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On Page 668

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DETROIT, NOVEMBER 27, 1920

CURRENT COMMENT

Lost Motion in Farming

As every farmer knows, "lost motion" is undesirable in farm machinery. The mower or binder which is loose in all its bearings will not do efficient work. The power applied to it is largely consumed in the operation of the machine, instead of being delivered where it is needed for efficient operation. This lost motion also greatly increases the wear and tear on the machine, until it becomes a discouraging task to try to use it and it is finally discarded.

There is a valuable lesson in the history of the old machine which has an application to the owner's business, and this means every farmer. There is a great deal of "lost motion" in the operation of the average farm, and this "lost motion" is a great factor—possibly the greatest single factor—in determining the profit resulting from the operation of the business.

Lost motion in the operation of a farm is of so many kinds that it is scarcely possible to classify it, much less to catalogue it. But with his attention directed to it, any farmer can discover plenty of it by an analysis of his own business in the light of easily remembered experiences.

A trip through any farming section at almost any time during the crop-growing season will reveal striking examples of this waste resulting from lost motion on every hand. One farmer will have gone to the labor and expense of preparing a field and planting a crop, but due to the use of poor seed gets a poor stand, thus limiting the possibility of a profitable crop at the outset. Another will have planted more crops than he can properly care for and is unable to till them properly with much the same result. Others have failed to fit the seedbed properly, and still others have planted crops not adapted to the soil, or on land so poor in tilth or so poorly drained as to preclude the possibility of a profit from them.

These are typical examples of "lost motion" in farming which might be multiplied indefinitely. They are worthy of the careful thought and study of every farmer. Obviously it is an irreparable waste to expend time, the thing of which life is made up, in the development of lost motion if it can be avoided.

Unfortunately all the lost motion cannot be eliminated in even the most perfect running machine. But by comparison, the well adjusted, well oiled machine runs smoothly in comparison to the neglected and worn-out one. Nor can all the lost motion be eliminated in the conduct of a farm.

There are some natural handicaps which cannot be foreseen or easily surmounted. But if all the lost motion possible is eliminated there will be much the same difference in the resulting efficiency—and the resulting profits—as there is in the efficiency of the two types of machines with which every farmer is familiar.

How can most of this lost motion be eliminated? First, by careful thought and planning in advance of the season's campaign and second by constant vigilance during the producing season. In many cases a smaller acreage of cultivated crops, planted on better prepared and fertilized soil, using better seed and giving better care throughout the growing season is a step in the right direction. This will in many cases make time available for the improvement of land for future cropping, as in the drainage of wet areas, the application of lime or marl where these soil amendments are needed, the growing of green manure crops to supply needed humus, etc., all without actually reducing the current farm income and at the same time increasing the chance for future profits from the operation of the farm. Think it over! Plan now to cut out all the lost motion possible in farming operations.

Seed Grain Plots

CROP improvement work has made great progress here in Michigan. The work of the scientists at the agricultural college in developing new varieties of small grain crops has attracted the attention of agricultural college workers from other states and added millions of dollars to the value of the state's production of rye, wheat, oats and barley. Men who are well-posted in farm crop statistics claim that the work of improvement in small grain crops alone has added sufficient net income to the farmers of Michigan to more than pay the annual cost of maintaining the college at East Lansing.

The future of crop improvement work here in Michigan depends largely upon how the men on the farms cooperate with the authorities in charge of the work. If they take advantage of the increasing demand for pedigreed grain seed and give their crops the required attention, the field for producing seed grain offers inviting inducements. One of the big problems confronting farmers who grow improved varieties of small grain crops is that of maintaining the purity of varieties. The seed they purchase for the original seed plots is produced under the most favorable conditions where approved systems of head selection have been practiced for a series of years. If they maintain these seed plots in proper condition there is no reason why they should not succeed in maintaining the purity and quality of the seed used for their field crops. By cooperating with the field specialists in charge of the work at the college they will find it easy to make comparatively rapid progress with their work of producing pedigreed grain for shipment to other states. A firm foundation has been laid and the sales organization of the Michigan State Farm Bureau is making rapid progress in developing better markets for carload shipments of small grain seeds.

