. Bean growers and representatives of agricultural organizations are asked by all means to be present. The Michigan organization of bean jobbers will meet at the same date. Government orders for

(Continued on page 268).

Utilizing Cut-Over Lands

AN interesting exhibit at the State Fair was a carload of yearling ewes entered by the Northeastern Michigan Development Bureau, which are shown in the accompanying illustration. These ewes were exhibited by the Development Bureau as an object lesson regarding the value of the cut-over lands of our northern counties for sheep grazing purposes, and attracted the attention of many fair patrons who are interested in live stock production in general and sheep husbandry in particular.

The ewes shown were part of a band of 9,000 head purchased in Oregon last spring by the Interstate Live Stock Company, who run them through the summer on a ranch located in southern Cheboygan and Northern Otsego counties. This ranch consists of approximately 4,500 acres of cut-over hardwood and Norway pine land which had been burned over and seeded by nature to native grasses, this range being well watered by springs and a flowing stream. The ewes were of the grade Lincoln type, but had wintered poorly as lambs and came to the Michigan pasture thin in flesh and weighing only sixty-five pounds. The load shown were cut out from the band without sorting and represented an average of the band as they appear now, in excellent condition and having made a most satisfactory growth.

This is but another, though valuable object lesson illustrating the possibilities of sheep grazing on the cut-over lands of Northern Michigan. In addition to the profit derived from the sheep the land owner reaps another profit due to the browsing habit of the sheep, since the lands can be much more cheaply cleared after being pastured with sheep for a few seasons. So apparent has been this advantage that some large holders of cut-over lands offered free range for the pasturing of sheep last spring. There are some millions of acres of such lands available for such use in Michigan, which can be purchased cheaply or leased for a nominal rental for grazing purposes, and consequent profitable opportunities for stockmen to follow the example of the owners of these sheep in bringing range-bred yearlings into the state for distribution to farmers in the fall after pasturing them on cut-over areas during the summer.

The value of a flock of sheep on the average farm is now being appreciated by many farmers, especially those who formerly maintained small flocks but have disposed of them in recent years. A glance at the live stock quotations from any market will suffice to give farmers who have never been interested in sheep production an idea of the advantage which would accrue to them from having even a small lamb crop to feed out or sell, while the wool product at present values will pay the cost of keeping the flock for the entire year.

This is particularly true of the small flock kept on the general farm, which can be maintained largely on pasture and forage which would not be otherwise fully utilized, and would at the same time perform a valuable service in cleaning up the fence corners and waste places of brush and briars and eliminating from the pastures some of the noxious weeds which are constantly increasing in number on our Michigan farms.

The flocks of the state have become so depleted that native foundation stock is not available on the farms of the state in sufficient quantities to provide even a small flock of breeding ewes for more than a small proportion of the farms where the maintenance of such a flock would be profitable under present and indicated future conditions. There will be isolated opportunities to purchase breeding ewes from shipments coming in from the west; but for a main dependence in getting

foundation stock of either sheep or cattle, the plan outlined by the Department of Agriculture and the Food Administration for distribution of breeding animals on the community plan through the county agents promises greater results than any other plan advanced, if generally acted upon by the farmers of Michigan and the country. If in need of more breeding stock take the matter up with your county agent at once. The expressed demand of the farmers of the state and country in this direction will be quickly and economically satisfied by the government machinery which will be at once put into motion.

PERMANENT SOIL FERTILITY.

Many are becoming very much interested in the permanent up-building of the soil and in making the farm pay better. So a few suggestions on ground limestone and ground phosphate rock and ways of handling them might be of some benefit at this time.

Realizing a few years ago that we could not make any very permanent improvement by the use of hydrated lime and commercial fertilizers, we began the use of limestone and phosphate rock.

After using commercial fertilizers of the best grade, like bonemeal and bone meal and potash, for twelve years we believe, while it was a good invest-

ment, its help was only for the one or two crops and it did not leave the ground in any better condition than before its use.

For four seasons we have been applying each year from one to two carloads of limestone and one carload of phosphate rock of the highest grade and also the finest ground.

We sow from one and a half to two tons of limestone per acre and find it better to put the limestone on the ground after being plowed and worked down. It gives better results the first year this way, although it is harder for a team to handle the lime sower.

We live about a mile from a railway station and by sending for one carload at a time, and having it come in bulk in a box car of about thirty to thirty-five tons, we handle it in grain boxes, drawing direct to the field. Generally the car can be unloaded and lime spread on the field in two days, by using three wagons, one in the field, one on the road and one at the car. One team and man or boy does the hauling, a team and a man in the field the spreading, while a man at the car loads the wagons as they are left there.

The limestone is handled with small furnace scoops or shovels. A two-ton wagon load will fill the lime sower

about five times. A sower eight feet wide, holding about eight hundred pounds will sow forty rods and back, and four trips will make one acre, just about the right amount to sow.

A lime sower that spreads direct from the axle that runs through the box is good enough. The axle runs in four-inch hardwood boxes. The common mower wheels can be used and the simpler the spreader the better.

The phosphate rock has been put on the ground at the rate of 1,500 to 2,000 pounds to the acre. This rock contains fourteen per cent phosphorus. The rock also contains a large amount of calcium carbonate which will become available as fast as the phosphorus becomes available.

The phosphate rock is put on clover sod direct from the car if possible, using about a ton to the acre and spreading manure on the field before or after sowing the phosphate rock.

If there is not enough manure let the clover grow and plow down with the phosphate rock. By putting on one ton per acre every four or five years it will make 280 pounds of phosphorus at every time of the crop rotation and would double the amount of phosphorus in the top six inches of the ground at the end of the fourth rotation.

Better returns the first season will come if you double disc the ground before plowing. Then plow shallow and work with an acme harrow or disc, cutting the ground up to a good depth.

When put on wheat ground this way it will not only benefit the wheat, but

will help the stand of clover for the next season.

The average top soil in our oak, birch, maple and prairie soil contains from 1,100 to 1,200 pounds of phosphorus.

There is about twelve pounds of phosphorus taken out of the ground in an average wheat crop. You will see that the 280 pounds of phosphorus in a ton of phosphate rock will last several years.

The phosphorus in the acid phosphate will cost the farmer much more than it will in the phosphate rock, and after using the acid phosphate the soil becomes more acid than it was before as the calcium or sweetening power of the phosphate rock is destroyed by treating it with sulphuric acid.

It seems a poor investment to use something that will benefit the crop just for one year, or to stimulate the ground at the expense of the succeeding crops.

By using the phosphate rock with the clover or manure the soil will become richer instead of poorer. A ton of phosphate rock per acre will help the clover to grow and in that way build up the ground for future crops.

Three things that are absolutely necessary for the permanent improvement

of upland timber and prairie soils are limestone to correct the acid in the soil, phosphorus to supply an element in which the soil is more or less deficient, and decaying organic matter which comes largely from clover or other legumes taking nitrogen from the air. Without limestone clover can not be grown satisfactorily when soil becomes acid, and without phosphorus all crops will ultimately fail and organic matter cannot be produced.

Kalamazoo Co. W. F. Cox.

Editorial Note.—The Ohio experiments described by Prof. Williams at the recent wheat congress and published in a recent issue indicate that acid phosphate is effective in building up permanent soil fertility as well as in stimulating better grain yields. Phosphorus is undoubtedly a needed element of plant food on most Michigan farms, and its use in either of the above mentioned forms, under proper conditions, will prove profitable.

Now that we are about to dig our potatoes, we should look forward to next year's crop and prepare for it by selecting the best seed possible for the planting. This is the time that I lay my seed by and, thinking that it is worth passing along, I give herewith my method.

SORTING POTATOES FOR SEED.

When I am cutting the seed for planting I throw aside all the imperfect tubers and those which are hollow or black hearted, until I have enough seed from perfect tubers to plant the first half of the patch; then I use these imperfect ones in the rest of the field. When I dig my potatoes in the fall I sort my seed from this first half of the field.

I dig this part of the patch by hand, throwing two rows together. When I find a hill that is especially fine I throw it back into the hole from which I dug it, and when the potatoes are picked up these are picked separate and put aside for next spring. In this manner I can sort for whatever kind of potatoes I want to raise. My rule is to take the hills that produce seven or eight nice, smooth tubers and the largest that I can get.

Of course, it isn't necessary to sort over half of the field after we get our potatoes to producing just what we want. I have followed this method for five years and I find that I can use about one hill out of five for seed. I can see, also, that I am making some headway toward eradicating the imperfect tubers; last year my potatoes looked like they had been made to order; and, of course, I am looking for a model crop this year.

Potatoes can be bred up the same as cattle or any other live stock, and it can be done just as easily; also, it goes without saying that it abundantly pays to do it.

Otsego Co. G. F. De La MATER.

THE FERTILIZER SITUATION.

The Soil Improvement Committee of the National Fertilizer Association makes the following statement regarding the character of the fertilizer which is now being offered for sale.

"The impression seems to prevail among agricultural experiment station and fertilizer control officials, also among county agents, that the limitation put on shipments of acid phosphate by fertilizer manufacturers is due to a desire on their part to force farmers to use complete fertilizer or ammoniated super-phosphates. To correct this erroneous impression we make the following statement of facts to show that this is not the case:

"Under normal conditions the industry has ready on June 1—the usual close of the spring shipping season—approximately thirty-five per cent of fall requirements of fertilizer. On June 1 of this year, owing to the unusually heavy spring demand and manufacturing difficulties during the winter and spring, warehouses were absolutely



Sheep from a Northern Michigan Cut-over Pasture, Exhibited at State Fair.



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bare of stocks, leaving only three and a half months' time in which to manufacture, cure and ship the fertilizers required for this fall's wheat seeding—and this under the most trying and difficult manufacturing and transportation conditions that have ever been known.

"At the beginning of the selling season for the coming wheat seeding, it appeared that the demand for acid phosphate might be so large that the amount the industry would be able to furnish would not cover the demand. It has therefore been necessary, as a matter of equity to all dealers, to put a limitation on the amount of acid phosphate sold to any one dealer. Indications at the present time show that the majority of dealers have taken less of acid phosphate than the amount offered.

"If the above limitation had not been made, the industry could not have furnished the other grades of fertilizer demanded by the consumer. Furthermore, it was not possible for manufacturers to increase their production of acid phosphate, as this requires more time to manufacture and cure than does the manufacture of mixed goods. Indications at this time are that there is a greater demand for the mixed fertilizers than the industry will be able to supply."

RYE AS A FARM CROP.

As a farm crop rye is not generally appreciated at its full value. As a crop for human food it comes second beside the wheat crop. The principal objection to rye raised on the same farm as wheat, is the liability to get mixed with the wheat and injure the sale of that cereal for milling purposes.

The average yield per acre of rye for the whole country is about the same as wheat, about fifteen bushels per acre. It is believed that rye is capable of outyielding wheat under the ordinary and unfavorable conditions. Wheat requires more fertile soil and better culture for an average yield, therefore if one has a rather thin soil, lacking somewhat in fertility, rye is the safer crop to sow.

Rye is hardy and is capable of withstanding the rigors of severe conditions in winter and is better to sow on fields exposed to west and northwesterly winds. It also endures well the freezing and thawing weather in the spring.

Wheat must be sown early enough in the fall to get a good growth of top before freezing weather comes, while rye, if sown late in the fall, will come forward, endure the winter and produce well. For that reason those who may, for some reason, get belated in getting wheat sown in what is termed the proper season, can substitute rye for the late sowing, and feel sure of getting a good crop.

Rye succeeds well on sour soils and can, for that reason, be used in a rotation with corn and potatoes where wheat and clover can not be produced. For this reason those who think they can not raise wheat—have not wheat land—as they term it—can sow rye and confidently expect a paying crop.

At the present time when there is a desire to do all that it is possible to do to raise bread material for home use and for the export trade, it will be well to give rye, as a crop, due consideration. It is not possible to overdo the rye business, because the export demand will take all that can be produced at a price near, if not equal, to that paid for wheat; for rye bread is popular in the European countries and the peoples in those countries will be in need of all that we can raise for many years to come.

If it were not for the great demand for rye for bread purposes, it is well to give it consideration as a grain feed. Rye and oats ground together, equal parts, makes an excellent feed for the work horses. The same makes an excellent feed for growing pigs, and can

be used to good advantage in connection with pasture feeds, in the production of the very popular bacon pork.

For very many reasons it will be well to utilize the odd corners where nothing else is being produced, in raising rye. It can be depended upon if sown any time during the month of October. If seed of the improved varieties can be secured it will pay to use it; if not, get the common rye and sow it.

Wayne Co.

N. A. CLAPP.

FARM NOTES.

Size of Drain Tile for Laterals.

Will you please advise me as to what size tile to use when laying the parallels, which will be about 40 rods long, 80 feet apart? Also, are cement tile adaptable to Michigan clay soils, especially Bay county?

Bay Co.

A. O.

No mention is made in this inquiry regarding the fall in the grade at which this tile will be laid. With tile laid with a fall of three inches per hundred feet, a three-inch tile will drain five acres, where the length of the laterals is less than one thousand feet. The carrying capacity of tile decreases in proportion to any reduction in this desirable grade. If the grade is reduced by half, the carrying capacity of the tile is decreased at least one-fourth. The less the fall or grade available for the drain, the greater should be the care exercised in laying the tile true to grade, and the larger the carrying capacity of the drain if the best results are to be secured.

Under normal conditions the three-inch tile would be large enough for laterals of the length and distance apart noted. If there is very little fall, the size of the tile at the lower end of the laterals could be increased if desired, although this should not be necessary if sufficient care is taken in laying the drain.

Cement Tile.

Cement tile have not given uniform results in use in this state. Numerous instances have occurred in which the tile disintegrated entirely. On the other hand, we have seen cement tile that have done good service in the ground for many years and are still in as good condition as when laid. Investigations by the experiment station chemist reveal the fact that in most instances the failure of cement tile to last while in use was due to poor methods in their manufacture and curing. If reasonable care is exercised in the making and curing of the tile to secure a first-class article, they will give satisfactory service on most Michigan uplands. For muck lands they are not generally considered desirable.

Exterminating Noxious Weeds.

I have a field of well manured sandy loam that is literally infested with horse nettle, bluegrass and smartweed. The field is now drilled to corn and soy beans, but the ordinary methods of cultivation has had but little effect on the weeds. I wish to soon sow rye among the corn. Can I seed this field to some kind of grass next spring to use for pasture when the rye comes off that will assist in getting rid of these weeds?

Cass Co.

G. P. W.

One of the very best methods of getting rid of persistent noxious weeds, such as are mentioned in this inquiry, would be to fit this land thoroughly and sow same to alfalfa. If the land is in a reasonably good state of fertility, this could be accomplished by giving it a liberal application of lime and sowing the alfalfa alone or with a light nurse crop of barley next spring. If a good stand is secured, the frequent cutting of the alfalfa will effectually discourage these weeds as they appear from the seeds which are near the surface of the soil.

It is quite impossible to sow any combination of grasses which will smother out weeds of this character in pasture, since the grass will be grazed by the live stock, giving the weeds the advantage in competition for soil moisture and plant food.

Community Cooperation In Dairying

MUCH has been said and written along almost every line on co-operation. Business interests of all kinds are organized and have been for years. The farmers of our country have been the last men to recognize the necessity of organized effort; and they, of all other classes, need this one thing more than any other class of people. Individually we can do little; collectively we can do a great deal. The keynote of the whole situation today is organization along co-operative lines.

The particular cooperative, organized effort that I wish to deal with in this article is a breeder's association. This particular association is known as the "Leer Guernsey Breeders' Association." Leer is a community that is situated in the northern part of Alpena county and is made up of good, thrifty farmers. This association was organized eight years ago by W. F. Raven, Live Stock Extension Specialist for this state. (I wish to say right here that if Mr. Raven had not have given his untiring efforts to the live stock interests of Michigan, we would not have the good live stock we now have in dozens of sections of this state). This association started out with about fifteen members; they now have thirty-four men belonging to it who are breeders of good dairy cattle.

The Association Method.

Only pure-bred sires are used in the association, and many good individuals have found their way into this community. Negotiations are now being made to purchase a bull that is out of one of the best Guernsey cows in the state. If this bull is obtained, he will undoubtedly raise the standard of their stock materially. The members of the association are divided into four groups, each group keeping a bull. Every two years the bulls are changed from one group to another, thus making it possible to use each bull eight years without inbreeding. This not only gives these people the use of these bulls for a long period of time, but it lessens the expense to each breeder. He has the use of good sires at a minimum cost.

By this method of cooperative breeding, the value of the live stock in this community has been increased over one hundred per cent. Several high-grade two-year-old heifers have been sold this last spring and summer for \$125 to \$150 each. Eight years ago any cow of that age in that section could have been purchased for \$30 to \$35. Add to this the amount the same quality of animal has increased in value during the past eight years and we still have a safe margin over the one hundred per cent.

Improvement as Result of Cooperative Work.

Practically all the old native cows are gone out of the community and have been replaced with good high-grades. The number of cows kept has also increased. At the present time there are over three hundred cows kept by the thirty-four members of the association. In a very short time there will be plenty of good grade cows and heifers for sale.

The next thing is to let men know, who are looking for Guernsey cattle, what is to be found in this section. One way these people are doing this is by holding a local dairy fair each year. This was started in August, 1916, when the first "Leer Guernsey Breeders' Fair" was held. Thirty-seven animals were exhibited. The judging was done by H. E. Dennison of the Dairy Department of the M. A. C. The fair as a whole was such a success that it was decided by the association to make it an annual event, extending the time from a one-day fair to a two-day fair, the judging to be done the first day and a live stock sale held on the second day. Agreeable to this plan, on August 8-9 of this year the second an-

nual fair was held. Thirty-four head of cattle were exhibited. The judging was done by J. A. Waldron, Extension Specialist in Live Stock. Due to the fact that there was no surplus stock this year, the sale for the second day was dispensed with. Instead, C. B. Cook, Assistant State Leader in county agent work, delivered a very able address to the people attending the fair.

Members Are Enthusiastic.

There was one very noticeable fact when this year's fair was compared with the one held last year, that was the improvement in the quality of the cattle exhibited. Also, it was gratifying to note the improvement of the two-year-old class over the aged cow class. The members of the association are now looking for some good, pure-bred heifers. With the introduction of the pure-bred females there will be still greater improvement. At the present time there is being formed a cow-testing association. With the cow-testing association to weed out the unprofitable producers, the best pure-bred bulls that they can get and the introduction of pure-bred females, this community is bound to be heard from as a Guernsey breeders' section. What this community has done, others can do. Let us have more organizations of this kind and put the live stock industry of this state on a higher plane than it now is.

Alpena Co. DAVID WOODMAN.

FILLING THE SILO.

Distributing and packing silage in the silo is frequently neglected. Unless the blower has a distributor attachment there is a tendency for the cut corn to fall in one place in the silo. If the silo is filled in this way, the finer and lighter portions of the stalks are frequently blown to the outside and the heavier parts, ears and butts of stalks, are deposited in the center, thus causing an uneven distribution of grain and stalk, and a consequent uneven quality of silage. Uneven distribution is frequently the cause of soft places and air pockets, which later result in spoiled silage. When the lighter portions are blown to the outside they do not pack well and the silage spoils near the wall. Such spoilage, which really results from careless filling, is often attributed to the silo.

Packing the silage is equally as important as distribution, according to S. T. Simpson of the University of Missouri College of Agriculture. Thorough packing requires plenty of men and persistent work. Good silage can be had only by uniform packing and uniform distribution of the corn. The entire surface, especially the outer edge, should be packed firmly. The best help obtainable should be stationed in the silo. That is where the silage is ultimately made, and success or failure depends on the ability of the men to distribute and pack the corn.

The large cutter with the corresponding large capacity frequently saves money in filling the silo, but it may result in a waste of the storage capacity of the silo. If the silo is filled rapidly the corn has little time to settle. Slow filling allows the corn to settle as it is stored, with the result that more corn can be placed in a given space. To overcome this disadvantage of rapid filling woven wire may be extended over the top of the silo, thus increasing its capacity until it can settle. Patent roofs are made which serve the same purpose. Refilling in two or three days will accomplish the same end.

Corn cut at the proper stage should require no additional water. When the crop has become too dry, water will add to the keeping qualities and palatability of the silage. Water may be run into the blower or directly into the silo. In the latter case it must be well distributed. Silage made from fodder requires large quantities of water.

Save Your Foodstuffs

You may devote your whole cellar to the storage of fruits and vegetables this winter if you have a Caloric Pipeless Furnace. They will keep perfectly, for this furnace heats your house, and not your cellar, because all the heat goes up into your living rooms. Our triple casing keeps the cellar cool. Your home will be warm no matter what the weather, its air pure and clean and your fuel bills will be less. That's an absolute guarantee that goes with the



The Original Patented Pipeless Furnace

Think of this—no long pipes to waste heat; no holes to cut in your walls for them; no big bills for registers and warm air ducts; no carrying coal to three or four stoves; no dirt and ashes—just complete comfort in every corner of your home.

And all this for a surprisingly low cost. It solves the question in your home, for it can be applied to an old house as well as a new.

Our engineers will tell you truthfully whether your house is adapted for pipeless heating. If they say it is, we guarantee that you will be warm and comfortable and also

Save Your Fuel

—at least 35%, perhaps more—in the difference compared to any other heating system.

That's a big promise. Let the Caloric dealer prove it to you. We've put the reasons in a book that is revolutionizing house heating. We call it "Progress," because it tells of the new and better way. Then over a thousand of our delighted customers have written another book that conclusively proves all we claim for the Caloric Pipeless Furnace. They will interest you greatly. Send a postcard for them both.

The Monitor Stove & Range Co.
2028 Gest St. Cincinnati, Ohio



USE NATCO DRAIN TILE

Farm drainage demands durable tile. Our drain tile are made of best Ohio clay, thoroughly hard burned—everlasting. Don't have to dig 'em up to be replaced every few years. Write for prices. Sold in carload lots. Also manufacturers of the famous NATCO IMPERISHABLE SILO, Natco Building Tile and Natco Sewer Pipe.

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When to Harvest Apples

TOO many people think that apples must be picked before they are ripe, for storage—that they will ripen up well and keep longer. But this is a mistake.

Apples, to keep well in cold storage or any other way, must be well ripened before they are picked. They go on with the maturing process after they are placed in storage, but the green apple will mature in the green stage, so that its green color and flavor will be only more pronounced than when picked fresh. It also shrinks, and loses much of its food value, while the reverse is true as to the ripe apple. It doesn't shrink but matures naturally, develops a fine flavor and color, and is a ready seller at the top of the market.

Ripe Apples Keep Best.

An apple that is dead ripe and about ready to drop is much better for storing than a green apple. It will keep just as long and will sell for twice as much as the green one. But, of course, it is advisable to pick apples before reaching this stage.

The fully developed color is one in-



Boys Make Good Pickers.

dication of ripeness. A green colored apple will never color up well while on storage. But it will develop an undesirable green color and become permeated with a greenness sufficient to make it unsalable. But if the apple is fairly well colored before it is picked, it will go ahead and color up naturally. A rich, shiny color shows that the apple is fully developed, that it contains the greatest possible amount of nutriment, and is fine flavored and digestible.

People do not buy finely colored apples simply because they look nicer than others, but because they are better and worth more. They have a greater food value than poorly colored apples.

An Indication of Ripeness.

Another indication of the proper stage of ripeness for gathering apples is when they break off easily, taking the whole stem with them. No apple should be picked for storing purposes that is hard to break off. But when they break off readily and easily, and when the coloring is fairly well developed, they may safely be gathered and placed in storage. When such is the case you can rest assured that you will not have to sell at the low quotations when placing the apples on the market.

Such things are much safer guides than certain exact times each year. The exact date will depend upon the season a great deal. One year we had to pick Grimes' two weeks earlier than we had ever picked them before. A late, dry season had caused them to ripen up very quickly. At another time we had to wait much longer than usual upon the Winseaps because some late rainy weather kept them growing far beyond the regular period. But we had something worth while when they did

get matured. So it isn't a matter of dates so much as a question of the condition of the fruit. It should be gathered at the right stage.

Indiana.

E. GREGORY.

PESTS OF THE BERRY PATCH.

Yes, the busy days of berry picking are over—the last bush has been stripped, the last cover tacked on and the last crate shipped. Many, as they see the tempting fruit seem to think that all we have to do to coin money is to set the plants and harvest the fruit. They little realize the amount of work and watchful care that small fruits require in order to be profitable.

First comes the strawberry, with its diseases and insect pests. It is often subject to blight which is injurious to both plant and fruit. It first shows itself upon the leaves in reddish, purple spots, which soon turn lighter colored and finally white. Upon these spots a spore is formed which spreads the disease during the summer, while in the fall and winter a form is produced which infects the new leaves the following spring. Thus the fruit is deprived of its nourishment and in some instances crops have been ruined. But if one starts a field with good, healthy plants and sprays with Bordeaux mixture there is generally but little trouble.

The Worst Pest.

The worst insect pest is that nuisance of the farm, the cutworm, which is often very destructive as it eats off the roots and crown in feeding. The roots are often attacked also by the white grub and the strawberry root borer. The latter bores into the crown and down through the heart into the roots usually killing the plant. The best remedy for this pest is to change the location of the bed often; not raising more than two crops without planting on new ground.

The most common diseases of the raspberry and blackberry are anthracnose and rust. The insect pests are many, among which are the tree cricket, the red-necked agrilus and the raspberry saw-fly. The crickets weaken the canes by making longitudinal punctures filled with eggs for several inches down the canes. These eggs are long and are often mistaken for grubs.

The best and surest way to get rid of them is to cut and burn the canes containing them.

The saw-fly I have never seen; but it is described as a light green slug which works on the under side of the leaf and resembles it so closely that one has to look carefully to detect them. They cut irregular holes in the leaf, often nearly perforating them. Hellebore or the arsenites are recommended as remedies.

When one stops to consider all the numerous diseases and pests with which the fruit grower has to contend, it is not surprising that so many make a failure of the business. "Eternal vigilance is the price of success." The one who masters all difficulties and works understandingly reaps a rich reward, while the careless and consequently discouraged one is ready to declare that there is no money in fruit growing.

JENNIE WILLSON.

STANDARD SIZE FRUIT CONTAINERS NECESSARY.

Under the authority of the federal law known as the Standard Container Act, the secretary of agriculture has just issued the regulations fixing the tolerances which will govern in the administration of that act. The act goes into effect on November 1, 1917.

It prescribes three standard sizes for "Climax" baskets for grapes and other fruits and vegetables—two quarts, four quarts, and twelve quarts—and fixes the dimensions for each; it establishes the dry half-pint, dry pint, dry quart and multiples of the dry quart as standards for containers for small fruits, berries, and vegetables, and fixes their capacity in cubic inches. On and after November 1, 1917, it is unlawful to manufacture or sell for shipment or to ship in interstate commerce, either empty or filled, baskets or containers that do not conform to the requirements set forth in the law. Containers which are not up to the standards can not be used in interstate commerce even though they are marked "short package."

Since a good deal of the harvesting and marketing season is still ahead before the law goes into effect, the department suggests that manufacturers adopt the standards at once, and that stocks of packages which can not be used after November 1 should be fully utilized before that date. Package man-

ufacturers and dealers are invited, if they desire to have their packages examined and tested, to ship them to the Bureau of Markets, United States Department of Agriculture, Washington, D. C., for such tests. The Bureau will inform the sender whether the container complies with the provisions of the act. A set of instructions and standard dimensions will be sent to all who request it of the Bureau of Markets.

TROUBLE DEPARTMENT.

Setting Fruit Trees.

Is it a better time to set out fruit trees in the fall than in the spring, and should they be mulched?

Livingston Co.

M. J. M.

It is generally conceded that the spring is the best time for setting fruit trees, and spring planting is the most common practice in this state. The fall planted tree often has to be stripped of its leaves in early fall by the nursery man in order to fill the fall



Strawberries Have Few Diseases.

orders. Trees so stripped do not properly harden up.

Another objection to the fall setting of trees is that the trees are loosened by the winter winds unless the trees are well banked up. Then when the growing season starts they are likely to dry out. On the other hand, if one is assured properly ripened trees and banks them firmly, he often gets choicer trees and the earth is well packed around the roots, which insures a good and early start in spring. If properly planted fall set trees do not have to be mulched.

If you order trees for spring setting place your order early as the nurseryman can then give you better trees and service.

The Culture of Hops.

Would you please tell me of the culture of hops for commercial purposes? Kent Co.

F. H. C.

The culture of hops requires special study, and therefore, it is difficult to give any suggestions of value in a short article.

Briefly, hops are grown most successfully in temperate zones where there are no sudden changes of temperature. The plants need rich, heated and open soil, and plenty of moisture. The ground should be prepared to a depth of at least twenty inches by subsoiling, and should be made ready as soon as possible in spring.

In America the plants are usually set from six to seven feet apart each way in holes which are made about twelve inches wide and deep. In setting the plants a spadeful of compost should be thoroughly worked into the soil. If the sets are not planted as soon as taken from the ground, they should be thoroughly watered before being planted. After planting, the buds of the sets should be in a vertical position. Thorough culture and the training of vines on posts are essentials of good hop culture. On account of the great variation in crop and marketing conditions, it will be impossible for us to give you any advice on this phase of hop growing.



In These Days of Labor Shortage the Whole Family Gets Busy.

Your tractor is only as good as your engine ←

Correct lubrication will extend the life of the tractor as well as insure the maximum power delivery of your engine.

If unsuitable oil is used, you are inviting premature depreciation of the whole tractor. In other words, the investment of a few dollars a season in a lubricant manufactured especially for tractor service will add to the profits on a season's crop. High priced oils do not necessarily mean they are suitable tractor lubricants.

We Recommend for Cylinder Lubrication of Tractors

STANOLIND **Gas Engine Tractor Oil**

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It is an oil of great durability and maintains the correct viscosity under extreme heat conditions. It lubricates thoroughly even the remotest reciprocating surfaces, reducing friction to a minimum.

It is equally efficient for stationery gas engines as well as for lubricating the bearings of all types of harvester machinery and heavy gearings of tractors.

POLARINE HEAVY

WHERE GASOLINE FUEL IS USED

WHERE HIGH SPEED CONDITIONS OBTAIN, REGULAR
POLARINE GRADE IS RECOMMENDED

NOTE—Our recommendations are based on extended and exhaustive tests under actual field conditions.

Write to our nearest agency for specific recommendation of correct lubrication of your tractor.

Standard Oil Co. (Indiana) Chicago, U.S.A.

Manufacturers of Special Lubricating Oils for Leading Engine Builders and Industrial Works of the World.

(Continued from page 262).
beans are distributed through W. J. Orr of Saginaw. Mr. Orr desires the co-operation of growers. The present price of beans fixed by the United States for military supplies does not apply to the crop of 1917.

JAS. N. McBRIDE,
Michigan Director of Markets.

MARKETING THE POTATO CROP.

The planting of potatoes was urged to afford an adequate food supply and the response by growers was in accordance with the request. The season has apparently provided a fair to large crop. There is, however, no need of growers becoming panic stricken and putting their crops on the market at a price below cost. Mr. Hoover, the National Food Administrator, has said that agriculture has many times been "sweated" and not adequately paid for food supply. The present wish and plan is to see that the cost of potato growing plus a fair profit is had in the sale of the crop.

The following plans are submitted at present, viz., that one-third of the potatoes be shipped at time of digging, one-third put into storage with federal reserve loans where needed, and the remaining one-third stored at home and distributed throughout the remainder of the year. Storage houses on the railroads should be leased or built. The potatoes graded under direction of county agents and storage receipts used for loans. Later plans will be promulgated as to this when given out by the federal reserve banks, at present consult local bankers. Some plans are under way for large city buying and storage, at harvest time. Send to the United States Department of Agriculture for Bulletin No. 847 on "Potato Storage." The Michigan Potato Commission headed by Jason Woodman met September 25 to consider the acre cost of growing potatoes. From this, the bushel cost can be determined. Plans are at present being made for meetings of potato growers throughout the state in different places to discuss these plans. Please write this office what your advice and wishes are. All food stuffs will be needed this year, and there need be no alarm about potatoes if proper market plans are considered.

JAS. N. McBRIDE,
Michigan Director of Markets.

COOPERATION ACTIVITIES IN MICHIGAN.

About 100 farmers in the vicinity of Fenton, Genesee county, have formed the Fenton Cooperative Association and engaged in the grocery, hardware and shoe business. The store is managed by J. D. Orin, formerly in the hardware business at Elsie. A store building was purchased and remodeled and equipped.

Eaton county farmers living near Eaton Rapids have formed a cooperative association and shipped their first car of live stock to Detroit early in September. R. E. Strickling is the manager.

Bee keepers of Branch county met at Coldwater and formed an association with the following officers: President, Luther Gallup; vice-president, D. T. Bascom; secretary, A. W. Watson. Improved methods, diseases and marketing problems will be considered and arrangements have been made with B. F. Kindig, state inspector of apiaries, for a bee keepers' school during the winter.

Farmers of Watton, in southwestern Baraga county, have formed the Community Milling Company, with \$3,000 capital, and a twenty-five barrel flour mill is being built. A gasoline engine will furnish power, and the twelve farmers who are members have increased their wheat acreage twenty-five per cent over last year.

Houghton county farmers met at

Houghton, the fifty-seven men representing thirteen Granges of the county, and discussed cooperative plans in marketing potatoes. Among reforms suggested are the following: To stop peddling from house to house or selling in small lots to the consumer. Appointment of central selling agency or at least a selling agent for each community and to handle all potatoes on a basis of federal quotations on the Chicago market. To stop buying new seed potatoes and to establish not more than four standard varieties for the county.

Kent Co. ALMOND GRIFFIN.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—The British are successfully holding the gains they made on the Belgian front during the week. They have repulsed several strong counter-attacks, inflicted heavy losses, and taken over 3,000 prisoners. The British gains include several villages and high ground valuable for further offensive work.—The Italians have successfully mined positions near Roccogiano and Selo and straightened their line by advances.—The British air squadron are successfully raiding military establishments in Belgium, and British monitors are bombarding Ostend.—On the Riga front the Russians have made slight advances and have successfully repulsed all German charges.

The Teutonic governments have made their answer to the peace proposal of Pope Benedict. The reply is a hearty endorsement of the pontiff's suggestion and the German government in its statement declared that it "cherishes a hearty desire" that the appeal may meet with success. The realization of a lasting peace is the hope held out in the answers of both Austria and Germany.

Following the disclosures made by United States agents to the effect that information of military value was reaching the Central Powers through Argentine and Sweden, the South American people have become insistent on the breaking off of diplomatic relations with Germany. The matter is now before their congressmen who are assembled at Buenos Aires.

National.

Last week 300,000 men left their homes for the various military camps located throughout the country. This number forms the first contingent of the citizen's selective army. Soon a second call will be made for another 300,000 men. Michigan's quota will be trained at Camp Custer, Battle Creek. Nearly every county and municipality fittingly celebrated the departure of the men with appropriate parades and ceremonies. Great crowds attended these programs. At Detroit the greatest throng of people that ever gathered in the streets of Michigan's metropolis assembled to bid the boys of 1917 a godspeed in the great work they have been selected to perform.

Apparently efforts to influence United States congressmen at Washington into favoring pro-German propaganda had been made by Count von Bernstorff during his incumbency here as German ambassador. Secretary Lansing has made public a message of the Count sent to his home government asking for funds "to influence congress."

Major-General Hugh L. Scott of the United States Army, retires as chief of staff, having reached the age of retirement, to which position Major-General Tasker H. Bliss has been named.

The congressional election committee having under consideration the contest between former Congressman Beakes, of Ann Arbor, and Mark Bacon, of Wyandotte, as representative of the second Michigan district have reported to the house in favor of the former candidate. It is expected that the committee's report will be adopted.

Detroit's population according to the estimates of the city's assessors is 904,134. The figures are based upon the estimates of the water board and information gathered by the assessors themselves.

A committee has been formed to co-ordinate the activities of our railroads, the war department, the shipping board, the food administration and the war commissions of Great Britain and other foreign governments. The purpose of this board is to secure the greatest efficiency from our transportation facilities and to prevent the piling up of foreign goods at our seaboards and other terminal points.

Congress has enacted laws providing for \$11,000,000,000 war credits. The bills are now before President Wilson for his signature.

A Simple Road Problem

What is the repair cost ?
on your old roads ?
How much would concrete roads cost ?

Your tax receipts will answer the first question. Your county engineer should be able to answer the second. By subtracting the cost of permanent roads from the repair expense for 20 years of poor roads you will find capital for building the permanent type, like the one below :



Sheridan Road, near Kenilworth, Ill.—Built by Edw. Laing, Highland, Park, Ill.
C. N. Roberts, Chicago, Engineer

THE fact has been established that in the average rural community in the United States, temporary roads cost to repair and rebuild during a 20-year period, about twice what it would cost to build permanent concrete roads.

Concrete roads are not an experiment. Concrete roads are not a luxury. Any community can afford them. No community, from the standpoint of economy, can afford to be without them. Reasonable in first cost, low in upkeep, they immediately become a profit-earning asset of the community.

CONCRETE ROADS

Their Advantages
No Mud—No Dust
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Regular steamer service on the Detroit and Buffalo Division of the D & C Lake Lines began Monday, May 14th. The Two Giant Steamers of the Great Lakes—City of Detroit III and City of Cleveland III—make daily trips between these points, leaving Detroit at 5.00 p. m., Central Time, and Buffalo at 6.00 p. m., Eastern Time. Daily service is also given between Detroit and Cleveland. Two trips weekly between Detroit, Alpena, Mackinac Island, St. Ignace and Lake Huron way ports. Rail tickets are honored for transportation on all D & C steamers. Adv.

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While not likely to give as high yields when sown late as when sown during September, will usually be a more satisfactory crop than wheat to follow beans or corn in a late season such as this. The pure seed is much higher yielding than that crossed with common. A list of growers of Pure Inspected Seed can be had by writing the Sec'y of the Mich. Crop Improvement Ass'n. J. W. NICOLSON, East Lansing, Mich.

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New Farm Catalogue, Just Out!

321 Money-making farms, throughout a dozen states, described in detail with directions to go and see them. Tools, machinery, live stock, hay, grain, corn, beans, potatoes, apples and vegetables included with many to settle estates quickly. On page 8 read about 300 acres, 10 room house, 100 ft. barn and silo with pr. horses, 6 cows, equipment and crops for \$2500 for all. Less than half down. On page 26 is 136 acres, cream sold at door and skim milk fed hogs, valuable lot wood and timber, 2-story, 8-room house, good cellar barn, large poultry house. If taken soon is cows, pr. horses, poultry, wagons, tools, cream separator, potatoes, apples, 50 tons hay, stove wood, grain and vegetables, all included for \$4400. A dandy home farm on page 19 of 40 acres for \$1500 is on main road, near creamery, 11 room house, telephone, basement barn, pr. horses, 5 cows, poultry, tools and crops all included. \$1500 takes everything. Write today for your free copy of this big new Catalogue of live farm bargains. E. A. STROUT FARM AGENCY, Dept. 101, 150 Nassau St., New York, N. Y.

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Administrator's Sale 135 acres, good land, well fenced, 40 acres under cultivation, small orchard, log buildings, 300,000 ft. good hardwood timber; 9 1/2 miles to D. M. R. R.; 1/4 miles from county seat. For prices and particulars write, ROBERT SHEPARD, Mio, Mich.

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245 Acre farm near Davisburg, Oakland County. 2 basement barns, 10 room house, 175 acres plow land, 40 acres timber, good gravel clay loam soil, and very productive. Price \$14,800. BROOKS & MONTGOMERY, 412 Hammond Building, Detroit, Mich.

120 ACRE farm for sale. All fenced; half in cultivation; running water; excellent stock farm; one mile from good town on railroad in northeastern Michigan. Particulars write, Box C. 91, Michigan Farmer, Detroit, Mich.

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Farm for sale three (forties), two (eighties) and (160) 320 acres in all. New house, new barn with basement all on good road, 6 miles to good market. Box A. 922 care of Michigan Farmer, Detroit, Mich.

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About 100 acres good land prefer Wayne Co. or within 30 miles of Detroit. Give full particulars, description of buildings, etc. Box 8-29 Mich. Farmer, Detroit.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The **FARM BOY**
and **GIRL**
SCIENTIFIC and
MECHANICAL

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

IT is probably true of life, as of everything else, one gets out of it according as one puts into it. The grouchy who complains of everything meets a pretty grouchy world, while the laughing philosopher finds it immensely amusing. The selfish person sees nothing but other people looking out for themselves; while the generous one meets big hearts everywhere.

This is not to say it is an ideal world, or that everyone gets his due; by no means; but it is to say that it is a plastic world, a world in flux, that may be moulded and shaped to human will; that it is, in fact, a world so moulded and shaped. Beau Brummel remarked how much better Heaven had treated man than beasts. For, whereas the animals had been given fur and the birds feathers which they

could not change, man had been sent into the world naked, in order that he might clothe his body to suit his fancy. That is the charm, the never ending charm, of the world. It can be shaped to suit our fancy.

Granted that the world can be changed, that indeed it is changed by man, it is highly important how one exercises his powers. Each, of course, must choose for himself how he shall treat the world, but it is interesting to note how some have chosen.

In the heart of our great metropolis, just a block west of the bronze tablet that marks the site of the old Murray

homestead where Mary Lindley Murray entertained the British officers while General Putnam made good his escape, is a brownstone house in which lives a wealthy man who is quite widely known to the world.

Just what he has done aside from conducting large financial deals the general public does not know. It thinks he has done nothing for anybody but himself. This may or may not be true; it is the current thought. The world thinks him a hard man; and it is reasonable to infer that he thinks it a hard world. That at least is his outward attitude. For, like the desperado

who finds it necessary to go armed, this man who lives in the center of one of the largest cities of the world feels himself unsafe in the presence of his fellows unless protected by arms.

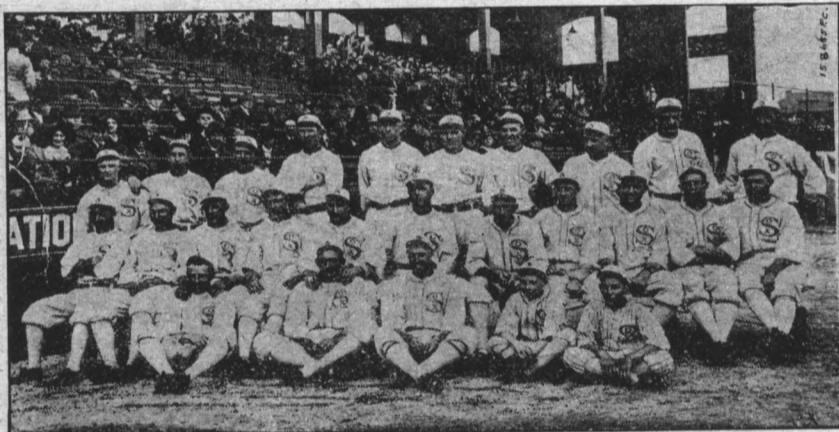
And so it happens that an armed man may be seen on the sidewalk at any hour of the day or night, as though some prisoner in the house might escape. The man within is a prisoner in a sense; he is afraid someone will attack him. He was wounded, not very long ago, and someone may repeat the attempt on his life. He is very rich, and has great power; yet he sees in every stranger a possible enemy who would do him bodily harm. Considering his wealth and power he seems to be getting very little out of life.

Contrasted with the life of this man may be placed that of a woman who

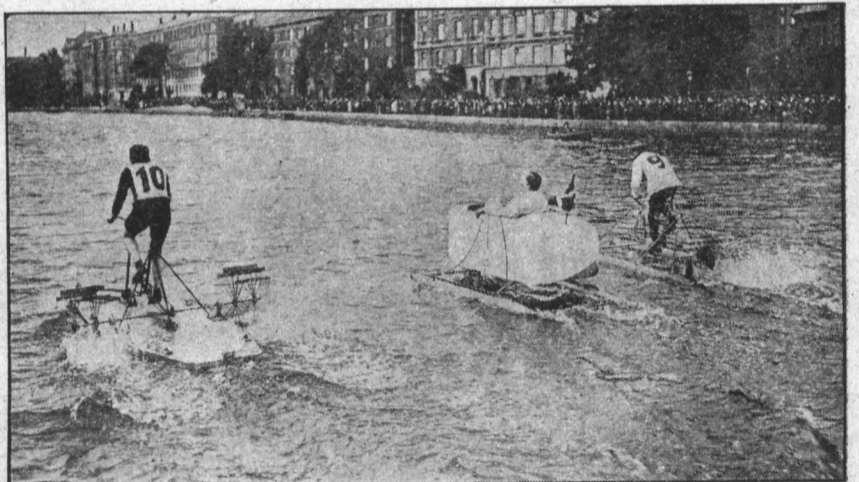
What to Get Out of Life

By **STOUGHTON COOLEY**

WORLD EVENTS IN PICTURES



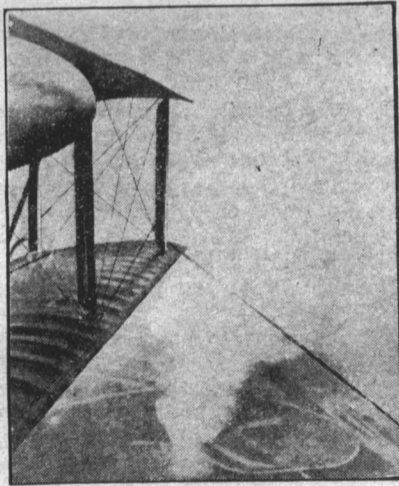
Chicago White Sox, Probable Winners of American League Pennant.