One of the factors in producing pedigreed grains which needs to be emphasized is the care of the seed plot. Successful growers prefer to seed small plots on some of their most productive grain land. They prepare the seed bed as nearly perfect as approved methods of tillage will permit, and sow the seed at the proper time, in most instances as early as possible within reason. In the case of some crops of small grain a few days delay is desirable as a protection against destructive insect pests. Care must be taken to have the seed drill clean and free from grain of

other kinds and varieties. Some successful growers leave a narrow path between each width of the drill. This may be done by allowing the wheel of the drill to return in the track made by the wheel on the strip already seeded. This leaves a fourteen-inch path unseeded.

During the growing period all noxious weeds and large weeds will be detrimental to the crop and should be removed. The path between the drill widths is useful in that it allows ready access to the plot with a minimum amount of damage to the standing grain. Weeding should be done from time to time through the season. When the plot heads out "rogueing" should start. Rogueing is the process of eradicating the grain plants that are off-type, or those of other varieties; anything foreign to the plot should be removed. The more carefully that this is done, the purer will be the resulting seed. The plot should be carefully rogued three or four times before the harvest, and more especially should the plot be carefully rogued the day that it is to be cut, as at this time the differences that have not shown before may be more readily noticed.

Further operations should all be done by hand, where possible, unless great care is taken to see that all machinery is faultlessly clean. The binder may be used for cutting if all adhering straw and heads have been removed, but preferably cut the seed plots by hand. It is absolutely essential that the threshing be done by hand. The easiest method is to use the flail; be sure that the barn floor is perfectly clean. When the seed plots are large, or in exceptional cases, the threshing machine may be used, but only when one is perfectly certain the stray grains have been removed, and then it is advisable to thresh only when the grain from the plot is of a different nature from that which has been threshed in the machine previously; never thresh wheat after rye or rye after wheat. In cleaning the seed be absolutely sure that all foreign grains are removed from the fanning-mill. Clean all the sieves and be certain that all parts of the machine are perfectly free from other grain seeds. All growers of this class of seed are advised to maintain special seed plots where they can do some of their own work of seed selection and improvement. Working with the seed plots will give one a better idea of field work and insure a better supply of seed for commercial crops. The secret of success is care and thoroughness all the way through.

Sugar and Beet Prices

RECENT press dispatches from Cuba indicate the probability of that country placing a temporary export embargo on old crop sugars. This proposed step is said to be due to the demoralized condition of the world's sugar market and to the contention of Cuban planters and mill operators that they cannot produce at present prices. These dispatches state that government action in Cuba may extend to the establishment of a general sales board and the floating of government loans to finance the handling of the crop.

Possibly this action may benefit beet sugar manufacturers by advancing the market after the expiration of the period which fixes the price for beets, as did the criminally speculative market of last year. Quite probably it will not help beet growers this year, but any move toward stabilization of the Cuban sugar market to prevent the violent fluctuations which have characterized the sugar market in the past year will ultimately benefit them.

In any event the Cuban sugar situation is the key to the world sugar market and should be considered in the settlement of Michigan sugar beet contracts.

News of the Week

Wednesday, November 17.

OFFICIALS of the Mexican government send an earnest invitation to President-elect Harding to visit Mexico during his present trip.—Secretary of the Treasury Houston will recommend to congress an increase in the excise tax on automobile sales.—Robbers take over \$3,000,000 from a train near Council Bluffs, Iowa.—Sixteen men are caught in a mine near Earlington, Ky., by a fire.—Under the redistribution of congressmen according to the new census, Michigan will have seventeen members in that body instead of thirteen.—Ukrainian troops are retreating before the Soviet forces.—All British troops will be withdrawn from Persia.

Thursday, November 18.

THE foreign minister of the Russian Soviet government warns Great Britain that the participation of the British fleet in the evacuation of Crimea by General Wrangel would be construed as a hostile act.—Much damage is done to shipping along the Atlantic coast by a heavy gale.—The president of the New York Building Trades Council is indicted on charges of attempting to extort money from contractors.—Three persons are killed in street car accidents north of Flint.—Forty thousand persons are rescued from Crimea by United States ships.

Friday, November 19.