Freak Craft Race for Speed Supremacy in Danish Water Sports Carnival.



Camouflage Protects Military Supply Line.



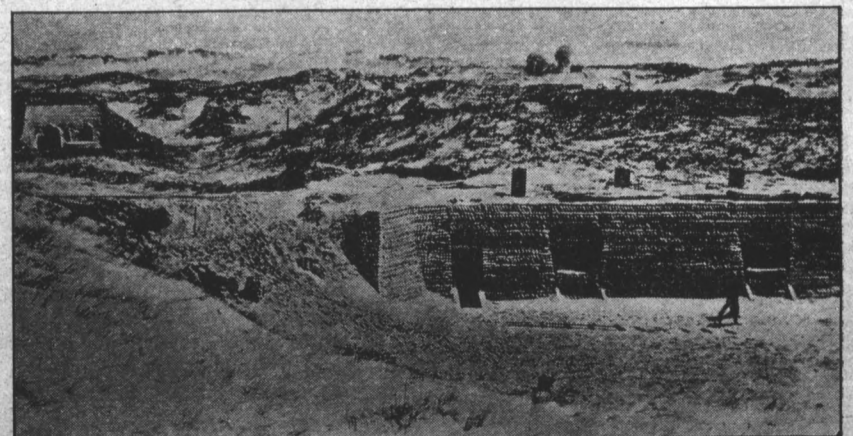
German Munition Depot Fired from an Aeroplane.



Lone Sentry is on Guard at a Military Camp "Somewhere in America."



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Home-like Shelters of British Troops Built in the Sand Dunes of Flanders.

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The income of the Company under such a plan is such that they can pay out from \$10,000 to \$15,000 for claims each month. With such a large membership, the insurance is carried at the lowest possible cost, while in a small company, an assessment would have to be made to take care of a serious claim. That is the reason there is such a continued demand for automobile insurance in the BIG MUTUAL.

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lives on the same street about the same distance east of the bronze tablet to the memory of Mary Lindley Murray. She also is reckoned among the rich. She may not be as rich as the man, but she probably spends a much larger proportion of her income. But there are no armed guards on the sidewalk before her house. Indeed, if you approach the door you will find a tiny brass plate on the inside of the door between the lace curtain and the glass bearing the words "walk in."

Why should this rich man have armed men about his house to prevent anyone from entering, and the rich woman have the invitation to walk in? Why should the man be so timid, and the woman be so fearless? Why should he repel the public, while she invites it?

The whole philosophy of life lies hidden in the answer to those questions. The man has given little to the world. He has scowled at his fellow-men. He never goes out of his way to aid the people. He has indeed undone some of the things that his father did for the public. He has an art gallery built and stocked by his father with the rarest gems of the world, yet its doors are closed.

But the woman devotes all her time, energy, and means to the service of her fellow men. She also has gems in her house. But no one would think of breaking in to steal them, for one has but to ask and they will be given. The rich man has in his library examples of the printer's art that are worth more than their weight in gold. The rich woman has literary gems of far greater value that she gives freely to all who will read them. The man treasures a solitary copy that takes its value from the fact that no one else has a duplicate copy. The woman values hers in proportion to the number she can get people to read.

This looks as though there were truth in the statement that we lose what we keep, and gain what we give away. For the man, after getting as much out of the world as he can is afraid the world will take his life; while the woman who has devoted herself to the service of her fellow men finds the world eager to do her homage. The great of the earth come to her house, and entertain her at theirs. Statesmen, lawyers, judges, artists, men and women eminent in all walks of life who have glimpsed the dawn of a new social day are glad to confer with her on matters of state and public

policy. Yet the humblest seeker after truth, and the frailest worker in the cause of justice is equally welcome.

For be it understood it is not charity she doles out to relieve the misery of those who have been victimized by unjust social conditions. Charity she leaves to those who will do nothing more. All her strength and means go to cure the conditions that make charity necessary. Poverty she believes is an effect, and she has devoted herself to removing the cause. She is possessed of the idea that since all wealth is produced by human labor out of the natural elements the problem of poverty will be solved by setting up conditions that will give labor access to the natural elements. Believing that

each individual should have what he produces, but that the earth itself belongs to all mankind she is endeavoring to establish an economic condition in which government that serves all shall be supported by a tax on the common heritage of man, the earth, while the products of labor go untaxed.

It might be well for such girls and boys as are destined to riches and are wondering what can be got out of life, to consider the example of these two persons. And even those not destined to riches might well give them a thought; for the one who tries to get from the world a penny more than he contributes will receive scowls, while the humblest effort given to bettering human conditions will be appreciated.

"Contraband" RANDALL PARRISH

Although the air was balmy enough, the wind from the southwest almost directly in our teeth, yet there was a look to the north about both sea and sky, which would have convinced me that we were approaching higher latitudes without the aid of my observation. Without being able to explain the phenomenon the seaman instinctively recognizes northern waters. Now, as my eyes swept the wide circle of the horizon, vainly seeking the gleam of some distant sail, the heaving expanse of water, the over-arching sky were almost alike in color—a cold, repellant blue, misting into gray afar off as though particles of fog filled the atmosphere. Indeed it was this which interested me the most, this vague evidence of floating vapor, for I knew enough of these seas to suspect that this might prove the fore-runner of a storm, already preparing to sweep down upon us out of the more northern mystery. Others must have noted the evidence also, for Liverpool crossed the deck to where I stood, leaving McCann with the chart in his hands.

"What do yer think o' that sorter mist out yonder?" he asked, indicating the distance by a sweep of the hands, and striving to make his gruff voice sound friendly.

"It may mean nothing," I answered civilly enough. "I have never sailed these waters, but my guess would be that there is a storm brewing to the north of us. What does the barometer say?"

"A slight drop in the last two hours; nothin' much yet, but it don't look good to me. We ain't so far off the coast accordin' to the chart; yet I suppose there's searoom enough in every other direction."

"Hundreds of miles."

McCann joined us, the chart still half open.

"There seems to be plenty of harbors along this Newfoundland coast line," he said. "Do you know what they are like?"

"Only what the map says. The whole coast is rugged and rocky, dangerous for any vessel larger than a fishing schooner. There are government mail boats calling at those smaller towns during the summer months."

"How far are we to the north of St. John's?"

I used a pair of compasses from where I had marked a red cross on the chart.

"Two hundred and fifty miles, approximately."

"Which makes us about due east of this White Bay indicated here?"

"Yes; but there is not even the name of a town given; all that country is wilderness I take it. Why do you ask? I thought you had decided on St. John's?"

"So we have," in no pleasant tone, and crumpling up the chart in both hands, "but I thought if there was a more quiet port to the north it might

be safer. There are apt to be warships at St. John's. However we will keep to that course." He turned to Liverpool.

"Where's White?"

"Forward somewhere."

"Have him come aft, and take the deck; it's time for dinner."

I shall never forget that meal—not the first, but the last time we were all together about the table in the after-cabin. Not that anything occurred of special interest to this story, but I doubt if ever a stranger company, under stranger circumstances, was ever gathered together, even at sea. McCann rapped at Miss Carrington's door, and she received his invitation to join us with a graciousness of manner that must have surprised the man. However his conceit would never permit him to doubt the lady's incentive, and he escorted her to the seat of honor at the table, with all the ceremony of a New York drawing-room.

Liverpool, who sat at the lower end, his uncombed red thatch more conspicuous than ever, appeared decidedly ill at ease, but his presence failed to embarrass the rest of us, or interfere with the game. Dade, at McCann's orders, helped Philip Bascom from his cabin, and found him a place at Miss Carrington's left, directly opposite the New Yorker, the two men greeting each other with a stiff bow. I had not seen Bascom for some days, and could not help being impressed with his appearance of illness, his face having a positively ghastly look. Yet he seemed equal to the occasion, entering into conversation with the lady, and even occasionally addressing a remark to McCann, who replied in assumed good humor. Dade and the boy Moon served, performing their duties skillfully, although the vessel pitched some, indicating a rising sea. Wine was served, although previously I had no knowledge of any being on board, and the party developed into a rather pleasant occasion.

I do not recall the topics of conversation, as all reference to our present situation was avoided, McCann's object evidently being to win back confidence in his purpose, and impress Miss Carrington with a new idea of his character. He worked to this end skillfully, devoting most of his conversation to her, and broaching various subjects of mutual interest. The girl played her part equally well, and I could read Bascom's bewilderment as he endeavored to join with them in the same spirit. To relieve his embarrassment I managed to keep up a desultory conversation with him, although my thoughts were busy enough elsewhere, endeavoring to figure out the meaning of all this by-play. It was a decided relief when the party finally broke up, and McCann conducted the lady back to her stateroom, pausing for a final word at the door.

"CONTRABAND."

CHAPTER XXX.

The Depth of Despair.

McCANN'S manner changed instantly with the closing of the door, although he indulged in no remark, except to order Liverpool to take charge of the deck, and permit White to take his place at the table. He passed me by without a word, or glance, and disappeared into his own stateroom, the farther one aft to starboard. I waited until Dade had assisted Bascom to retire, and then sought my own berth to think the whole affair over.

I felt that I understood the situation fairly well, and the tactics displayed by both sides in this little dinner party. Miss Vera had gone somewhat farther than I had anticipated, at first; but her rather sudden change of manner had evidently aroused no suspicion as to her object. No doubt she knew the real nature of the man better than I, and could be trusted not to overstep his credulity. Bascom's appearance shocked me, and I felt there was a death look in his face, but our own perilous position kept my mind from dwelling long on this theme. There was little—nothing in fact—that I could do. I must be content to leave Vera to evolve some means for the final overthrow of these men who held us prisoners. Dubois remained in the cabin on guard, probably with instructions to prevent my holding any private interviews, and the only assistance I could give lay in the juggling of figures, in which I could not be too cautious.

The main doubt assailing me had come from a dim suspicion aroused on the deck by McCann's question, and a sly glance exchanged between him and Liverpool. Were the fellows really contemplating making a landing elsewhere on the Newfoundland coast, instead of at St. John's? This was not impossible, and the fact that it would take us thoroughly by surprise would appeal to the conspirators. There was a case filled with books, mostly of a geographical and technical nature, in the stateroom which McCann occupied. Possibly some volume there referred to the Newfoundland coast, and the fellow might have gained from it information I did not possess.

In all probability there were a number of towns, not marked on our imperfect chart, along the shores of White Bay, and also Notre Dame Bay to the south. A boatload of shipwrecked sailors could land at either place, and find some means of disappearing before the news of their arrival reached civilization. Yet I discovered absolutely nothing on which to base such an assumption. McCann was evidently in no haste to reach the latitude of St. John's, and take to the boats, for the Indian Chief was proceeding with greatly reduced speed, and, as the afternoon wore slowly away, it seemed to me we were scarcely moving, the reverberation of the screw being barely perceptible. To assure myself that the course I had mapped out was still being adhered to, I ventured into the cabin for a glance at the telltale compass. We were headed to the west of south.

The man Simms was on guard, lolling against the butt of the mizzen mast, with no one else visible. He was a dull, stolid fellow, and to test his orders, I turned toward the closed door of Miss Carrington's stateroom. Instantly he was on his feet to interfere.

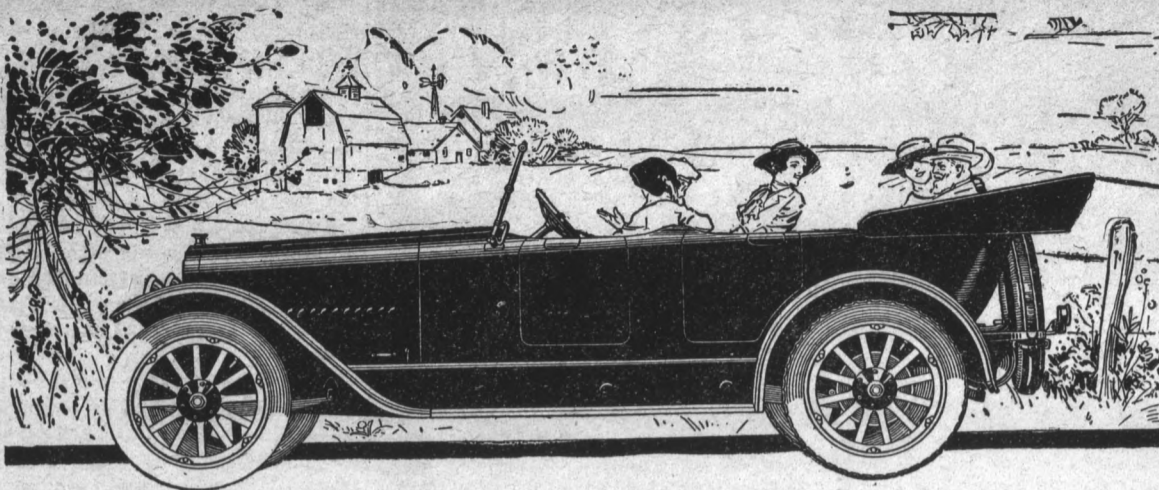
"You are not to do that, sir."

"Not to do what?"

"Speak alone with the lady; those were my orders."

I raised my voice in remonstrance, but had scarcely uttered a word, when McCann emerged from his stateroom, leaving the door ajar, and crossed the deck to face me.

"What is the trouble here, Simms?" he asked, the harshness of his tone dif-



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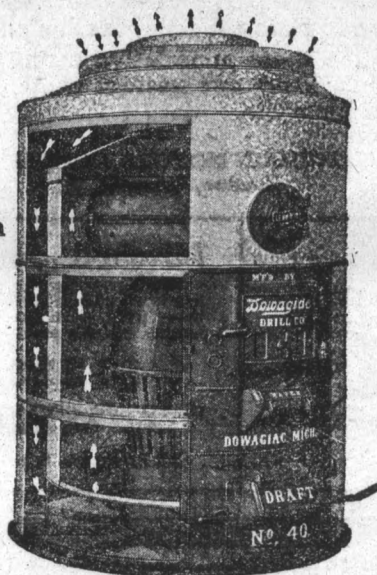
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fering greatly from the present conversation at dinner.

"Mr. Hollis was going to rap on the lady's door, sir."

"Oh, he was, hey! Well, now see here, Hollis, you understood that you were to have no communication with any prisoners aboard, didn't you?"

"I was not aware that Miss Carrington was considered a prisoner."

"Well, whether she is or not, she is no longer to be bothered with your attentions," with an attempt to control his temper. "You knew perfectly well that she was included in the terms of your parole."

"How should I? I was with her when the parole was given."

"What of that! I am not here to discuss the matter. I consider that you have broken your word. You will go back to your stateroom, and stay there."

"Supposing I refuse?"

He grinned, exposing his teeth like a great cat.

"I wouldn't advise you to try that," he sneered, "for there is crew enough on deck to man-handle you to a finish. You can go in quietly, or I'll call them down, and have you thrown in. So take your choice."

I looked at the two of them, eager enough myself to make it a fight. Yet what was the use? An open rupture could serve no good purpose; I would be overcome by numbers, perhaps seriously injured, and such a struggle would only handicap the girl. Besides, something in McCann's words and irritating manner aroused within me a suspicion that he hoped I would be goaded into resistance. Perhaps it was with that object he had so promptly joined in the mess. Any excuse enabling him to confine me more closely would evidently be to his advantage. These considerations flashed across my brain as Simms grinned at me, his right hand flung back as though gripping the revolver undoubtedly in his hip pocket. McCann, pretending a coolness I am sure he was far from feeling, sat on the edge of the table, one foot dangling. Oh! how I would have liked to smash him one, putting all my hate into a single blow between his sneering eyes. But I conquered myself, and hands clinched, crossed the deck space, and entered my stateroom, closing the door. I heard McCann laugh, and say something to Simms; then I knew he crossed the cabin, and went up the stairs. To better control myself I thrust my face out through the open port, breathing in the salty freshness of the air.

Suddenly I became aware that others had entered the main cabin. There was no sound of voices; nothing to tell me the purpose of this invasion, yet I felt certain that, at least, a dozen men had descended the steps from the companion. I stood erect listening; there was fumbling at my door. Had McCann changed his mind? Were they about to attack me in force? Revolver in hand I took a step forward, half-ready to welcome any open hostility.

"The first sea rat to open that door," I called, "will get what's coming to him."

There was a mocking laugh in answer, in which more than one voice joined; then White growled reply: "No one is a comin' in, Mister; an' you sure are not goin' to get out."

I grasped the knob, throwing my whole weight against the wood. It yielded scarcely half an inch, just enough to reveal a stout bar. This time I was a prisoner beyond doubt; they had left me no loophole of escape. But why? What had I done to warrant them in breaking their pledge? Could it be that McCann had no further use for me? No desire for another observation? If this was true, then it must be the men proposed deserting the ship that very night, and taking a chance at getting ashore in one of those northern bays. And they had nailed me in

to die like a rat in this hole, when the Indian Chief went down.

For the instant, as this fear gripped me, I was dazed and incapable of thought; helpless to even clearly comprehend the full horror. I do not believe it was my own situation which so completely unmanned me, but the remembrance of Vera. What would become of her? She would be alone in McCann's power without a human being to whom she could appeal. She would be forced into the boat despite her struggles, laughed at, and mocked. She might even be compelled to witness the slow sinking of the ship carrying us down into the depths. And then—what? At St. John's, in the midst of a civilized community, there might be hope of her finding friends, or at least, a rescuer. But not on that wild coast to the northward, where there was no one to whom she could appeal. She would be no better off ashore under those conditions than on board the ship or in the small boat. The vision I conjured up was agony, and I sank back upon the stool, my face buried in my hands.

It is not even yet clear to my mind how the remaining hours of that afternoon passed. I was conscious only of a mad, impotent rage. Wild schemes flashed through my brain, only to fail of execution. I was tightly trapped, and everything which occurred led me to the same conclusion—the quarrel in the cabin, the fastening of the bar across my door, had all been prearranged. It was part of a previously thought-out plan. McCann had never intended giving me the freedom of the ship, even under parole. He had apparently yielded to my demand to induce me to make that last observation, and figure out the position on the chart. But as soon as that had been done I was no longer of any use on board, and he had gladly accepted the first excuse offered to render me helpless. There could be only one reason for such action on his part—desertion of the ship, that same night. If the mutineers were really, as pretended, intending to land their boats in the harbor of St. John's, they would require my services for at least another day yet. No one else on board could place the vessel at the point designated. Their actions, however, plainly evidenced that I was no longer needed, and that their plans had been changed.

Indeed no one held communication with me all that afternoon; occasionally I overheard movements in the cabin, but could scarcely peer through my door, and was unable to ascertain who were present, while the few words distinguished brought me no specific information. That some movement of secret importance was going on aboard seemed more than probable. The sound of footsteps on the upper deck over my head proved that an unusual number of the crew were busily engaged aft, while several times I caught the echo of orders, and the creaking of blocks, convincing me that the small boat tackle was being overhauled and tested. I also became impressed with the conviction that food supplies were being conveyed from the lazarette to the boats and stowed away.

Supper was served early in the cabin, but was evidently more of a lunch than a meal, no attempt being made at formality. McCann, Liverpool and Miss Carrington were at the table, but, while I could differentiate their voices, conversation was carried on in such low tones, I could make little of it. Indeed, I do not think Red spoke at all, and the other two seemed to be discussing music as though interested in no other topic. When they left the table Vera went to the piano, and played and sang all the time White was eating. My little peephole gave me a glimpse of McCann, leaning against the mizzen mast, his eyes upon her. No offer of food was made me, nor did I see, or hear Bascom; if he ate at all

THE FROST KING.

BY MILDRED M. NORTH.

The Frost King is surely coming,
His spies are throuth the land;
I can trace their stealthy footprints
As I look on every hand.

I saw where they camped in the low-lands
This morning the ground was white
With the ashes of their campfires
Where they gathered thru the night.

And everywhere there lingers
A smoke-like purple haze
That must have come from the embers
They left in the woodland ways.

And every tree and thicket
Bears a signal torch aglow,
Where the vanguard of his army
Have blazed the way to go.

The birds are winging southward,
They love not the Frost King's reign;
The wee folks of the forest
Are hoarding their nuts and grain.
In garden, wood and meadow,
Wherever I may peep,
The leaves are falling softly
And whispering "Down to sleep."

'Tis wondrously, wondrously lovely
This glorified Autumn land
But the Frost King is surely coming,
I see it on every hand.

it must have been in his own state-room. Finally the music ceased, the two exchanging a few apparently friendly words, before the girl excused herself, and returned to her room. It seemed to me there was already a cordial understanding between them, and I confess the thought was unpleasant enough in spite of my conviction that Miss Vera was merely acting a part at my own suggestion. Surely there was no necessity for her being quite so nice, or permitting him to think her altogether so weak of will.

Assured that the fellow was no longer below I indulged in a last glance through the round port. The purple twilight obscured both sea and sky, but there was no cloud overhead, no sign of brooding storm. The sea, while not calm as in more southern latitudes, was still not rough enough to peril the landing of boats. The night was evidently to be a pleasant one, stars already peering out through the purple haze; the ship moved majestically on through the desolate waters, so slowly as to barely retain steerage-way.

I sat down to think again—hopeless, my mind on the same treadmill. What could I do? What effort of mine was possible? There was no means by which I could escape from the state-room; I was like a rat in a trap; and McCann intended to leave me there to drown. Within an hour, perhaps; certainly before midnight, those devils would desert the ship, and take to the boats. By morning they hoped to be safely ashore on the Newfoundland coast, in a country almost without communication with civilization, a party of shipwrecked seamen—and the Indian Chief would never be heard of. Already I was practically dead; certainly as helpless to prevent the consummation of this villainous plan as though fathoms beneath the sea. How deathly still it was on board. No sound of footsteps reached me from the deck overhead; no voice spoke even in gruff orders; no movement of any kind arose from the cabin. Suddenly it occurred to me that Dade had not even cleared the table; at least I had heard no rattle of dishes, or any evidence of work. Such neglect certainly must mean that McCann's plan was known to all aboard of his own company. The steward must realize that there was to be no breakfast served, no necessity for washing up; the dirtied dishes might just as well go down where they were, as polished and clean on the pantry shelves. I opened the door again, noiselessly, its scant quarter of an inch before it was stopped by the bar, and sought to look out. The space gave me no view; there was a light burning, but turned so low as to leave the cabin in semi-darkness. I waited listening, but no movement told of any presence. For the fourth time I tried

my knife point on the bar holding me prisoner. It barely scratched the wood, for I could not force the handle through the narrow opening. I might smash it by shots from my revolver, but that would leave me unarmed, and create an alarm which would fill the cabin with men; besides the severed ends of the bar would still hold the door secure.

I straightened up, my heart beating like a triphammer. Something strange, unaccountable was occurring in the cabin. I could make nothing of it; not even satisfy myself that what I seemed to hear was an actual reality, yet there was a sound like a blow, followed by a barely audible groan, and the sliding of a body to the deck.

CHAPTER XXXI.
The Hand of Fate.

It seemed an age I stood there, bending to the narrow crack, hearing no further sound, and unable to guess what had occurred in the semi-darkness of the apparently deserted cabin. I could distinguish no movement, not even the sound of breathing. Then a soft whisper spoke almost in my ear, causing me to start back as though stabbed by a gun.

"Robert!"

There was agony in the utterance sufficient to disguise the low voice, yet I could not doubt the identity of the speaker.

"Yes; I am here, dear; what has happened?"

"Oh, don't ask that. I hardly know myself. It was all impulse, desperation. Listen; they are going to desert the ship within an hour. McCann told me. I—I let him believe I would go with him to save my own life. I—I didn't know what to do. All that was left me was to pray and watch."

"Yes, dear heart—but what happened, you must speak quickly. They all left the cabin, and went on deck."

"Yes; to provision the boats; they are lowering the two forward ones now. I was told to get my own things ready."

"No guard was left here below?"

"Only Dade; they knew you could not possibly get out, and they had no fear of me because I was so frightened."

"And what became of Dade?"

She caught her breath, the answer a sob almost inaudible.

"I struck him; dear, there was no other way. He—he hardly uttered a sound, but sank off the divan onto the deck. Maybe I killed him, but—but I never meant to do that. I used the only weapon I had—an iron leg from my washstand."

"Don't worry; it was either his life, or ours. There is no one else below?"

"Not—not now."

"Is there any way of loosening this bar? I cannot even determine how it is fastened; there were no cleats."

I could see her outline as she stood there, feeling with her hands; then realized that a length of iron was inserted between the wooden bar and the jamb of the door; there was a crunching sound, not loud enough to be alarming, and the bar fell, but was caught before it struck the deck. Instantly I was in the cabin, and had grasped her hands still clinging to the leg of the washstand.

"You brave, dear girl."

"Oh, don't, not now!" she pleaded, drawing back. "What shall we do?"

I swept my eyes about—at Dade, huddled motionless on the deck, a shapeless heap; at the companion door, slightly illuminated by the faint flicker of a lantern forward. It was all desolate, sodden, the grim picture striking me like a blow.

"What do you know?" I asked. "Tell me as quick as you can."

"They are lowering the boats. He will be back for me in a minute."

"Yes, I know; but they mean to open the sea-cocks first?"

(Continued on page 275).



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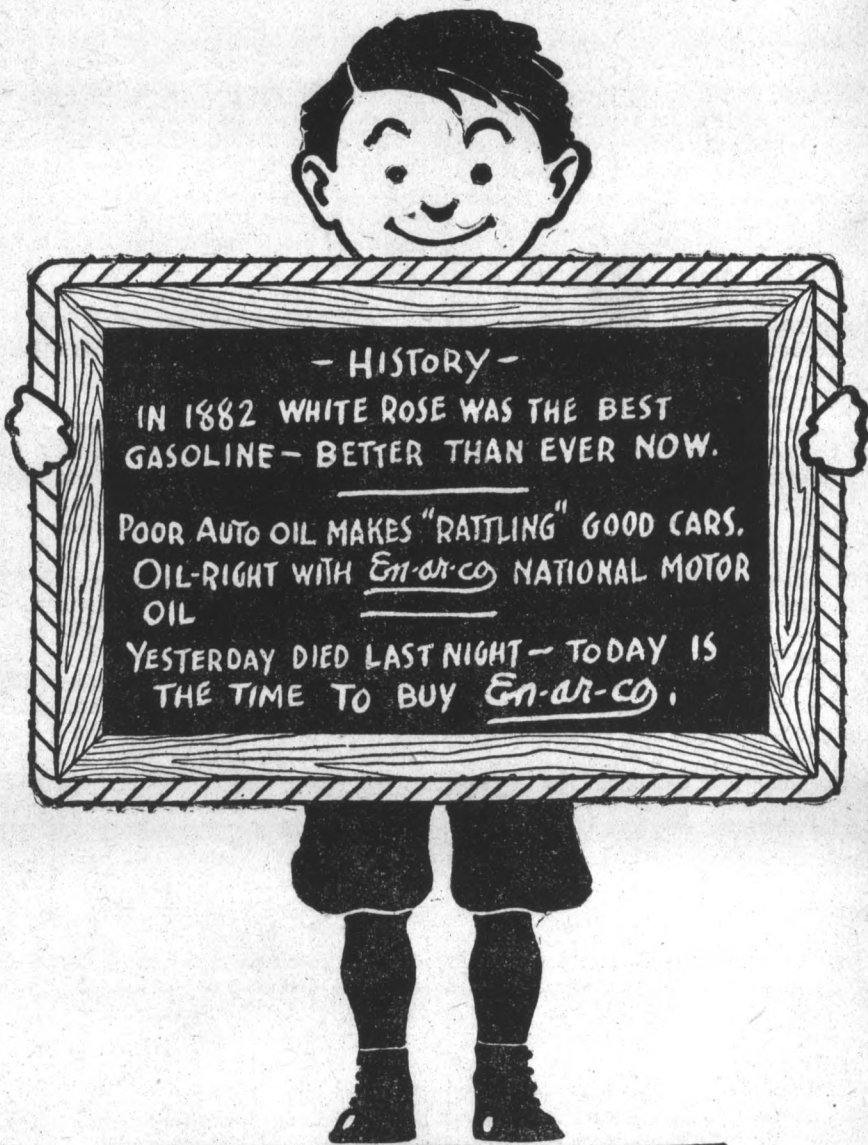
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Woman and Her Needs

At Home and Elsewhere



Conserving the Apple Crop

By ELLA E. ROCKWOOD

DRYING fruit was the housewife's duty in our grandmother's day and if we heed the advice of Mr. Hoover, the art will be revived the present year. Canning undoubtedly will continue to hold first place in preparing perishable products for preservation, yet since a variety is always acceptable it will do us no harm to dry such fruit as there may not be cans for, especially this year when we may be very glad indeed to get anything in this line before another summer.

Apples are scarce in certain parts of the state, and farmers themselves will be minus their usual supply of this favorite standby the coming winter. Hence every housewife should see to it that not an apple goes to waste. Nothing more delicious can be imagined than genuine old-fashioned apple butter, something rarely to be found these days. Almost any family could consume gallons of it before spring and be the better for having done so. Sweet apples, pickled, are in the same class with pickled peaches as altogether delectable if one does not spare the sugar and spice. And dried apples, the butt of facetious remarks and allusions in days gone by, are not at all to be despised. Some dried apple sauce and some dried apple pies may lack savor, but others of the same name have been known to be really delicious. Remember, you older ones, the dried apple sauce, rich with brown sugar and flavored with slices of lemon, and raisins, which mother used to make? I do, for one, as well as pies seasoned in the same way.

Grandmother Benham used to make a half-barrel of boiled cider apple sauce every fall to supply her family of eleven. This was kept in the store-room where it remained frozen all winter, a portion being cut out with a hatchet and thawed out as required. And sweet apples, cooked until soft in boiled cider made of the same sweet fruit, makes delicious sauce today, if one has the material and the patience necessary for the undertaking.

Apples are not only wholesome and appetizing, but they possess considerable medicinal value. People who eat largely of them enjoy good health. An apple is far and away ahead of an orange any day in the year in its adaptability to different purposes in the household, besides being superior in flavor to the orange of commerce. After all due respect to the states which produce them the world could get along very much better without oranges than without apples.

In the days gone by to which reference has been made, apples were strung on a stout string with a darning needle after they had been pared and quartered and cored. These, in lengths of a yard or more, were hung from the ceiling of the kitchen, in festoons until dry enough to store away.

The modern evaporator makes this primitive method unnecessary. In sanitary racks or trays the fruit is quickly dried without becoming discolored. Where one has surplus fruit, more than the family can dispose of, it can be sold to good advantage and so become the source of a pin money fund if desired. The tremendous waste of

fruit from the average orchard in years of abundant yield is something greatly to be regretted.

When we stop to think that an apple is a treat rarely enjoyed by the boy or girl who lives in any of our large cities, it seems such a pity that the bounties of life are so unevenly distributed. Even by people of considerable means they are bought in quantities so small that they would not last long if the children were free to eat as many as they pleased, and under our present transportation and sales system a peck of fruit frequently costs the consumer quite as much as the farmer receives for a bushel.

The cider barrel in the cellar has gone forever from the homes of right-thinking people, but sweet cider fresh from the press brought to the scalding point and put into cans or bottles is as harmless as grape juice, which is preserved in the same way.

HOW TO STORE LATE CABBAGE, BEANS AND PEAS.

No vegetable is easier to keep than cabbage. The heads may be kept in banks in the same manner as potatoes or beets. They may also be stored in cellars by placing them on shelves, but it is not advisable to store cabbage in the basement or the storage room in the cellar, as the odor is liable to penetrate throughout the house. Cabbage may also be kept in special banks or pits. A common form is made by pulling the plants, roots and all, and placing them in a long pile with the heads down. The whole is covered with dirt in the same way as the storage pits. Another satisfactory method of storing is to pull the plants, roots and all, and set them side by side in shallow trenches until a bed six or eight feet wide and any length is formed. This is enclosed by a row of stakes, or by a plank or pole frame, banked on the outside with dirt and supports laid across the top, and the whole covered with straw, fodder or other material.

Pick beans as soon as they are mature and spread them in a warm, dry place, such as an attic floor, until thoroughly dry. Then shell and store in bags hung in a dry, well-ventilated place until needed. Allow navy and other bush beans to mature on the vines until a maximum number of pods are ripe, then pull the whole plant and cure it like hay. After thorough drying, thresh the beans and store as suggested above.

Peas may be treated like bush beans and stored in the same manner.

CAUSE OF CANNING FAILURES.

1. Rubbers popping out from beneath the tops of jars during sterilizing may be due to poor rubber, to too large a rubber, or to too small a rubber or to too much pressure from the top. The top and rubber must be removed, a new rubber and top placed on and the jar returned to the canner for about five minutes.

2. Liquid is drawn out from the can, sometimes in the following cases: (a) When the water in the canner does not cover the cans at least one inch; (b) when there is not free circulation

about the cans; (c) when the tops have been adjusted too loosely.

3. Jars may break: (a) when there is not free circulation of water about the cans; (b) when a cold can is placed in hot water; (c) when a hot can is placed in cold water; (d) when a can is placed in a cool draft.

4. Shrinkage of vegetables may be caused by insufficient blanching and cold dipping.

6. Bubbles that show sterilization do not affect the keeping qualities of the product.

7. Cloudy appearance of the liquid in the cans may be due merely to overcooking, which forces out the interior of the product or be due to very hard water.

8. "Flat souring" of corn, peas, beans and asparagus is a condition giving a slightly sour taste and objectionable odor, and may be due to allowing the vegetables to stand too long. As soon as each jar is filled it should be set in the canner so that cooking is not delayed. It is probable that an unknown organism produces this condition and the souring may occur in spite of all precautions.

9. Overcooking may not always be objectionable but it is likely to happen with fruits which require a short time for sterilizing. Cooking is going on while the water is coming to the boiling point and if this time is prolonged some deduction should be made from the time given for sterilizing.

10. Spoilage may result (a) from use of old rubbers; (b) from keeping jars in a place that has alternately cold and warm temperatures; (c) from breaking the seal of jars by attempting to tighten the tops after the can has cooled and a vacuum has been made.—Department of Home Economics, Ohio College of Agriculture.

HOME QUERIES.

Household Editor.—As I have received so much help from the Michigan Farmer in different ways I gladly send a few helps to others. When washing white gloves put them on as when washing hands. The finger tips can be easily cleaned in this way. If sticky pans are turned upside down they will wash easily even several hours later. Let me tell you how I can peels, and in fact, all fruit. Take the ripe, soft pears, peel and core, put one cup of white sugar to every quart of pears and let stand over night. By morning they will be covered with juice and there will be no need to add water. Cook 15 or 20 minutes and can. These are fine. Can The Michigan Farmer tell me the best way to dispose of tin cans, bottles and all kinds of trash? It doesn't seem right to me to dump them along the roadside. Often the beauty of a pretty spot is spoiled in this way.—Mrs. E. D.

It is certainly not right to dump such refuse along the road. Most communities have a certain place, often a ravine for a dumping ground. If you have not and your yard is large, could you not dig a pit and bury the old cans? Burn paper and everything that will burn. Keep your bottles and fill them with catsup, grape juice, or any sort of fruit juice. Use the wide-mouthed ones for jams, marmalades and pickles. If you do not need them yourself give them to a neighbor and if you have no neighbor who needs them get in touch with a county agent, demonstrator, war relief work or the Red Cross and see if you can not find someone who wants them. The government urges every woman to save all

bottles and glass containers and put them to use storing up food for winter.

Household Editor.—Why will not gelatine harden when prepared with pineapple?—Reader.

The pineapple contains a principle which digests the gelatine.

I wanted to dry some peas and string beans this summer so I made a wire bag seventeen inches wide, of galvanized mosquito netting, the widest kind. I doubled it and sewed up the sides with a darning needle threaded with wrapping twine. This I filled with peas and put in the oven on the grate about four inches from the bottom of the oven when I had a hot fire. I turned and shook it often and of course left the door open. As the heat of the stove went down I nearly closed the door. I dried them in one-half day this way.—I. DeC.

Canning Rhubarb.—Last summer and this, I canned pieplant easily and it keeps all right, too. I cut the stalks in squares, like I do for pies, without peeling, then chop till there is enough juice in the chopping bowl to fill the can after the pieplant has been pressed in the can with a knife or spoon. Then seal. No cooking is necessary.—I. DeC.

SPREAD THE MEAT FLAVOR.

Spread the meat flavor over other foods and so economize on the quantity of meat consumed, says the United States Department of Agriculture. Here is one way to utilize left-over meat by spreading its flavor.

Meat Turnovers.—Chop the meat. If the quantity on hand is small, mix with it left-over potato or rice. Season with salt, pepper, onion, etc. Place filling on circular pieces of biscuit dough about the size of a saucer. Fold over the dough and crimp edges together. Bake for about one-half hour in a hot oven. A brown sauce made from two tablespoonfuls of flour browned in two tablespoonfuls of butter to which a cupful of water or stock, and a half teaspoonful of salt is added, may be served over the turnovers.

Peanut Soup.—A delicious and nourishing soup may be made from skim-milk and peanut butter as follows: Heat one pint of milk until lukewarm. Add two rounded tablespoonfuls of peanut butter mixed to a smooth paste with a little of the milk. Salt to taste. Thicken with one teaspoon of butter or savory fat mixed with one tablespoonful of flour. Bring almost to the boiling point and serve.

GOVERNMENT "SHORT CUTS."

Put up now, in sterilized bottles, fruit juices heated to boiling point. Cork and seal with sealing wax. Use when needed for making jellies, syrups, sauces, and drinks.

Dry vegetables and fruits by hot air process. (Farmers' Bulletin 841, U. S. Department of Agriculture, Washington, D. C.)

See that the cellar or pit is ready for storing winter vegetables; as potatoes, carrots and squash.

If far enough south, plant a fall garden.

If cans are scarce, bottle tomatoes in the form of paste for soups, stews and sauces. (Farmers' Bulletin 841, U. S. Department of Agriculture, Washington, D. C.)

"CONTRABAND."

(Continued from page 273).

"I was not told; no one has come down this way."

"Whoever is given that job would use the main-hatch, or the ladder to the engine room. You do not know if all the crew are on deck?"

"No; I only went as far as the companion after McCann left me. I could see men from both watches, for it was not entirely dark then, and quite a few stokers were among them. Only one engine was working; I—I am sure of that."

"Yes, we only have steerage way—just enough to hold us to the sea. You neither saw, nor heard of Masters?"

She shook her head.

"I do not believe he is in charge. The man White yelled down the ladder to somebody, whom he called Tony, to use only the one screw—do you know a man by that name?"

"Aye, Tony Rappello, the head fireman; he could keep the machinery going. Now one thing more—where have they confined Leayord and Olson?"

"I haven't dared ask," she admitted. "I did not suppose they would leave the ship tonight, and thought I might find some way to discover this for myself."

"You have no hint?"

"Only that the boy Moon carried food forward from the table while I was at the piano."

"Forward; on deck?"

"No; down the passage amidship."

"Good; that is what I supposed, and it gives us a far better opportunity to reach the men than if they were being held in the fore-castle. They are in the petty officers' quarters, no doubt. Now, listen, dear. McCann may come for you at any moment. You must go back to your stateroom, so that he will not suspect. Leave the rest to me, but delay him in every way possible."

"Am I to go with him?"

"Only as a last resort. If I can release Leayord and Olson in time to act we'll block the game. This probably depends on how long you can keep McCann on board."

"He must not suspicion your escape."

"No; I'll attend to that." I caught her in my arms, and kissed her, feeling her arms twine about my neck. "You must go now. You trust me?"

"With all my heart."

She crossed swiftly to her stateroom, stepped within, and partially closed the door, yet, I felt, stood there, watching my every movement. There was no longer hesitancy on my part; our lives hung on the next few minutes, and I had already determined what I must do, and how. Action, the chance to fight, inspired me; I was no longer a caged rat, but a man able to cope with these villains face to face. The first thing to be done was to clear the cabin, so that anyone entering it would have no suspicion aroused. Time, time in which to work, was my one great need, and this could only be had while McCann believed me still to be a helpless prisoner. I caught up the wooden bar from where it lay on the deck, closed my stateroom door, and fitting the nails back into the old holes, drove them in tightly with the iron Vera had used to pry them free.

Dade was unconscious, but not dead. I only needed to touch his flesh to assure me of this fact, yet the fellow neither stirred nor groaned, as I hastily dragged his body into the nearest open doorway. He should have been bound and gagged, but I could not waste the moments for that job, and satisfied myself with closing and locking the door. Then, for an instant, I stood, panting for breath, uncertain as to my next move, taking hasty survey. It was almost a surprise to me that I had not been already seen from above. I could hear, now that all was quiet, steps on the deck overhead—either those of the officer in charge, or the

man left at the wheel. Any instant one of these might be tempted to glance down through the glass transom into the dimly lighted cabin.

Only some miracle, or the consolidation of their interest temporarily on what was being done forward, had saved us from discovery. Yet I could not remain there, almost in plain view. Where should I turn first? Bascom would be of no value, even if I released him; my only hope of assistance lay in the two seamen. Gripping the iron bar, the revolver snugly stowed away in my pocket, I crept down the black passageway leading forward, glad to escape from the light of the cabin.

Whatever of desperate villainy was going on elsewhere in the ship, all was black and desolate enough down here. I had previously explored this passage when I first assumed command, and my mind retained sufficient memory to yield me confidence. There was a swinging lamp in front of the steward's pantry, but I dared not light it. Far better to grope my way forward, as there was no pitfall in the dark until the ladder leading down to the engine room should be encountered, and that was beyond the petty officers' quarters. It was a low, narrow tunnel, running so deep within the heart of the ship as to be absolutely silent. I could hear no ripple of water, and as the engines were working slowly, feel no vibration of the screw. Occasionally a faint, far-off hiss of steam alone reached my strained ears. I moved on, testing the deck with my foot, and feeling along the side with my hand. I possessed knowledge enough to realize where I was—this iron cover encountered by my feet concealed the opening to the lazarette; this first door, standing wide open, was Dade's pantry; opposite was his sleeping quarters, and beyond these was where the boy Moon bunked, and the three storerooms. I tried the doors, finding none of them locked, which assured me they were unoccupied. The carpenter's stateroom came next, and I stood hesitating an instant before testing its latch, listening intently for the slightest sound.

Yet surely there were no guards posted here. They would be useless in such darkness; beyond doubt every man had been required to provision the boats, and get them overboard. McCann believed his prisoners were secure; that it was quite safe to leave them unwatched for the short period before deserting the ship. The very fact that the inefficient Dade had been left alone in the cabin to watch over Miss Vera, and myself, was evidence that he needed every seaman to carry out the work on deck. The measure of his confidence, his conceit, was what gave us this opportunity to act. My hand, fumbling for the lock encountered a bar, a stout wooden bar, extending from jamb to jamb, and my heart bounded madly. This was the place! I had found it already, and the men I came to release were imprisoned exactly as I had been. I tapped gently on the panel. (Continued next week).

THE CHILDREN'S ARMY.

BY MISS Z. L. DAVIS.

Why seems the house so empty,
And the garden left alone,
The pathway to the "swimmin'-hole"
With weeds is overgrown.

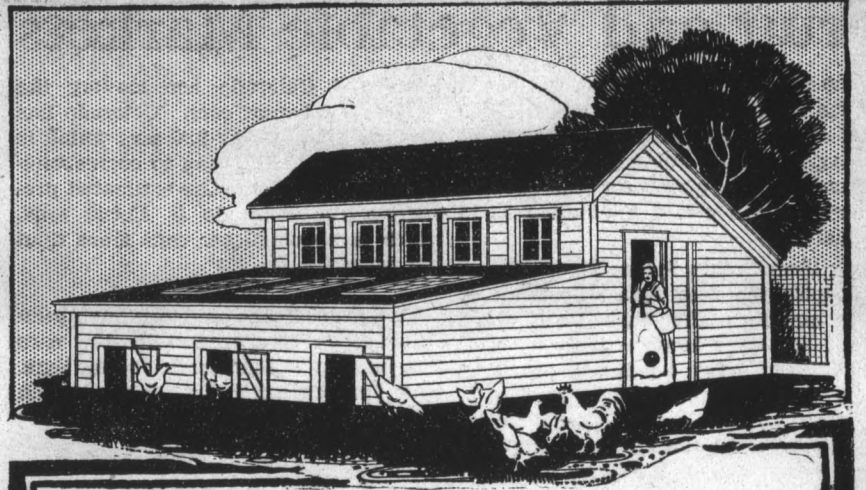
The whistle and the laughter
Of youth has died away,
Ah! why—the children's army
Start off for school today.

For them the long vacation,
At last will have an end,
To them the school house beckons,
With teacher for their friend.

With books and dinner baskets,
Each goes with smiling face,
To gain the prize of wisdom,
And win out in Life's race.

In fancy, we go with them,
And live the days again
Of earnest, happy childhood,
With joy as the refrain.

God bless them in their studies,
And in their play time, too,
Good angels guide their footsteps
In paths untried and new.



For complete working plans, specifications and bill of materials for this Chicken House and thirteen other farm buildings, send coupon below.

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Fruit and Vegetable Markets

The following conclusions are based on the findings of the Bureau of Markets of the United States Department of Agriculture. Jobbing prices and shipments are given for the United States for the period September 11-18 inclusive.

Irish Potato Prices Firmer.

Despite the fact that shipments of Irish potatoes the past week were about 800 cars heavier than a week ago, prices have advanced considerably. Jersey Giants are selling f. o. b. at \$1.12 to \$1.15 per bushel, as compared with 90 to 92 cents a week ago. Jobbing prices are also higher, although they have not advanced as sharply as prices in producing sections. Jersey Giants are jobbing at \$1.15 to \$1.40 per bushel, as compared with \$1.00 to \$1.35 a week ago. On western markets Minnesotas are jobbing at \$1.20 to \$1.50, as compared with \$1.20 to \$1.30 a week ago. Maines at \$2.40 to \$2.75, per 11-peck sack f. o. b. as compared with \$2.00 a week ago.

Cantaloupe Demand Weaker.

The unusual cool weather has caused demand for cantaloupes to weaken, and although shipments were nearly 300 cars less than a week ago, prices have also declined considerably. Rockys are selling f. o. b. at \$1.00 per crate as compared with \$1.25 to \$1.50 a week ago. Jobbing prices of Colorados have declined to \$1.25 to \$2.50, as compared with \$2.00 to \$3.00 last week. Turlocks have also declined. The movement from Colorado still continues heavy. Turlocks are now moving at the rate of about 12 to 15 cars a day, and no other sections are shipping large quantities.

Apple Prices Higher than Last Year.

Early fall apples are selling at \$1.50 to \$2.50 per barrel higher than last year at this time. Jobbing prices are slightly weaker than last week. Wealthys are jobbing at \$4.00 to \$5.75 per barrel, as compared with \$4.50 to \$6.50. The apple movement is getting considerably heavier. About 300 more cars moved to market than a week ago. Illinois, Virginia and Michigan more than doubled their shipments and New York is shipping considerably heavier.

Peach Movement Heavier in the West.

Peach shipments from Colorado and Washington have been heavier this past week than a week ago. The total shipments for the country were about 300 cars more than a week ago, and most of this increase was from these two sections. Last year at this time the New York and Michigan crops supplied the market, but this year the main Elberta crop is not moving heavy from either of these states. Prices of peaches are slightly firmer than a week ago. Marylands are jobbing at \$1.75 to \$2.75 per bushel basket, as compared with \$1.50 to \$2.50 a week ago. Prices for Colorados are also slightly firmer.

Pears.

The pear movement has been about 100 cars less than a week ago. Prices have remained about the same. The California and Washington movement is decreasing, but New York is shipping a considerable quantity.

Grapes.

The grape movement for the week was 1096 cars, or more than 200 above that of a week ago. Michigan, New York and Iowa are moving quite a number of cars, as well as California, which is by far the heaviest shipper at the present time.

Onions.

The onion movement from Massachusetts, New York and California was considerably heavier than a week ago. F. o. b. prices at Rochester were \$1.25 per bushel, which is a decrease from the price a week ago.

Cabbage.

Cabbage shipments were about 125 cars heavier than a week ago. New

York and Colorado are moving the largest number of cars. Colorado has shipped to date only 920 cars which is about one-half less than to corresponding time last year. The estimated production for Colorado is 58,960 tons, which is about 80 per cent more than last year.

Celery.

To date 982 cars of celery have been shipped, as compared with 197 cars last year up to the corresponding time. New York especially has shipped much heavier, totaling more than three times as many as last year to date.

CELERY IN COLD STORAGE PRACTICABLE.

If celery is packed in small, well-ventilated crates and carefully handled it will keep in good cold storage for three months, or longer, according to results obtained in a four-year test

just reported by the United States Department of Agriculture.

It is believed that as a result of these experiments it will be much easier for growers and dealers to obtain cold storage for celery. Heretofore it has been difficult to secure space for this product because the celery often spoiled, largely because of careless handling, thereby prejudicing storage-house operators who prefer to handle other products. The old method of storing celery in the field and in houses of the cellar and semi-cellar type is not satisfactory because temperature and moisture conditions can not be controlled.

The objects of the experimental work with celery storage, begun several years ago, were to determine the factors which hasten decay in celery in storage houses; to learn the best methods of reducing the loss of celery in storage due to decay and mechanical injury; to determine the best type of crate in which to pack celery to be held in a cold-storage warehouse; and

to study the effect of the temperature of the storage room on the keeping quality of the celery.

The celery used in the experiments during the four years was grown and stored in western New York. Each experimental lot was packed in the field and crated in the storage house by representatives of the Department of Agriculture. In every instance the celery used was free from disease and was so handled that the different lots were comparable. Six types of crates were used—a standard crate, a partition-ventilated crate, a 16-inch crate, a 14-inch crate, a 10-inch crate, and an 11-inch crate.

The smaller crates appear to remove the two chief causes of spoilage—poor ventilation and breakage. In every instance the decay was much less in the small and partitioned crates than in the standard crates, say the specialists, in summarizing the results of the test. Of the crates used two or more years, the 14-inch crates gave the best results, followed by the 16-inch, the partitioned, and the 11-inch solid head, in the order given. Small crates cost a little more than the standard crate in proportion to their capacity, but this disadvantage is more than offset by the smaller percentage of breakage. Small crates are preferred by many storage-house managers and handlers of celery, because of the ease in handling and the smaller amount of breakage. In a market test made in January, 1916, celery in small crates sold for a much higher price than similar celery in standard crates handled in exactly the same way.

DRYING SWEET CORN.

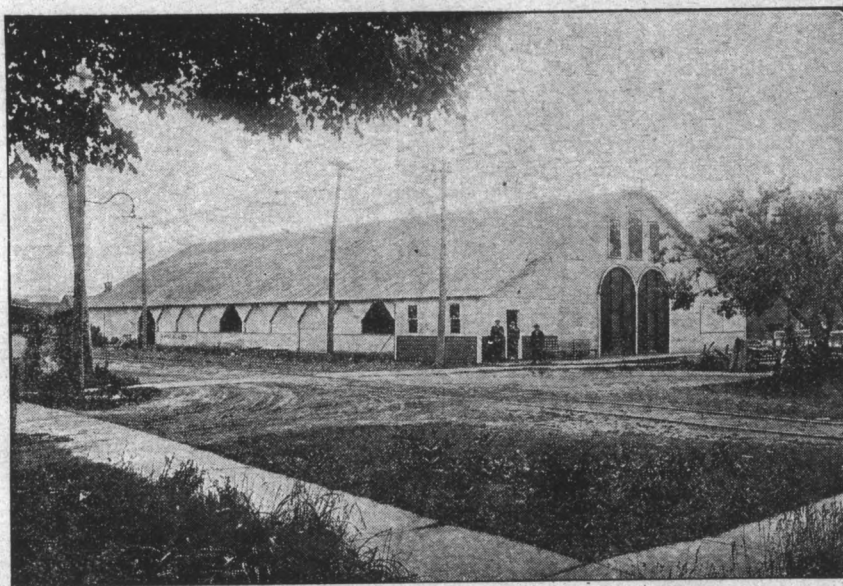
The following rule is contributed by a subscriber eighty-four years old. She dried corn in this way before canned corn could be bought, and plans to do the same way this year.—Ed.

Noting all the advice given in these strenuous times for drying of vegetables to add to the world's supply and save the use of containers, of which there is said to be danger of a shortage from the lack of material, I have thought to add my small quota, the drying of sweet corn, which may be preserved nearer to the fresh picked than any vegetable of which I know.

But I must preface my directions with an emphatic "don't," which is: Don't on any account boil the corn or allow it to come in contact with water, not even for one minute! The nourishing and toothsome constituents of sweet corn consist of sugar and starch, of which much is dissolved by boiling, even for a short time, and so lost entirely.

Shave and scrape the corn from the cob as in all directions, for evergreen corn two layers may be cut before scraping, spread it a quarter to three-eighths of an inch deep on plate, or baking tins, and place in the oven with a moderate baking heat, leaving oven doors only partially closed. Watch closely, and as soon as scalding hot and a crust formed, turn it over so all may be well scalded. When ready to turn again, two plates may be put in one and the empty one refilled. It will take lively work to keep supplies going and the whole may, after a few hours, be put in a larger pan and one day's work will dry a goodly quantity so as not to need any farther care except to be kept near the stove a day or two to attain the "crackling" dryness necessary to insure its not absorbing moisture from the air. One or two day's work for one person will dry a good supply for a good-sized family, and when once tried no other method will be thought of, for all the sweet and rich qualities will be fully retained. It will cook quicker if soaked over night, (cooking it, of course, in the same water), but this is not absolutely necessary. Store in paper sacks in a dry place and it will keep indefinitely.—Subscriber.

The Saugatuck Association



ONE of the three cooperative fruit shipping organizations which this season is marketing Michigan fruit for the first time, is the Saugatuck Cooperative Fruit Association, with its principal office at Saugatuck. This is a non-capital stock, non-profit organization. The membership fee is one hundred dollars, part payable in cash, and part by a note which can be used at the bank as collateral. The Association has rented for use for its first season a large dancing pavilion and such changes have been made as to render it suitable as a fruit packing house. From an office in one corner the president, secretary and manager direct the activities of the Association. A grading machine has been installed in the packing house and the fruits brought in by the members are graded according to quality and are packed in a uniform manner before being loaded for shipment. A siding enables the company to load cars direct from the packing house. When loaded the cars are billed for that particular corner of the world which at the time is hungry for the kind and quality of fruit grown by the Saugatuck horticulturists.

Grades for Potatoes

TWO standard grades for potatoes have just been recommended by the United States Food Administration and the United States Department of Agriculture. Results of field tests in grading and packing and of experiments in marketing graded and ungraded potatoes show that marketing potatoes by grades is desirable, practical, and economical.

Further, it has been ruled by the Federal Reserve Board that "potatoes, properly graded and packed and stored in a weatherproof and responsible warehouse, as evidenced by its receipt, would undoubtedly constitute a readily marketable, nonperishable staple."

The present prospect of a very large crop of potatoes, the food supply situation, the overtaxed transportation facilities, and the ruling that federal reserve banks may make loans against potatoes properly stored in approved warehouses emphasize, says the department, the importance of adopting uniform grades.

The No. 1 grade shall consist of sound potatoes of similar varietal characteristics which are practically free

from dirt or other foreign matter, frost injury, sunburn, second growth, cuts, scab, blight, dry rot, and damage caused by diseases, insects, or mechanical means. The minimum diameter of potatoes of the round varieties shall be one and seven-eighths inches, and of potatoes of the long varieties one and three-fourths inches.

The No. 2 grade shall consist of potatoes of similar varietal characteristics, which are practically free from frost injury and decay, and which are free from serious damage caused by dirt or other foreign matter, sunburn, second growth, cuts, scab, blight, dry rot, or other disease, insects, or mechanical means. The minimum diameter shall be one and one-half inches.

Reasonable tolerances are allowed for variations incident to commercial grading and handling and explanations of the terms "practically free," "diameter," and "free from serious damage," are made in Markets Document No. 7, which may be obtained from the United States Department of Agriculture, or from the United States Food Administration, Washington, D. C.

Farmers' Clubs

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

Associational Motto:

"The skillful hand with cultured mind is the farmer's most valuable asset."

Associational Sentiment:

"The Farmer: He garners from the soil the primal wealth of nations."

MEMORY DAY.

In the last issue Ex-Associational President J. T. Daniells, the father of the Memory Day movement in Michigan, presented pertinent suggestions on the appropriate observance of Memory Day in the several communities of the state. In this column will be found the Memory Day Hymn to which he referred and which is republished for the convenience of those of our readers who would use it for the purpose for which it was written.

Memory Day.

E. R. LAFFA. "Memory Day," September, 30. CHAS. H. GARDNER.

Copyright, 1910, by J. T. Daniells.

Since the establishment of Memory Day in Michigan, through the action of the Michigan State Association of Farmers' Clubs, its observance has become more general with each passing year. While the present year is one of peculiar trials and hardships; while we are called upon to respond to increased demands for our time and effort because of a great national emergency; while our sympathies are especially with the boys who have been called from our midst to defend the nation's honor in a foreign land, may we not be so impressed with the other duties of the hour as to forget the labor of love which we owe to the memory of our departed friends who have passed beyond the arena of human strife.

Let us, then, observe Memory Day, September 30, in a fitting spirit, collectively where possible; individually where collective observance is not practical. Let the graves of our departed friends be trimmed and decorated, as a symbol that during the coming year—and all the years in which their memory will be kept forever green—their virtues may be emulated in all our associations with mankind.

Grange.

AMONG THE LIVE GRANGES.

Newark Grange met August 11 with Bro. R. J. Knowlton, Master, presiding. The minutes of last meeting read and approved. Bills for janitor work and cyclone insurance allowed. Lecture hour was observed by singing "Tenting on the Old Camp Ground." All gave quotations from ritual. A recitation by Ivan P. Gable. The ladies told of what labor device they would like to have around the house. Sister Howland would like a power washer. Sister Knowlton would like to have a gas engine attached to the washing machine, cream separator and churn, also a big back porch of cement. Sister Lulu Johnson an electric flat iron. There were several other improvements suggested; the lecturer then furnished a treat of salted peanuts. The ladies of the Red Cross meet every Thursday afternoon at the Grange hall. All Newark ladies, whether they belong to the Red Cross or not, are urged to attend these Red Cross meetings and assist in the sewing as there is great need of our work.

Ionia County Pomona Picnic.—About 200 or more farmers and friends of Ionia county grangers gathered at Jor-



Courier of Soldier and Civilian

Our troops are now on the firing line in France. While at home every instrumentality of our government and private industry is being urged at top speed to insure victory. The telephone is in universal demand as courier, bringing to the front men and the materials of war.

From the farms the telephone courier brings foodstuffs; from the mines the telephone courier calls forth metals; from the factories this courier gathers manufactured products. The telephone courier leads troop and supply trains to the front; summons fighting flotillas and trans-

ports; and, in fact, leads practically every contributing unit of supply to the firing line.

At such a time, when the government is straining at its task and every industry is loyally contributing its energy, this national courier is constantly being used to call up the reserves. It is at the base of every contributing activity.

The right of way must be given to the military for the direction of troops and to the government for the marshaling of endless supplies. To do this, and also make the telephone serve all other needs, both patriotic and private, all must economize.



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Markets.

GRAINS AND SEEDS

September 25, 1917.

WHEAT.—Dealers and millers seem to be forgetting that the farmers in the wheat growing districts are so occupied with the fall work (which is crowded into a narrower compass by the lateness of the season and which must be performed by a less and less number of hands) that it is impossible for the delivery of the usual amount of wheat at this season. As a result the mills are scarcely getting enough of the grain to keep up with current orders for flour, which are large. A year ago No. 2 red wheat was quoted at \$1.56 per bushel. The local quotations, based upon the price established by the government, are: No. 2 red wheat \$2.19; No. 1 white \$2.17; No. 2 mixed \$2.15 per bushel.

CORN.—The weather is the one big factor in the corn deal. A week's variation in the time of general killing frosts will change the amount of merchantable corn by the hundreds of millions of bushels—consequently the dealers are keeping close watch of the reports of the weather bureau. The approach of the ripening season, however, is having an influence upon prices for cash corn where quotations show a tendency downward. On the other hand, there is some sentiment that present quotations for the new crop are low, for December corn advanced nearly three cents in Chicago on Monday. A year ago the local price for No. 3 corn was 87½¢ per bushel. Last week's Detroit quotations were:

	No. 3 Mixed.	No. 3 Yellow.
Wednesday	2.13	2.15
Thursday	2.13	2.15
Friday	2.13	2.15
Saturday	2.13	2.15
Monday	2.10	2.12
Tuesday	2.15	2.17

Chicago.—December corn \$1.21¼; May \$1.19½ per bushel.

OATS.—There is a good domestic demand for oats while the call from abroad is somewhat erratic. Prices are being well maintained. Deliveries from growing districts are not large. A year ago standard oats were quoted locally at 50½¢ per bushel. Last week's Detroit quotations were:

	No. 3 Standard.	White.
Wednesday	62½	62
Thursday	63	62½
Friday	62½	62
Saturday	62	61½
Monday	62½	62
Tuesday	62½	62

Chicago.—September oats 60½¢ per bu; Dec. 59¼¢; May 62½¢.

RYE.—Farmers are not selling liberally and the demand is on export account largely. Cash No. 2 is quoted at \$1.88 per bushel.

BEANS.—It is very difficult to judge the condition of the bean crop, consequently buyers seem to be holding aloof until they can get a better idea as to the amount that farmers will have to sell. The increased acreage, the lateness of the crop, the recent and the possibility of future frosts, all make the outlook uncertain. The Detroit board of trade quotes immediate and prompt shipment at \$7.75 per bu. At Chicago the trade is looking forward to the movement of the new crop. Michigan pea beans, hand-picked, are quoted there at \$7.85@8 and red kidneys at \$6.75.

SEEDS.—Prime red clover \$13.50; October \$13.75; alsike \$12.50; timothy \$3.55 per bushel.

FLOUR AND FEEDS

FLOUR.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$11.80; seconds \$11.50; straight \$11.20; spring patent \$13.80; rye flour \$11.30 per bbl.

FEED.—In 100-lb. sacks jobbing lots are: Bran \$36; standard middlings \$40; fine middlings \$45; cracked corn \$90; coarse corn meal \$85; corn and oat chop \$66 per ton.

HAY.—In carlots at Detroit: No. 1 timothy \$17.50@18; standard timothy \$16.50@17; No. 2 timothy \$15.50@16; light mixed \$16.50@17; No. 1 mixed \$14@14.50; No. 1 clover \$13@13.50.

Pittsburg.—No. 1 timothy \$22.75@23 per ton; No. 2 timothy \$21@22; No. 1 light mixed \$20.50@21; No. 1 clover, mixed \$19@19.50; No. 1 clover \$20@20.50.

STRAW.—In carlots on the track at Detroit: Rye straw \$9.50@10; wheat and oat straw \$8.50@9.

DAIRY PRODUCTS

BUTTER.—Demand active; market firm at 43¼¢ for fresh creamery firsts. Elgin.—Quality of butter shows improvement. Buyers bid 43¼¢ without finding sellers.

Chicago.—Market steady and buyers taking only enough for present requirements. Creamery extras are quoted at 43¢; extra firsts 42½¢; firsts 41@42¢; packing stock 36½@37¢.

POULTRY PRODUCTS

POULTRY.—(Live).—Poultry is in light demand and easy. Spring chickens 24@25¢; hens 23@25¢; ducks 24@25¢; geese 16@17¢; turkeys 24@25¢.

Chicago.—Supply is larger, and the market in good condition. Fowls sell from 21@22½¢ per lb; spring chickens 22½¢; ducks 18½¢; geese 16@18¢.

EGGS.—Stocks are light and production below requirements. Fresh firsts were quoted at 39¢ per dozen.

Chicago.—A steady feeling exists with slight advances. Fresh Michigan firsts sell for 37½@38¢; ordinary firsts 36@36½¢; miscellaneous lots, cases included 35@37½¢.

FRUITS—VEGETABLES

FRUITS.—Plums \$2.25@2.50 per bu; pears, Bartlett \$2.50@2.75 per bushel; peaches \$2@2.75 per bushel for Elbertas.

Chicago.—Pears, Bartletts \$2.25@2.50 for No. 1; Howell \$1.25 per bu; peaches, Michigan Elbertas \$2.25 per bu; plums, Michigan Green Gage \$1.75@2 per bushel.

APPLES.—At Detroit apples are quoted at \$5@5.50 per bbl. for common; fancy \$6.50. At Chicago No. 1 stock \$4@6 per bbl; No. 2 stock, according to quality and variety \$2.25 per bbl.

POTATOES.—Potatoes are in demand at \$1.65 per bushel. At Chicago Minnesotas \$1.15@1.25; Wisconsin at \$1.15@1.22 for White.

WOOL

An increased volume of trade gave added strength to the wool trade last week. Both private and government buying was in evidence. Many of the houses are selling direct to the mills for the manufacturing of goods for the government. Because of the dual demand stocks are beginning to look small, even at this early date. Prices are certain to hold firm and likely will advance to new high levels. Fleeces sold in Boston last week at from 54@85¢ per pound, with some Michigan unwashed delaine at 70@72¢.

GRAND RAPIDS

Tomatoes returned to the \$3 mark during the past week, due to the brisk demand, but eased off to \$1.25 on Monday. Potatoes were around \$1.40 early this week, but seem likely to go a little lower, with the buying price outside at 80@90¢. Good apples are \$1@1.50; plums \$1.25; peaches \$2@3. Eggs are quoted at 39¢.

DETROIT CITY MARKET

There was a big market Tuesday morning and the offerings of the farmers sold at fairly steady prices. Tomatoes are coming more freely with good stock going at \$2 per bushel; potatoes \$1.30@1.70 with quality varying widely; cabbage 45@50¢; cucumbers \$2@3.50 for medium to large, and 25@35¢ per hundred for pickling; apples \$1.25@1.50; plums \$2.50@3; onions \$1.75; grapes \$2 per bu; corn \$1.25 per five-dozen bag; peppers (green) \$2 per bu; eggs 55¢ per dozen; loose hay offered more freely at \$14@18 per ton.

LIVE STOCK

BUFFALO.

September 24, 1917.

Receipts here today as follows: Cattle 288 cars; hogs 55 d. d.; sheep 35 d. d.; calves 1100 head.

With 288 cars of cattle here today and with 40,000 in Chicago the trade opened very slow and unevenly lower, bulk of all grades 50¢ lower, and in some cases 75¢, except canners, cutters and stockers which sold strong. The bulk of the bulls sold steady. We look for a fair run again next Monday and about steady prices.

We had a fairly liberal run of hogs today and the quality rather poor. There were a few choice dry-fed hogs that showed a little advance over Saturday, while the bulk which were common sold slightly lower than the close of last week. The very best hogs here

sold at \$19.40, with the bulk from \$19@19.25, as to quality. Pigs and lights \$18@18.25; roughs \$17.50@18; stags \$15.50@16. A few common hogs unsold at the close and the prospects no better.

With a moderate run of lambs today our market opened up active and prices 25¢ higher than the close of last week. All sold and we look for shade higher prices balance of the week.

Lambs \$17@17.25; cull to common \$12@16; yearlings \$12.50@14.50; wethers \$11.50@12; ewes \$11@11.25; bucks \$7@9; best calves \$16.25@16.50; common and light \$13.50@16; heavy \$10@14; grassers \$6@7.50.

CHICAGO.

September 24, 1917.

Cattle, Hogs, Sheep.
Receipts today.. 38,000 20,000 24,000
Same day 1916.. 23,595 31,902 33,421
Last week..... 79,312 59,050 91,779
Same wk 1916.. 70,641 114,199 122,618

Cattle receipts today proved too heavy for the demand and prices went sharply lower. Outside of a few of the best steers, the general cattle market was 25@50¢ lower, the late trade getting the full decline. Top steers sold up to \$17.85, against \$17.90 last week, the trade for such grades today be called steady. The run included about 12,000 western range cattle that were slow to clear at the decline.

The hog run was about as expected. Demand was good and prices ruled generally 10@15¢ higher, some showed even more advance. Top hogs today sold at \$19, being 15¢ higher than the previous day and the highest in about two weeks. Bulk of the hogs sold at \$18.10@18.90. Pigs sold mostly 25¢ higher, good to choice grades selling at \$17@17.50 with the prime strong weights even higher. Average weight of hogs last week 238 lbs., against 238 the week previous and 231 lbs. a year ago.

Sheep receipts today were large and the trade slow. Aged sheep and yearlings sold steady. Killer lambs sold 25@50¢ lower. Feeding lambs were scarce and prices showed little change, some of the latter selling up to \$18.25. Native ewes sold up to \$11.75, yearlings \$13.50 and western feeding yearlings up to \$12.25.

The records recently made for steer prices did not last long because a load of 1,467-pound beeves sold last week up to \$17.90, being 10¢ higher than the previous record. At the same time prime yearlings sold up to \$17.60, also a new high mark. The general trend of prices in the steer line was stronger and with prime finished offerings so scarce, new records are expected to be put into force in the near future. For the week prices ruled steady to 25¢ higher. The good to choice grades showing the advance while the plain to medium grades changed very little and at the finish were slow sale at weak prices. Receipts were larger but the general demand each day was fairly good. Western rangers for the week totaled about 30,000 head, being the largest run for the season to date. Prime Montana cattle averaging 1,412 pounds sold at \$15.75, while Canadians averaging 1,388 pounds sold at \$15 and distillery cattle averaging 1,406 and 1,444 pounds sold at \$17.60, all being new records for the classes. Bulk of choice corn-fed steers sold during the week at \$16.60@17.25, with the prime grades higher, while good kinds went around \$14.25@16.50 with the medium classes at \$12@14.25 and the common to fair grades at \$8.50@10.50. Yearling steers of common to fair quality sold at \$11@15 while the good to prime grades went at \$15.25@17.60. The butcher stock market proved higher at the start of the week but the advance was lost before the close, late prices being no better than steady. Prime heifers were scarce, some selling up to \$13 and higher while some in load lots with steers going up to \$15 and better. Bulk of good to choice heifers sold around \$9@10.50 while the medium to fair kinds went around \$7.50@8.75 and the plain grades down to \$7.25 and lower. Cows of heavy weight and prime quality sold up to \$12 and higher while good to choice lots went at \$8.50@9.75 and the fair to medium classes around \$8@8.25 with the common grades down to \$7.50 and lower. Stockers and feeders were in good demand most days but the call was largely for the strong weight kinds. Light weights were neglected which caused a liberal number to go over unsold at the close. Fancy heavy western feeders sold up to \$12.25 during the week and numerous lots of natives and westerns went up to \$10 and higher. Fair to good kinds sold at \$8.50@9.75 with the plain grades around \$7.75@8.25 and the common classes down to \$7.50 and lower.

Hog supply was smaller during the week, being one of the smallest week's supply on record. Prices were unevenly higher. Average selling was right at 50¢ over the previous week. Top

hogs for the week sold at \$18.90 which was only 25¢ higher but many of the cheaper classes sold 75¢ up. The range of prices grew considerably narrower. Proportion of good hogs was rather small, yet packers wanted the weighty kinds for the lard they contain. Considering the light receipts, the general hog market did not advance very much as far as the tops are concerned. Shipping orders were smaller and packers confined their buying mostly to the lower prices. The movement of spring pigs to market has not yet started and the trade expects that they will be held back while the weather is favorable. Pigs were in good demand and sold 75¢@1 higher, the prime strong weights selling up to \$17.25@17.50, as against \$16.25@16.75 for the week previous.

The run of sheep and lambs for the week was considerably larger than the previous week. Country demand for lambs was good most days but killer call was light as the outside markets were also well supplied. Range stock is moving in a free manner and bulk of offerings is lambs. Range lambs, as well as natives to killers sold 25¢ lower than the previous week while feeding stock was 15¢ off, \$18.15 being paid at the finish for stock to go to the country. Aged stock was scarce and showed little change from the close last week. Native ewes sold up to \$11.50@11.75, while western ewes sold up to \$12 and yearlings to \$13@14. Bucks went around \$8@9.50, with the common kinds lower. Feeding ewes sold during the week at \$7.50@9 and breeders \$11@18, the latter lot being the highest on record, coming from Michigan and going to an Illinois feeder. Native lambs at the high spot reached \$18.35 while rangers went up to \$18.60 for a record. Washington ewe lambs went to a Kentucky feeder at \$18.60 but the top for strictly feeding lambs was \$18.40.

Horse receipts for the week were larger than the previous week. Demand for general run of horses was better and prices ruled strong. Eastern shippers were liberal purchasers while local buyers took the usual number. The United States government was among the buyers this week for artillery and cavalry mounts which added to the action for such grades.

Chicago Top Prices a Year Ago.
Best heavy steers \$11.30; medium grade \$9.75; butchering cows \$8.25; canners \$4.50; cutters \$5.25; stockers \$5; feeders \$7.75; calves \$13.25; hogs \$11.30; ewes \$7.50; wethers \$8.75; yearlings \$9; lambs \$11.

The Michigan railroad commission has delayed for further investigation and hearing the new classes of freight rates filed by the Michigan carriers to become effective the latter part of this month. Hearings will be held some time in October.

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THIS IS THE LAST 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 time.

DETROIT LIVE STOCK MARKET.

Thursday's Market.

September 27, 1917.

Cattle.

Receipts 2981. Market slow and 25 @50c lower than last week on everything but canners, which are steady. Best heavy steers \$9.50@10.75; best heavy weight butcher steers \$8.50@9; mixed steers and heifers \$8@8.25; heavy light butchers \$7@7.50; light butchers \$6@6.75; best cows \$7.50@7.75; butcher cows \$6.50@6.75; common cows \$5.75@6; canners \$4.50@5.50; best heavy bulls \$7.25@7.50; bologna bulls \$6.50@7; stock bulls \$5.50@6; feeders \$7.50@8.50; stockers \$5.50@7; milkers and springers \$45@100.

McMullen, K. & J. sold Hyman 4 cows av 930 at \$6.75, 3 butchers av 810 at \$7.25; to Kamman B. Co. 11 steers av 862 at \$7.50, 1 bull wgh 700 at \$7.25, 2 steers av 880 at \$8.50, 25 do av 993 at \$9.25; to Converse 9 cows av 877 at \$5.50, 7 do av 940 at \$5.65; to Breitenbeck 20 butchers av 720 at \$7; to Newton P. Co. 1 bull wgh 1120 at \$7; to Bell 20 stockers av 618 at \$7; to Nagle P. Co. 4 steers av 925 at \$8.75; to Grant 35 butchers av 560 at \$6.30; to Sullivan P. Co. 5 steers av 930 at \$8.70; to Goose 9 butchers av 588 at \$6.30, 7 do av 560 at \$6; to Converse 5 do av 684 at \$6.25; to Golden 22 do av 507 at \$6.15; to Hammond, S. & Co. 7 cows av 844 at \$5.50, 8 steers av 785 at \$7.50, 16 do av 900 at \$8.50; to Mich. B. Co. 8 do av 887 at \$8; to Bray 3 do av 830 at \$7.50, 2 cows av 970 at \$6.75, 2 do av 1005 at \$6.50; to Bright 6 feeders av 800 at \$7; to Mich. B. Co. 6 butchers av 831 at \$7.25, 18 do av 843 at \$8; to Newton B. Co. 2 steers av 910 at \$7, 25 do av 866 at \$8.

Bishop, B. & H. sold Hyman 1 bull wgh 850 at \$6.75; to Converse 3 cows av 975 at \$5.50, 4 do av 950 at \$5.50, 4 do av 850 at \$5.50, 2 steers av 1370 at \$8.50; to Parker, W. & Co. 18 steers av 1050 at \$9.75; to Conway 3 bulls av 600 at \$6.25; to Mason B. Co. 1 bull wgh 1700 at \$7; to Converse 6 cows av 890 at \$6.75; to Walk 14 butchers av 613 at \$6.50, 2 cows av 900 at \$6; to Buck 10 feeders av 715 at \$7; to Shipiro 23 butchers av 745 at \$7; to Hull 10 feeders av 750 at \$8, 4 do av 852 at \$8; to Goodgold 20 butchers av 750 at \$6.60; to Converse 3 cows av 1133 at \$6; to Resnick 15 butchers av 556 at \$6.50; to Ratner 11 steers av 885 at \$8; to Rattkowsky 10 butchers av 707 at \$6.75; to White Bros. 1 ox wgh 1400 at \$8.50, 12 cows av 1066 at \$7.75; to Thompson 4 steers av 980 at \$8.50; to Birnfeldt 8 butchers av 727 at \$5.75, 6 do av 804 at \$6.75; to Grant 4 do av 725 at \$6.40; to Hammond, S. & Co. 12 do av 812 at \$7.25; to Garber 18 do av 608 at \$6.15; to Nagle P. Co. 2 steers av 925 at \$9.50; to Parker, W. & Co. 4 do av 1100 at \$9, 14 do av 880 at \$8.50, 11 cows av 980 at \$5.75, 3 do av 1083 at \$7.

Veal Calves.

Receipts 658. Market slow. Best \$15 @15.50; others \$7@14.

Sandel, S., B. & G. sold Goodgold 4 av 180 at \$6.50, 4 av 275 at \$6.50, 2 av 230 at \$7, 2 av 130 at \$12, 9 av 250 at \$7; to Thompson 2 av 155 at \$15.50, 2 av 170 at \$15.50, 3 av 150 at \$15.50, 1 wgh 160 at \$12, 18 av 165 at \$15.50, 2 av 225 at \$9, 6 av 145 at \$15.50; to Mich. B. Co. 1 wgh 170 at \$15.50, 2 av 140 at \$15, 2 av 160 at \$15.50.

Sheep and Lambs.

Receipts 6123. Lambs dull and 25 @50c lower; sheep steady. Best lambs \$15.75@16; fair lambs \$15@15.50; light to common lambs \$13@14; fair to good sheep \$9.50@10; culls and common \$5@6.50.

Bishop, B. & H. sold Chapman 22 sheep av 115 at \$10.25, 5 do av 120 at \$10; to Dunn 22 lambs av 70 at \$14, 8 do av 80 at \$16.25, 27 do av 80 at \$16.25, 4 do av 85 at \$16.50, 42 do av 75 at \$16.25, 24 do av 65 at \$14, 46 do av 75 at \$16.25; to Sullivan P. Co. 12 do av 75 at \$16, 86 do av 75 at \$15.75, 70 do av 65 at \$14.50; to Nagle P. Co. 147 do av 80 at \$16.15, 346 do av 75 at \$16; to Sullivan P. Co. 193 do av 75 at \$15, 43 do av 77 at \$16; to Swift & Co. 8 do av 95 at \$15.50, 413 do av 75 at \$16, 228 do av 80 at \$15.75.

Hogs.

Receipts 4805. Pigs 25c higher, at \$17@17.50; mixed hogs 10@15c higher at \$18.50@19.10.

Sore Teats.—For several weeks one of my cows has been troubled with sore teats. J. B., Olivet, Mich.—Apply equal parts of glycerine and compound tincture benzoin to sores once a day.

Veterinary.

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

Obstructed Teat.—I have a three-year-old heifer that has a bunch in upper portion of center of teat which prevents the free flow of milk. By stripping, which is a tedious process, I can empty this quarter of milk, but this makes double work. C. K., Conklin, Mich.—These are difficult cases to treat successfully. In some cases this little polypus or growth can sometimes be rimmed out and in other cases be absorbed by applying one part iodine and nine parts lard every two days, directly over the bunch. Surgical work on a teat of this kind must be well done; furthermore, the operator must have suitable instruments or it had better be left alone.

Shy Breeder.—Tuberculosis.—Would like to know what is the matter with my four-year-old Holstein cow? She freshened last October and has come in heat regularly every six weeks, been bred four different times, but fails to get with calf. How can I tell if my cows have tuberculosis? J. B. Y., Saginaw county, Mich.—Your cow has perhaps cystic ovarian trouble. A competent Vet. can perhaps crush these cysts by manipulation, through rectum and vagina, which, when done she may breed. The tuberculin test, which is not expensive, is a pretty certain diagnostic agent in ascertaining whether your cattle are free from tuberculosis or not. If you have no local Vet. who is available, write your state veterinarian and he will doubtless arrange to have your herd tested with tuberculin.

Bruised Udder.—Sore Udder.—I have a three-year-old Jersey cow which perhaps bruised udder ten days ago; since then one-quarter of bag has been quite hard. I bathed it with turpentine and later applied salt and vinegar, and still later put on antiphlogistine; none of these remedies appear to do it very much good. I also have a two-year-old heifer which came fresh last July that has small sores on teat. D. D., Jackson, Mich.—Apply one part fluid extract phytolacca, one part fluid extract belladonna and ten parts lanolin or olive oil to caked portion of udder three or four times a week. Gentle hand-rubbing of udder twice a day will have a good effect. Dissolve 1 oz. of hyposulphite of soda in a quart of water and wet sore teats twice a day.

Ptomaine Poison.—I had two April pigs that weighed about 150 lbs. each which I had been feeding separator milk, bran, plenty of rich swill from a camp nearby, which contained plenty of meat, bread and pancakes. Both of these pigs took sick at the same time, trembled more or less, acted weak, could scarcely walk, both became stupid, were inclined to stand with head against wall, and appeared as if they wanted to climb up the side of building. I gave them both anema which moved bowels freely, and I also bled them from the ears. One died five hours after taking sick, the other lived for twelve hours. I cut them both open but found none of their vital organs diseased. What caused their death? W. J. A., Elmira, Mich.—Doubtless the food that you fed them contained ptomaine poison and they died from the effects of it. Perhaps some of the meat was partially decomposed that you fed them.

Thin Horses.—Worms.—Lice.—I have two horses that I am working hard seven or eight hours a day, but it is not what is called laborious work. These horses have been thin for some time and do not lay on flesh. I would also like to have you give me a remedy for worms in horses, and another that will kill lice on colts. I am not sure that my colts are troubled with lice. D. P., Davison, Mich.—Doubtless you are aware that it is next to impossible to put flesh on certain horses, especially if they are working. Unless you intend to market your horses, they are possibly as useful in their present thin condition as if overly fleshy. It will be no mistake to ascertain if their grinder teeth are in a normal condition or not. The teeth may require floating. Mix together equal parts of cooking soda, ginger, gentian and fenugreek, and give each horse a tablespoonful at a dose in feed three times a day. Santonine is the best known worm remedy for live stock; but it should not be given to animals unless you know they are wormy. If your colts are not troubled with lice, don't treat them. The coal tar preparations and the lice killing powders that are regularly advertised in this paper possess merit and you can safely use any one of them.

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Will furnish any style body.
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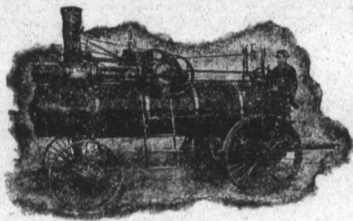
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For Sore Neck in Horses, use Dr. Lape's Never-fail Healing Powders. Price 25c. For Flies, use Dr. Lape's Fly and Insect Destroyer. 1 gal. \$1.00. Ask Your Dealer for Dr. Lape's Guaranteed preparations. Money back if they fail to do all we claim.

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22 H. Peerless steam traction engine.
20 H. Huber, 18 H. Gear-Scott, 18 H. Pitts,
18 H. Huber, 18 H. Nichols and Shepard,
18 H. Baker, 16 H. Huber, 16 H. Pitts,
15 H. Case, 15 H. Port Huron, 12 H. Huber;
15-25 International gas tractor, 16-33
Flinchbaugh gas tractor, 18-35 Avery tractor;
16 H. John Deere portable gas engine, 12 H.
Alamo, 12 H. I. H. C. 18" and 16" Paper cutter,
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HAY Ship To The Old Reliable House
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Reg. Shropshire Rams and Ewes For Sale.
Prices reasonable.
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Shropshire Ewes Good ones 5 & 6 years old \$30.00 each. Yearling rams & ram lambs \$35 up. KOPEKON FARMS, Coldwater Mich. Sheep at Lupton, Ogemaw County.

Registered Shropshires 50 ewes 1 to 4 yrs. old 75 ewes and ram lambs also a few yearling rams of quality and breeding. Priced right. Flock established 1890. C. LEMEN, Dexter, Mich.

Shropshires Big, early, reg. ram lambs, for coming fall trade, sired by imp. Nock ram. Milo M. Gibson, R. 5, Lapeer, Mich.

For Shropshire Yearling or Lamb Rams and P. C. Hogs, write or call on ARMSTRONG BROS., R. 3, Fowlerville, Mich.

OAKDALE STOCK FARM. Shorthorn Cattle and Shropshire Sheep. Stock for sale. W. J. Leaster, Belding, Mich.

RAMS: Rambouillets and Hampshire for sale. A. A. WOOD & SON, Salsine, Mich.

Registered Shropshire Yr. and Lamb Rams, one 3 yr. old flock header. A 1 wool-mutton type. G. P. ANDREWS, Dansville, Mich.

Registered Spanish Merino Black Top Rams for sale, 1 and 2 yrs. old. RALPH N. HAYNER, Webberville, Mich.

MERINOS & Delaines, having quality, size, oily fleeces, long staple, heavy shearers. Rams for sale, delivered, S.H. Sanders, R. 2, Ashabula, Ohio.

Shropshires a few choice Ram lambs; one three yrs. old. DAN BOOHER, R. 4, Ewart, Mich.

WESTERN grade ewes, healthy and in good flesh, all 2 yr. olds. Some pure bred rams. BARNARD SHEEP RANCH, R. 5, Clare, Mich.

OXFORDS 18 Ram lambs at \$25 each. MEADOW BROOK FARM, EARL C. MCCARTY, Bad Axe, Mich.

FOR SALE A few registered American Delaine Rams, 1 and 2 yrs. F. H. CONLEY, Maple Rapids, Mich.

Registered Oxford Down Ram lambs for sale. Address OLMSTED and J. SPAANS, Muir, Mich.

Oxford Ram Lambs For Sale. W. E. GARDINER, R. 4, Morley, Mich.

Cotswolds. Large Yearling and ram lambs. Sired by Canadian ram. A. M. BORTEL, Britton, Mich.

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For Sale Reg. Black Percheron Stallion Colt

Weighing 1600 pounds at 24 mos. old Sired by a Stallion Weighing 2100 pounds well bred and priced to sell. M. A. Bray Est., Okemos (Ingham Co.) Mich.

SHETLAND PONIES 200 head to select from. Special prices on colts for August and September. Write Dept. E, The SHADYSIDE Farms, North Benton, Ohio.

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What of the Fall Pigs?

By W. F. TAYLOR

I DO not recall ever having seen so few young pigs at this time of the year, in our locality, and yet, in point of feed stuffs we have been more fortunate here than in many other parts of the state.

The supply of feed in sight, usually regulates the number of hogs, because pigs may multiply rapidly at the will of the owner, and when there is an abundance of feed he will permit them to come along, but if he sees nothing coming along to feed them, he fattens his brood sows and the pigs are not.

This matter of the supply of feed is of tremendous importance. Last spring many people whose knowledge of English far exceeds their information about matters pertaining to the farm, were writing about increasing the meat supply by growing large numbers of chickens. They had it all figured out—if we would only turn our attention to the hatching of chickens, we might greatly add to the country's supply of meat in three or four months. Chickens would grow so quickly, and so many of them might be hatched in a few weeks. Well, we hatched the chickens in large numbers, but the supply of feeds grew inversely in proportion to their appetites, and now with cracked corn selling at \$4.50 per hundred, or higher, there has been a great scramble to sell the chickens for broil-

er and save the corn. The consequence is, that those who have grown the chickens have hardly gotten pay for their feed, and the meat supply is not greatly increased.

It is easy enough for the man in town who has somehow learned how many small pigs ordinarily make a family of average size, and how often the pig family may be expected, to tell his farmer friend how to increase the meat supply. But if that city mathematician had to buy corn for those pigs and depend on their growth for a living, even at the present high prices of pork, he would have to know more than the average man knows about feeding hogs or he would get discouraged and go back to town.

Just now, with fall pigs so scarce, we know of now and then a man who does not know what to do with the few he has. It is all on account of the feed situation. Future prices are so uncertain. The corn crop is very backward. Had the frost held off until the middle of October there would have been a fair crop of well ripened corn in many localities in the state, but having had a frost in the early part of September we must put more of our corn into the silo, and try to be thankful for a silo to contain it.

Patriotism and Profit.

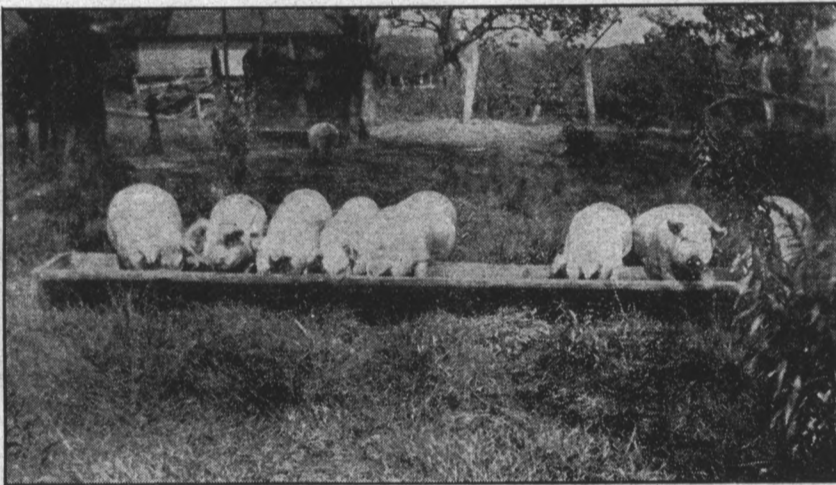
The question is, how shall we handle these fall pigs in order to make the largest amount of pork from them at the least cost? I believe that the average farmer is just as loyal to his country as the average soldier, and honestly wants to do his "bit," in the hour of his country's need. But he does

not want to do it at a loss, if he can help it, and he should not be blamed for this. The munition men are not working at a loss. True, they are running tremendous risks, much greater risks than the farmer, but as a class they are doing very well financially. The farmer then, is patriotic. He is glad to do his part, and he will work hard and long to perform it, but he does not want to lose money.

There is a great shortage of meats. Every fall pig that can be saved alive, should be fed and made to grow just as large as it will grow within a reasonable time in order to add to the world's supply of food, but how shall we do it and not lose out?

First, we must conserve our grains. Much corn will be needed for human food within the coming year. We ought not to put large amounts of ripe corn into the silos this fall, if we can possibly obtain help to break it off, at reasonable prices. Oats and barley are yielding heavily and should be bought at reasonable prices. The cotton crop is good, and we ought to be able to obtain cottonseed meal at reasonable rates. Michigan will have a fair sugar beet crop and dried beet pulp should be obtainable at a price that will help relieve the situation greatly.

In short, we can afford to break off ripened ears of corn and put stalks



A Fine Litter of Three-months-old Pigs—they Should be Fed Out.

and small and unripe ears in the silo, and buy grain to supplement the ration for the cows.

This ought to leave some corn for the pigs. It takes but little corn in connection with skim-milk to keep the pigs growing fairly well. With a large oat crop, and with considerable barley, middlings will be in fair supply and some may be afforded the pigs. If these feeds should be very expensive, it will not be advisable to feed them too liberally, but the pigs should at any rate be kept growing.

They should be given plenty of exercise and a warm dry place in which to sleep. This matter of exercise is one of the most important things in the handling of winter pigs.

Run Hogs After the Cattle.

The feeders of beef cattle almost always depend on hogs to follow the cattle and gather what they can from the droppings, but thousands of farmers who keep but few cattle, do not provide for the saving of grain in the droppings, and much is lost in this way. In no case should pigs be wintered without giving them access to the manure from the cattle unless cattle are so poorly kept that nothing worth while is possible from that source. As cattle are fed on the average farm, pigs should get a large part of their exercise in winter in gleaning from the droppings what they may find that they can use as food.

Then there is the by-product from Michigan's big bean crop. Cull beans are not good food for hogs when fed alone, but they are excellent when used in connection with other feeds not so

rich in protein. Many feed them alone, and I fancy I hear them objecting to what I have said in this regard. But Reader, careful experiments have been made at our experiment station again and again, and it has been demonstrated that if other feed can be had at a reasonable price, beans should not be fed alone. But they do form an excellent part of the ration of the hog any time, and just now when other feeds are so scarce, every man who is keeping hogs in a bean district ought to provide for the feeding of them before it is too late.

We ought not to let a single ton of this feed get out of Michigan if we can be quick enough to fasten it.

But I want to say a word about utilizing wastes of other kinds for the hogs. After pigs have grown to weigh a hundred pounds or more, they will consume a considerable amount of ensilage. If we have more than the cows are going to need, it is good practice to feed a portion of it to the hogs. On many farms, a considerable amount of clover and alfalfa chaff is wasted. The hogs will eat this with a relish if not too much is fed at once, and it will do them good.

This is the time when we must save the wastes. Much is said about the wastes in human food, too much, I am sure, as applied to the average farm home. I refuse to believe that the average woman on the farm wastes much food. It is important, however, to save the little that is being lost, and it is just as necessary to conserve all the sources of growth in our live stock.

Eking Out the Grain Supply.

Conditions are going to vary a great deal. Some men are going to have plenty of feed, and will be able to grow their pigs to early maturity, while others will find it hard indeed to obtain any considerable amount, and must therefore either sell their pigs when small, or keep them in a very thin condition until later on. But if these people who have little or no grain, would purchase a small amount, adding some cull beans, allowing the pigs access to the droppings of the cattle, giving them the chaff from the clover hay they would be able to keep their pigs growing fairly well all winter. And while they might not be fit for the block, they would still be of fair size in a thrifty condition, ready to make rapid growth when turned out to grass next spring, and would be ready for market soon after.

Pigs are going to bring a very high price all winter, without doubt, and we confidently look for the highest prices ever known next spring. In closing, I want to ask every man who has fall pigs to try to keep them and make the very most out of them. If he is satisfied that he cannot feed them, then the next best way is to sell them to someone who can. But to do this is confession of inability that is not good to hear. The writer is not afraid to try to feed pigs under the present circumstances. He believes he can make good at it. He does not want to take over any other man's chance of personal gain. The world is at war. One side is contending for the right of certain individuals to rule over others: for the privilege of one class of men to direct the activities and largely shape the ambitions and hopes of other classes. But we and our allies are making material sacrifices and shedding our blood for the right of the average man to be just as efficient physically, intellectually, and morally as it is possible for him to be. This is democracy. I would apply it to agriculture, because it means more and better homes and a greater America.

Calf prices again established new records when \$16.25@16.35 was paid and small lots went up to \$16.50. The general good demand for all kinds of meat has carried the vealers along until the prices made new marks. In this way the dairy farmers of the country get their share of war time values in the live stock business, outside of their regular products.

Increasing the Meat Supply

By N. A. CLAPP

IT looks as though we are facing conditions extraordinary when the United States government through its President and the heads of the various bureaus of the Department of Agriculture, consider it expedient to not only make a special effort to increase the acreage planted to the several food crops, but to stimulate and foster a greater interest in the breeding, feeding and marketing of more live stock. It is stated in the Weekly Letter from the Department of Agriculture, that "The Bureau of Animal Industry will seek to bring about increased production of hogs and poultry, the two live stock products capable of most rapid increase."

The method promised to be adopted, is that of sending out among the farmers, commissioners under instruction and pay from the government, to bring before the farmers the benefits to be derived from a speedy increase of live stock that can be raised on the farms and sold in the markets to meet the needs of the consumers in all parts of the country and supply some of the meats required by the men in the armies who are representing the allied nations in the great effort to secure universal liberty for mankind throughout the civilized nations of the world.

It seems that the government officials look upon the farmers as a class that have not awakened to the important facts before them and the necessities of the case, or they would not consider it advisable to send special envoys to them, in order to convince them of the fact that they are neglecting opportunities to secure great profits from producing live stock under present conditions. They may also appeal to them from the standpoint of true patriotism, which may awaken the noblest sentiment within them and persuade them to act when they would otherwise be indifferent to their appeals.

That the numbers of hogs in the hands of farmers are below the normal supply at this time of the year, is indicated by the small numbers coming to market and the extremely high prices which have prevailed during the last two months. The prices have ascended to the point where consumers refuse to buy. These conditions have been brought about on account of the high prices for grain. Breeding stock has been sold, even before it was in a good marketing condition, and many, very many farmers have been planning to sell grain at the prevailing high prices, rather than to bother with breeding, feeding and marketing hogs or other kinds of live stock.

The Remedy Recommended.

In order to correct these conditions which seem to be radically wrong, the Bureau of Animal Industry is arranging to send men commissioned to talk to farmers and persuade them to again engage in breeding and feeding hogs for market. It is believed, and for good reasons, too, that after the great crop of corn, which is now ripening has been harvested, the prices for grain feeds will not be as high as at the present time. If such predictions come true the men who will be feeding their cheaper grains to pigs will be on the better side of the grain and meat business.

The scheme of stimulating and encouraging efforts along the lines of meat production is a commendable one. The people of the whole country are calling for more meat and are willing to pay for it at a reasonable price. And farther, the armies in the European war are in need of meat and must have it in order to perform the greatest service to their country and the cause of universal liberty.

The reason assigned for singling out swine breeding and giving it first at-

tention, is that hogs increase more rapidly than other kinds of stock, and can be fed to acceptable weights sooner than cattle. And still farther, the pork meats are easily handled under varying conditions, and readily meet the needs of the soldiers, either in camp or on the battlefield. It may be said of the hog that although he has been derided and condemned for some of his outstanding traits, both in sacred and secular story, when it comes to the pinch of war, the toothsome cuts from his fat back, hams and bacon, more fully meet the emergency needs of the armies than anything else yet discovered. For these reasons, if we are true patriots, and I think all farmers are, let us respond to the urgent requests of the Bureau of Animal Industry, and help to spread the gospel of quick and good meat supplies, both for our home needs and the necessities of the armies.

Other Reasons Urged.

Although the hog has been one of the constant accompaniments of the dwellers on the farms for centuries, his full value and real merits have not been generally understood. We have looked upon the hog as a distinctively grain eater—an expensive creature to have around—and have not accurately considered him in all his characteristics. We have overlooked the fact that he is an omnivorous animal, choosing his nourishment from a great variety of feeds. We have often very grudgingly tossed him some inferior fruits and vegetables, more to get rid of them than with the idea of furnishing him nourishment, and gave but little consideration to the fact that with him "variety is the spice of life," as well as with other animals, and that he can be much benefited by a change in feed from the narrow corn, and corn alone, ration. We have also overlooked the fact that the hog relishes the herbage that grows in the fields and can get much benefit from consuming them and converting the nutrients contained in them into blood, muscle and vital organs, all of which have a value in the markets where food is sought and bought for consumption in the family. And farther, we have overlooked the fact that the meat, both fat and lean, grown while the hogs are at pasture, is more palatable, healthy and nutritious, than that which is produced when confined to the pen or yard and fed only grains.

Fertility of the Soil.

As an aid in building up and maintaining soil fertility, the hog has not been appreciated at his full value. The manure is the richest, the quantity to proportionate weight the largest, and its actual value as a fertilizer is the greatest to proportionate weights of that of any of our domestic animals. When pastured on some clover or alfalfa, his favorite forage feed, he does not crop it as closely as sheep or cattle, and the remaining portions of the plants add to the organic matter when turned under, making the benefits secured from pastured lands very pronounced and lasting.

In our efforts to stimulate an interest in live stock and meat production on the farm, let us not forget that the hogs are among our most profitable animals in several ways. They increase rapidly and can be made to make the gains in weight most cheaply and economically; they grow rapidly, reaching market demands quickly, yield a carcass with the least waste from the consumer's standpoint, and the meat can be preserved and utilized under more varying conditions than that from any other kind of animal. Whether we are raising our animals for business or patriotic reasons, let us realize that we can secure the greatest benefits by doing justice to the hogs on the farm.

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This Company is backed by more than 500 of the best live stock farmers of the state, and we have more than \$100,000 deposited with the State Treasurer as a guarantee of the Company's responsibility. We insure all live stock—horses, cattle, sheep and hogs against death from any cause. We issue individual and blanket policies covering any and all conditions—herd policies, feeding policies, shipping policies, 30 day foaling policies, etc. We want a local agent to represent us in every community in Michigan. We want every farmer in the State of Michigan to insure his live stock with us. We will give you a square deal. Write for information.

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Do you appreciate the value a Herd Sire would be to your herd, if from tested Dams of over 20 lbs. butter 7 days and 16 to 20 thousand pounds milk in 10 months.

We have two young bulls for sale old enough for service October of this year, whose dams made the above records.

These calves are offered at \$75 each. Their dams will be re-tested this winter and we certainly expect them to make 30 lbs. butter in 7 days. You cannot lose on them. They are the best of dairy type. All stock guaranteed as represented.

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Registered Holstein Friesian Heifers. 3 to 6 mos. old. Some from 30 lb. sires. Priced to sell. Fred J. Lange, Sebawaing, Mich.

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For Sale:—17 mos. old bull whose 7 nearest dams average 560.1 lb. milk and 25,679 lb. butter in 7 days. Sire is by the son of a 32.9 lb. cow and from a 31 lb. 4 yr. old cow. Dam is a 22.5 lb. Jr. 3 yr. old daughter of a 26.5 lb. Jr. 4 yr. old cow, whose dam is a 27 lb. cow.

Ready for immediate heavy service. Priced to sell immediately. Send for pedigree and price.

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Buy Your Bulls From Parham's Pedigree Stock Farm Choice Registered Holstein calves from A. R. O. cows. RAY B. PARHAM, Bronson, Michigan.

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FOR SALE Any part of six Holstein-Friesian grade cows. These are very well bred. Will sell at a reasonable figure. WM. G. GAGE, Owner, Saginaw, Mich.

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FOR Sale young Holstein bulls, sired by bull out of a world record cow and with 3 sisters having records of over 1200 lbs. butter. Best of breeding. Priced not much higher than best. ALLEGAN STOCK FARM, E. Brackett, Prop. Hartford, Mich.

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Holstein Bull Calf two months old. Dam sixty pounds milk A. R. O. Sire from 30 lb. cow. A. R. GRAHAM, Flint, Mich.

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CHOICE Young registered JERSEY BULLS ages from six months to two years—fine individuals from large producing dams. Must sacrifice for quick sales. JAS. S. STEVENSON & SONS, Glenburnie Farms, Washington, Michigan.

Additional Stock Ads on Page 283

POULTRY.

Homestead Farms

We have a special offer which will interest poultry people who want Laying Hens for Winter. Since we do not feel that we can dispose of any more Pullets, we have decided to offer for immediate sale:

300 Laying Yearling White Leghorn Hens

These are from our choice colonies which as Pullets began laying last September (see descriptive circular), and which are still laying. Favorable prices in lots from 6 to 50 for immediate sale. Also other stock as follows:

Yearling Hens

Brown Leghorns, Barred Plymouth Rocks (limited) White Wyandottes, Rhode Island Reds, Rose Comb Black Minorcas.

Yearling Cocks and Cockerels

Barred Plymouth Rocks, Rhode Island Reds, White Wyandottes, Single and Rose Comb Black Minorcas, White and Brown Leghorns, Anconas.

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50 Fine Young White Pekin Ducks.
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All of these are pure bred practical poultry which daily prove their practical value in the direct market for poultry and its products which we have begun to build up.

Everything we sell is guaranteed: each customer is to be fully satisfied. Do you want some of these Yearling Hens or some of the Young Ducks or Geese? They are to be sold at once.

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These vigorous, May-hatched pullets will be laying in a few weeks. These birds of quality are the choice ever offered for sale. Price in hundred lots, \$1 each, for one week only. Our White Leghorns lay large, white eggs, and plenty of them. They are bred right. Book your order at once. Thousands of satisfied customers. Catalogue.

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Trapped, bred-to-lay stock. S. C. White Leghorns, \$2 each. Barred Rocks and S. C. Reds, \$3 each. SUNNYBROOK POULTRY FARM, Hillsdale, Mich.

JOHN'S big beautiful hen-hatched Barred Rocks, good layers. Breeding pens (5 birds) \$10 to \$20. Eggs \$3, \$2.50, 100, \$7. Circulars. Photo. John Northon, Clare, Mich.

Barred Rocks: EGGS FROM STRAIN with records to 297 eggs a year, \$2 per 15. Delivered by parcel post, prepaid. Circular free. Fred Astling, Constantine, Mich.

Barred Rock Hens Great Layers first class breeders 10 for \$25.00. R. 3 Benton Harbor, Mich. W. C. COFFMAN.



Ferris White Leghorns
A real heavy laying strain, trapped 17 years, records from 200 to 264 eggs. Get our special summer prices on yearling hens, breeding males, eggs for hatching, 8-week-old pullets and day old chicks. We ship C. O. D. and guarantee results. Catalog gives prices; describes stock, tells all about our farm and methods; results you can get by breeding this strain. Send for your copy now—it is free.
GEORGE B. FERRIS 334 Union, Grand Rapids, Mich.

Fowlers Buff Rocks. Eggs one half price for 15; \$1.50 for 30; \$2.00 for 50; \$3.50 for 100. R. B. FOWLER, Hartford, Mich.

BUFF Leghorns one hundred cockerels at \$1.00 each if taken at once, two to four dollars later. Dr. WILLIAM A. SMITH, Petersburg, Mich.

Laybitt S. C. W. Leghorns Large, great layers. Pure white. Bargains in choice breeding hens now. Everfresh Egg Farm, Ionia, Mich.

Pine Crest S. C. White Orpingtons, special sale of year old cocks and hens, also young cockerels. MRS. WILLIS HOUGH, PINE CREST FARM, Royal Oak, Mich.

RHODE ISLAND REDS and PLYMOUTH ROCKS Males 5 to 12 lbs. according to age \$2.50; P. R. hens weight 5 to 10 lbs., eggs 15 for \$1.00; 100, \$5; 120, \$6.00. Mammoth Bronze Tom Turkeys, 8 to 38 lbs. according to age \$6 to \$25, 10 eggs \$3. J. Morris & J. Barsan, Vassar, Mich., Successors to A. E. Cramton.

R. and S. C. Reds. Good breeding hens at \$1.50 each for short time. Also Belgian Hares. O. E. Hawley, Ludington, Mich.

R. I. Red Summer Sale. Rose Comb cocks and hens. R. Single comb hens and pullets. All at bargain prices. Cockerels after September 15th. INTERLAKES FARM, Box 39, Lawrence, Mich.

R. C. Br. Leghorn Cockerels, Pekin ducks, W. China Geese, Order early, the supply is limited. MRS. CLAUDIA BETTS, Hillsdale, Michigan

Silver Spangled Hamburg Eggs setting \$1.50. Bantam season. Pedigreed Perian Kittens great hunters \$10 each. Send stamp. Riverview Farm, Vassar, Mich.

S. C. W. Leghorn hens for breeding \$1.50 each. Cockerels from trap nested stock we have them priced \$3 to \$5 each. O. S. Sturtevant & Sons, Ypsilanti, Mich.

SILVER Golden and White Wyandottes. Choice breeding stock of sale after Oct. 1st, a few bargains in yearling hens. C. W. Browning, R. 2, Portland, Mich.

S. C. W. Leghorns. April Hatched. Standard Bred Cockerels on free range at \$2.00 each. White Line Poultry Farm, Hillsdale, Mich.

WHITE Wyandottes. A. 1 layers. Eggs for hatching, \$1.50, \$2, \$3 for 15, \$7 for 100. Special matings \$5 for 15. DAVID RAY, 709 Norris St., Ypsilanti, Michigan.

DOGS

Fox Hounds of all ages, Skunk and Rabbit dogs. W. E. LECKY, Send 2c stamp, 500 ferrets. Holmsville, Ohio

Nice Tri-Color Female 17 mos. old Registered; a bargain at \$10. Also a few choice puppies left. ERNEST WILLIAMS, Edmore, Michigan.

Collie Pups From thoroughbred trained stock, natural heelers, females \$3. Ernest Maurer, Eckford, Mich.

Write W. A. Ewalt, Mt. Clemens, Michigan, for those beautifully bred, Sable and White Scotch Collie Puppies, natural heelers from trained stock.

Please Mention The Michigan Farmer When Writing to Advertisers

Preparing Surplus Poultry for Market

POULTRY, as with every other commodity of food product, has gone up in price. The ever-increasing price of meats has a tendency to create a steady demand for poultry. Overproduction will never occur. The high price of grain will prevent this for one reason, because many of the small poultrymen will either greatly reduce the size of their flocks or dispose of them entirely. This, of course, will tend to cause high prices. Therefore, I think it advisable for anyone that has a flock of well-bred birds, to hold on to them.

However, in advising against decreasing the size of the flock, I do not mean to infer that one should retain the culls. I always advise close culling—it is an essential to realizing profits. There are always more or less undesirable young birds in every flock, the number depending upon how the birds have been bred. It is these culls that must be weeded out and disposed of in a way that will bring in the most profit. Springers are in great demand at present and the price is attractive enough to make it worth while for one to crate-fatten them preparatory to selling.

Fattened Stock Brings Premium Prices.

It has been the custom of the farmers to put the young stock on market just as taken from the range, but this is not advisable. It will pay one well to take the time and trouble to put them in top-notch condition for the table. Springers taken up from the yard and put on market will have the flesh hardened and stringy, whereas those that have been confined and fattened will be tender and juicy. Crate-fattened chickens will command a few cents more per pound and will weigh heavier when marketed.

Two weeks is the proper length of time for special feeding. Longer than this is not advisable as it is most certain that they cannot stand the forced feeding more than two weeks without going off their feed. And also, while they make rapid gain during this time, a week or two longer would show no increase in weight, or at least not enough to make the feeding worth while. Anyway, just as soon as they show a tendency to take a less amount of food or refuse to gain in weight, they should be taken out and marketed.

The simplest and best method of fattening is to have specially constructed crates in which to confine the birds while undergoing forced feeding. These coops can be constructed cheaply by anyone. To those who cannot work out their own ideas of a good coop or crate, I will endeavor to give a description of one that will answer the purpose in every way.

The Fattening Crate.

The coop should be large enough to hold a half-dozen to a dozen fowls. It is not advisable to have more than this in one crate, for the results will not be so good. Too much room is also not desired as this will give the birds an opportunity to move around more than is desired. On the other hand, a coop too small also is bad, as the crowding together causes the birds to fret and worry and take on little, if any, weight. Have just enough room so the birds can move about freely. The floor of the crate should consist of slats, which may be about one and a half inches in width and the space between being about the same as the width of the slats. This open bottom will tend to keep the floor of the crates and the fowls clean, as all droppings will fall through the open spaces and therefore cannot be trampled on and thus cause a filthy floor.

The back, two sides and top may consist of any material, but it is preferable to have them closed. The front of coop, however, should consist of slats spaced about two inches apart,

the slats running up and down, and not lengthwise of the coop. Building lath are excellent to use for this purpose. The slats can be nailed to a frame and hinged to coop to form a door through which the fowls are put in and taken out.

The Feeding Trough.

A trough for feeding the fowls should be suspended on outside of coop, against the slat door in front to make the feeding operations easy and to prevent the fowls from getting into the trough. Take two pieces of board about eight inches long and three inches wide, cut V-shaped notches in each piece about two inches from one end. Nail the other end of each piece to the end of the coop, bringing the notches close up to the slat door in front. Now make a V-shaped trough the same length as the coop, nail a block across each end to prevent the contents from running out, and set the trough in the notches, cut in the pieces of board. All the food the fowls get is put into this trough and is within easy reach.

Now as to feeding. Three times a

day is often enough to feed them. The ration should consist entirely of soft food as it can be more easily assimilated and tends to put on fat in a shorter length of time. Three parts corn meal, one part each of bran and middlings, and one-tenth part beef scraps constitute a good fattening ration. This should be mixed up rather thin by using either sour milk or buttermilk. When the latter is used, it should be allowed to stand a day before mixing. Give the fowls of this mixture all they will clean up readily. If more is given than they are able to consume, remove what remains, lest the fowls' appetite become impaired. If they once get off their feed they will fail to take on flesh. Before you begin feeding this fattening ration, however, keep the fowls confined in crates the first day with no feed at all, giving nothing but water to drink. Then start them on the regular ration, but begin with only a small amount as they are not accustomed to this food. If the fowls become restless between feeds, slightly darken the coops with a cloth, which will overcome their desire to move about.

Indiana.

O. E. HACHMAN.

Perseverance with Poultry

The general trend of events seems to insure good prices for poultry in the future. Many flocks have been reduced because of the high cost of feed and there will surely be a shortage of good breeding stock next spring and hatching eggs will probably be high in price. The farmer who has built up a good flock of exhibition or high egg-producing birds should not sacrifice them now. Feed may fall rapidly in price in a short time but a fine flock of poultry can scarcely be brought together in less than three or four years even if the farmer is willing to pay high prices for the foundation stock. Good birds can seldom be purchased by the hundred. Flocks of that size must be carefully built up over a period of years.

The fact that feed is high is an argument for pure-bred poultry. The farmer with a scrub flock will spend as much to feed them as if he owned pure-bred birds, but next spring when hatching eggs are bringing a good price he will not be able to profit by this line of business. Many farmers will regret next spring that they did not start to build up flocks of pure-bred birds four or five years ago. Of course, it is not too late to start now, but nothing can make up for the lost time. It is the farmer who owns a large flock of pure-bred birds right now who has accumulated experience in breeding them and he is the man who will be in a position to reap the rewards in the future. It is such breeders who should keep up their nerve right now and work harder to make ends meet in anticipation of the good prices which will surely come during the next few years.

The professional poultryman who has been facing high feed bills during the past year can scarcely be blamed for being anxious over the situation. If any man is equipped to weather the uncertainty of poultry profits at present he is the farmer who has an income from other sources and is also able to produce all of the poultry feed at a minimum cost. A farmer who likes poultry has a chance to make them a larger factor in the farm income than ever before. Perseverance pays in poultry raising the same as in every other line of business. Based on a ten-year average it is a good safe kind of farming if backed by the same kind of enthusiasm and skill that is necessary for success in any line of farming. The farmer who raises hogs never makes much money on pork if he is constantly going out of the hog business when pork is cheap and starting in again when it goes up. It always happens that he is never ready to sell when the selling is good, because he

left the business when the selling was poor, and there is nothing to market. Some farmers who are disgusted with poultry now, might find them profitable if they will stay with the business, improve their stock, increase their equipment and be ready for the steady demand for first-class poultry products during the next ten years.

Ingham Co.

R. G. KIRBY.

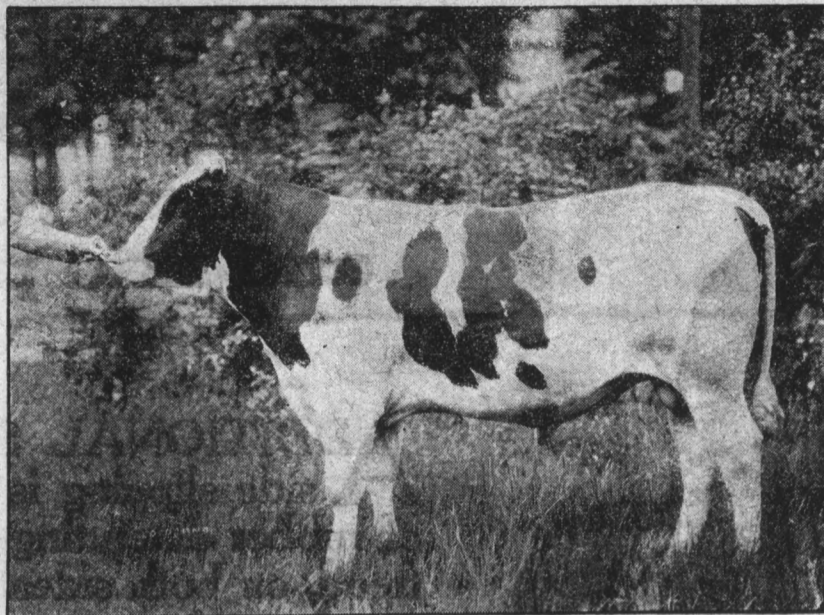
RATIONS FOR LAYING HENS.

The Department of Agriculture has received a report from the Ohio Station of a test and study of variety and simple rations for laying hens. In the experiment three lots of twenty-five pullets each of single-comb White Leghorns were used. These pullets were housed in half of a colony house ten by twelve feet in size, this space being allotted to each group. When the snow was on the ground the hens were confined to the houses. The hens were also confined to the houses from April 1 to June 27 in order to permit the grass in the lots to get some growth. At other times each lot had access to a yard. Lot one received a ration of shelled corn, ground corn eight parts, and meat scrap five parts.; lot two received shelled corn, ground corn seven parts, bran three parts, and meat scrap five parts; lot three had shelled corn one part, and wheat four parts, with one part of oats; and a mash composed of ground corn three parts, bran four parts, middlings four parts, oil meal one part, and meat scrap two parts. Each lot had access to grit, oyster shells and charcoal. Lot one produced 185.9 eggs; lot two 189.8, and lot three 201.6 eggs per hen, at a cost of 8.73, 8.54 and 10.96 cents per dozen respectively. The profit from each group was \$2.09, \$2.15, and \$1.98 for each hen in the respective groups.

DUST BATH FOR POULTRY.

Fowls will keep themselves free from vermin during the winter months if given a convenient place to dust. A box thirty inches square and twelve inches deep may be built in one corner of the pen, or such a box may be made with legs so as to raise it sixteen inches off the floor. Almost any fine dry powder will make good dusting material. The particles should be fine enough so that they will choke up the breathing pores of the parasites which live on the fowl's body. Equal parts of loam, sand and sifted coal ashes, to which has been added a little kerosene oil and the whole thoroughly mixed is often used for the dust bath.

FLANDERS FARMS



King of the Pontiacs Segis No. 169124

ORCHARD LAKE, MICHIGAN

Our Offering at the Detroit Guaranty Sale To Be Held at the State Fair Grounds, Oct. 3rd and 4th

Includes some very choice daughters of Maplecrest DeKol Ogden No. 94162 bred to King of the Pontiacs Segis No. 169124. He is a son of King of the Pontiacs and his dam is Hilldale Segis No. 99784. Can you find more popular breeding? We also offer a 27 lb. 3 year old heifer and a 20 lb. 2 year old heifer bred to the same bull.

18 Females and 2 Royally Bred Young Bulls In Our Consignment
FLANDERS FARMS - Orchard Lake, Michigan

FOR SALE JERSEYS Ready for service bull calves, backed by good records. Waterman & Waterman Meadowland Farm, Packard Road, Ann Arbor, 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.

Jersey Bulls for sale, ready for service. Out of good producing dams. Prices right. R. B. FOWLER, Hartford, Mich.

Hillside Farm Jerseys. For sale ten months old bull backed on both sides by R. of M. dams with high official records. O. & O. DEAKE, Ypsilanti, 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.

For Sale Two registered Jersey bull calves, Splendid individuals. Good pedigrees. Priced to sell. Long View Farm, R. 3, Box 10A, Rochester, Mich.

Maple Lane R. of M. Jersey herd offers for sale tuberculin tested cows, bulls, bull calves carrying the best R. of M. blood of the breed. IRVIN FOX, Allegan, Mich.

Maple Hill Farm Registered Jersey Cattle Surplus stock all sold. J. R. Worthington, R. No. 7, Lansing, Michigan

FOR SALE 2 yr. old bull out of a R. of M. dam record 519.8 lb. butter in one yr. sire Majesty's Wonder a R. of M. sire with 10 daughters in the R. of M. Write FRED A. BRENNAN Sec., St. Clair Co. Jersey Cattle Club, Capac, Mich.

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

FOR SALE—Reg. Short Horn Bulls by Maxwellton Monarch 2nd, a son of Avondale, from 1 to 9 mos. old. John Schmidt, Reed City, R. No. 5, Michigan

Francisco Farm Shorthorns Big Type Poland Chinas "They're rugged—They pay the rent." Nothing for sale at present. P. F. POPE, R. R. 3, Mt. Pleasant, Mich.

Bidwell Shorthorns "For Beef and Milk" This heifer at 6 months has bone, size and quality—our own breeding. The blood of Scotch bulls, Imp. Shenstone Albino and Imp. Villager Registered stock always for sale. **BIDWELL STOCK FARM,** Box B, Tecumseh, Michigan.

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

Richland Shorthorns Largest and best herd in the state. Imp. Lorne, Albion Crest and Fair Acre Goods in service. A few good young bulls for sale at attractive prices. Our show herd will be at Detroit, Grand Rapids and Saginaw and we invite your inspection. Office Tawas City, Mich. Herd at Prescott, Mich. O. H. PRESCOTT & SONS.

For Sale Shorthorn Bulls 3 mo. to 2 years old from good milking cows. R. R. Olydestation, H. J. DeGarmo, R. 0, Milford, Mich.

Jerseys and Duroc Jerseys

The most important thing in buying a Jersey bull is to get one backed up by generations of high producers.

Brookwater offers to sell a few choice bull calves of this kind.

H. W. MUMFORD, BROOKWATER FARM O. F. FOSTER, MANAGER
Ann Arbor, Mich., R. 7.

SHORTHORNS Maple Ridge Herd, Established 1877. No stock for sale. J. E. Tanswell, Mason, Michigan.

Shorthorns for sale, 5 bulls Scotch top 10 to 14 mos. 3 roan, 1 white, 1 red, price \$150. to \$250. 1 son of Maxwellton Sultan, 19 mos. \$350. O. Carlson, Leroy, Mich.

Cattle For Sale Loads feeders and two loads yearling steers. Also 2 can show you any number 1, 2 and 3 years old from 600 to 1200 lbs. Isaac Shantum, Fairfield, Iowa, R-8.

HOGS.

Durocs and Victorias Heavy bone, lengthy Spring Boars and Gilts from prize winners sired by one of the best Sons of the Great Defender & other noted strains. M. T. STORY, Lowell, Mich.

Berkshires, Boars, serviceable age, best blood lines. Registered. ELMHURST STOCK FARM, Almont, Mich.

Berkshires. Bred gilts and sows for fall farrowing. Also Spring pigs, either sex. A few boars serviceable age, reg. Chase Stock Farm, R. 1, Marlette, Mich.

Berkshire Pigs going fast \$15.00 & \$20.00 each three months old. Registered & transferred, richly bred. Riverview Farm, Vassar, Mich.

DUROCS BOARS Have the biggest, longest, growthiest and bred bunch of Spring boars in the state. 31st fall boars by Panama Special. NEWTON BARNHART, St. Johns, Mich.

Duroc Jerseys Spring pigs, either sex, not akin. Sired by Jennings Pilot Wonder and Orion Chief Perfection. Write for pedigrees and prices. The Jennings Farms, Bailey, Mich. V. M. Shoemith General Manager.

Reg. Duroc Spring Boars and Oxford Ram Lambs ready to ship. Exp. Paid. Fine Stock. J. R. HICKS, St. Johns, Mich.

"Nothing But Spring Pigs For Sale" CARRY W. EDMONDS, Hastings, Mich.

Duroc-Jerseys One Yearling Cherry King Boar, Gilts bred for fall farrow. J. H. BANGHART, East Lansing, Mich.

Duroc Sows and gilts bred to Eureka Cherry King and Orimson Critic son of Critic Model 1916 champion Iowa Fair. W. O. Taylor, Milan, Mich.

Duroc Jerseys. Fall Boars & Gilts all sold. I have some extra good heavy boned spring pigs for sale pairs not akin. F. J. DRODT, R. 1, Monroe, Michigan.

Pinehurst offers: Registered Spring Boars, tried brood sows. One Great Herd Boar. Write your wants. Orlo L. Dobson, Quincy, Mich.

Durocs, Good Spring pigs by Defender's E. E. Calkins, R. D. 6, Ann Arbor, Michigan.

Durocs A few good males sired by Joe Orion 2nd Dam by Orion Ch. King Jr. FLEMING, Lake, Mich.

Raise Chester Whites Like This the original big producers

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

Chesters Bred Gilts all sold. Special prices. on March boars, also 6 months Holstein Bull. F. W. ALEXANDER, Vassar, Mich.

Big Type O. I. C's, & Chester Whites Special prices on all boar pigs for the next 30 days. Will sell sows only when bought in pairs. These pigs are sired by our three Champion boars that have not an equal in the country. School master King of the breed Crandell's wonder & Callaway Add both champions. All stock shipped on approval, satisfaction guaranteed. Get our catalogue. Harry T. Crandell & Son, Cass City, Mich.

O. I. C. & Chester White Swine. Strictly Big Type, with quality. I have 20 Spring Boars that are EXTRA good. Of the most popular blood lines. Will sell a few gilts when taken in pairs. These pigs have been fed right, to do the buyer the most good. NEWMAN'S STOCK FARM, R. 1, Marlette, Mich.

O. I. C. An extra fine lot of last spring pigs, either sex and not akin, from good, growthy stock. Farm ½ mile west of depot. Otto B. Schulze, Nashville, Mich.

BOARS Big growthy fellows. The kind that pleases. I ship C. O. D. and pay express. J. CARL JEWETT, Mason, Mich.

O. I. C. Boars and Gilts all sold. I am booking orders for March and April pigs either sex, single, or in pairs not akin. A. J. BARKER, Belmont, Mich. R. R.

O. I. C. Thorough bred O. I. C. Swine all sold out except fall pigs. O. D. Somerville, Grass Lake, Mich. R. D. 4.

O. I. C's. All sold. Booking orders for the best of our winter and spring pigs. O. J. THOMPSON, Rockford, Michigan

O. I. C's. Spring pigs and Reg. Holstein heifers from 5 to 15 months old. O. L. OVER LEAF STOCK FARM, R. 1, Monroe, Mich.

O. I. C. Choice Spring boars and gilts out of prize winning stock. All stock guaranteed. The long bodied and Big Boned type. Write for photo and low prices. A. V. HATT, Grass Lake, Mich.

"POLAND CHINAS"

2 Spring boars—4 Gilts—3 Yearlings—Sows. Sired by Big Knox Jr., a 900 lb. boar at 22 months old, his sire Big Knox weight 1060 lb. at Iowa State Fair 1912. The dam, Allans Miss Orphan, a big growthy prize winning sow sired by Hadley Over, 1st at International Chicago in 1912. We have a nice lot of July and Aug. pigs from such sires as Big Knox Jr., Big Defender Jr. and Big Hadley. We can pick you out pairs and trios of these pigs at \$25 each, here is a chance to buy the best of the breed at a moderate price. ALLEN BROS., Paw Paw, Mich.

P. C. SWINE Big boned Apr. boars. Sows bred for fall farrow. Satisfaction guaranteed. R. W. Mills, Saline, Mich.

BIG TYPE POLAND CHINAS

For Sale from the CHAMPION and GRAND CHAMPION and our other GREAT HERD BOARS and big STRETCHY SOWS of very best breeding and individuality. HILLCREST FARM, F. B. Lay, Mgr. Kalamazoo, Mich.

"War is"

So is starvation, every one should do their bit. You can raise more pork on less feed if you breed Butler's Big Type Poland Chinas. Sows bred for fall farrow. Boars ready for service. J. C. BUTLER, Portland, Michigan. Bel' Phone

LARGE Type P. C. Largest in Mich. Spring Boars ready to ship. The kind that make good. Come and see the real big type kind. Expenses paid if not as represented. Free delivery from Parma. W. E. LIVINGSTON, Parma, Mich.

Big Type Poland Chinas: April and May pigs, healthy and growthy. Prices right. L. W. BARNES & SON, Byron, Mich.

LARGE Strain P. C. everything sold except 1 husky yearling boar that is long, tall & deep. 1 extra choice fall boar. H. O. SWARTZ, Schoolcraft, Mich.

LARGE type P. C. Some very choice summer gilts bred to farrow in August. Will sell 1 of my yearling herd boars. W. J. Hagelshaw, Augusta, Mich.

Large Stiled Poland Chinas, fall and spring pigs, at farmers prices. B. P. Rock eggs \$1.50 per 15. Robert Neve, Pierson, Mich.

Poland Chinas large and medium type. Prices low for quality of stock. P. D. Long, R. 8, Grand Rapids, Mich.

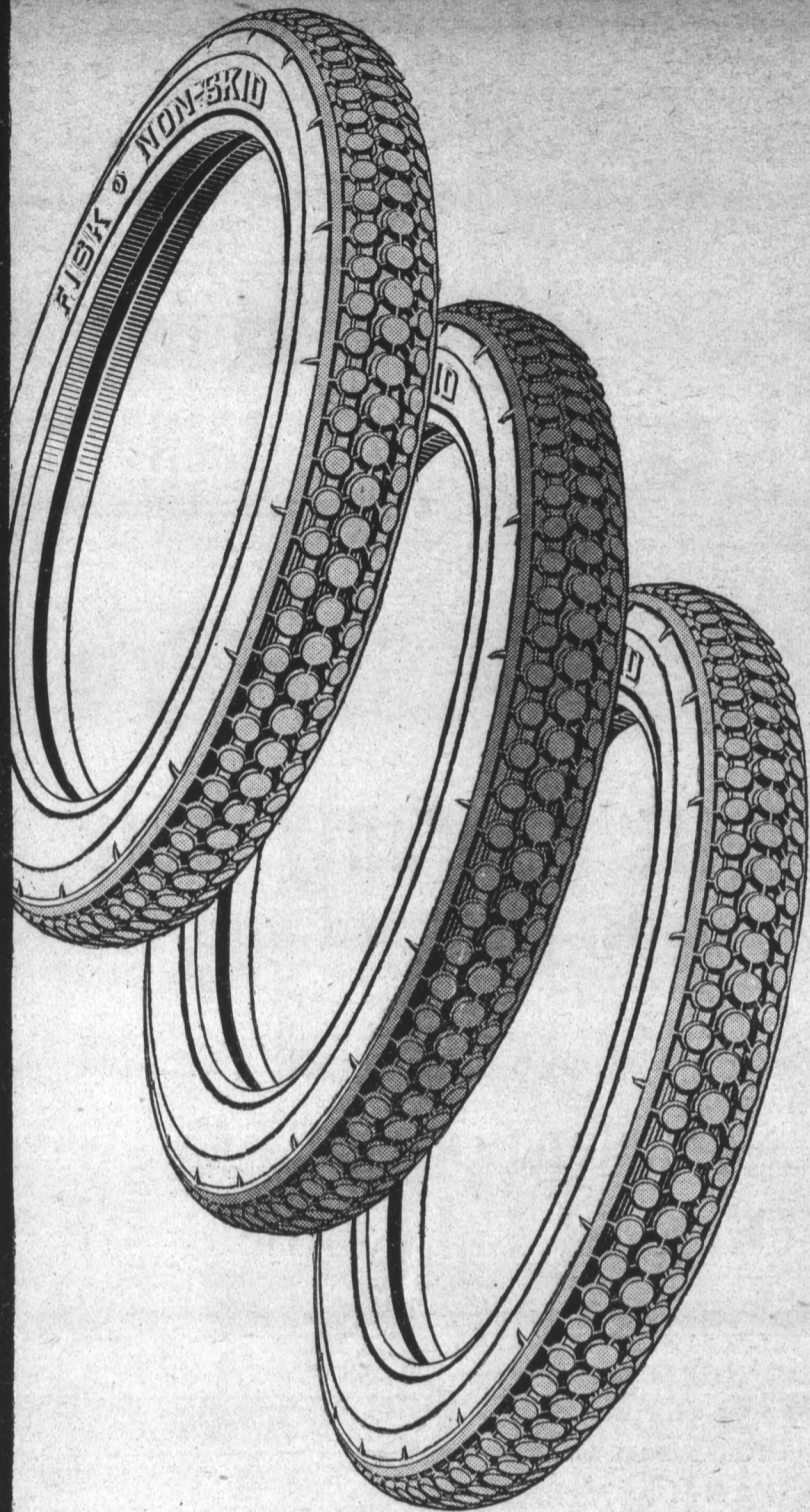
Big Type Poland Chinas, of April farrow, both boars and sows, for sale. A. A. WOOD, Saline, Mich.

Big Type Poland China boar now ready to ship, buy now and get choice. G. W. HOLTON, KALAMAZOO, MICHIGAN.

BIG Type P. C. Boars, March, April and May farrow ready to ship. Sired by Grand Superba and Peters Jumbo, Mouw Bred Boar. C. E. Garuant, Eaton Rapids, Mich.

HAMPSHIRE Boar pigs only for sale \$15 and up as to age. JOHN W. SNYDER, R. 4, St. Johns, Mich.

Additional Stock Ads. on Page 279



The "button" tread on Fisk Tires gives you real anti-skid protection ALL ways

ADDITIONAL SAFETY against side slipping is supplied by a rib of rubber extending around the whole tread, on both sides. Fisk Non-Skids are the only automobile tires that furnish such complete protection.

This graphic illustration explains Fisk Non-Skid features—protection from every direction.

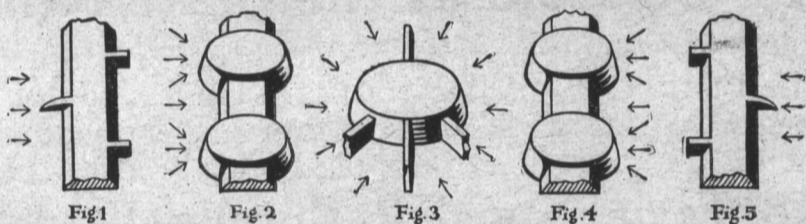


Fig. 1 is the outside rib that makes an uninterrupted counter against direct side slipping or skidding—**Fig. 5** is the same protection on the other side of the tread.

Fig. 2 is the outside row of buttons connected by a second rib of solid rubber. The buttons, which are slightly higher than the connecting rib, offer perfect resistance against skidding and because they grip the road so firmly, make the pull forward in soft ground ever so much

more positive and certain—**Fig. 4** has these identical qualities, but from the opposite directions.

Fig. 3 is the master button around which the Fisk Non-Skid tread is constructed. It supplies resistance against slipping in any direction—no matter which way there is a tendency to skid there is always a flat resisting surface to prevent that skidding, and to assist the sure forward movement of the wheel.

Made in three styles—
The Grey, the Black Non-Skid and
the handsome RED TOP,
Tire De Luxe



Buy Fisk Tires and get the real protection. Price and mileage are right. You can't buy greater dollar-for-dollar value in tire quality—and no other tire offers such safety. You can buy them everywhere.

THE FISK RUBBER COMPANY
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General Offices: Chicopee Falls, Mass.

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Fisk Dealers Everywhere

(1)

FISK Non-Skid TIRES