GREAT BRITAIN is preparing an agreement to carry out arrangements for carrying on trade with Russia.—It is announced by the League of Nations that Spain, Great Britain, France and Belgium will send troops to Vilna to maintain order during the plebiscite.—Retail food prices in this country show a decline of three per cent during the month of October.—Sixty workmen are buried under a falling wall at Indianapolis.—The daily newspaper published by the Non-Partisan League at Aberdeen, South Dakota, goes into the hands of a receiver.—Representatives of the oil industry in session at Washington predict a supply of petroleum sufficient to take care of the demands for several generations.

Saturday, November 20.

BASING their action on the claim that the allies have not kept their agreement, Germany declares she is no longer bound by the Versailles pact ceding her colonial possessions.—Very grave fears are expressed that thirty-two persons are lost from the Spanish steamer Yute, off the coast of New Jersey.—Agitation against Germany caused rioting by the Czechoslavs at Prague.—High officials of the United States Shipping Board will be haled before the congressional committee now investigating the board's affairs.—The Italian chamber of deputies votes to grant women the right of suffrage.

Sunday, November 21.

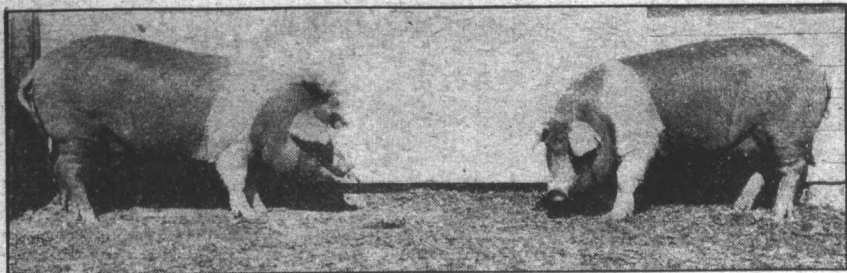
THE applications of fourteen countries, not including Germany, for admission to the League of Nations, are now being considered by that body.—The Pacific coast leaders discredit United States census figures on the number of Japanese in the western states.—With the 1920 deer season drawing to a close, upper peninsula citizens appear desirous of a new regulation which would open and close the deer and partridge seasons in alternate years.—Premier Meighen of Canada declares that Canada must retain a protective tariff.

Monday, November 22.

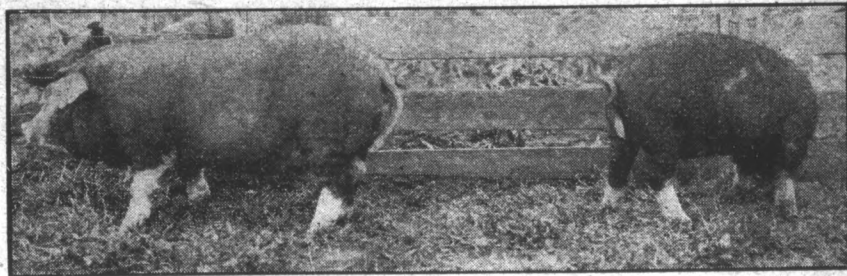
IT is announced that negotiations between Poles and the Russian Soviet delegation at Riga have been broken off.—Scores are slain and many injured in wholesale massacres which terrify Dublin.—It is announced that republican leaders will urge upon President-elect Harding the negotiation of separate peace treaties with Germany and Austria.—The condition of the former empress of Germany grows increasingly serious.—Hog prices reach the lowest level since 1913.—The League of Nations is summoned to take immediate steps to aid Armenia.—Armenia declines to sign a peace treaty with Turkey.

Tuesday, November 23.

THE condition of the Crimean refugees aboard the ninety or more ships now anchored in the Bosphorus is appalling, these people are reported to be facing starvation.—The big powers threaten to boycott Greece should that country restore Constantine to the throne.—Wholesale prices of bread decline two cents in Detroit.—The Armenian government has resigned.—The treaty between Italy and Jugoslavia is signed.



In comparing "60 per cent" and "50 per cent" protein meat meal tankages, both groups did about equally well, the average daily gains being practically the same. The feed requirement was almost identical. Quality and reliability of the manufacturer is the thing to watch in buying tankage.



Contentment on left versus discontent on right. It is entirely a question of balanced and adequate versus unbalanced or inadequate rations. The smaller pig is rooting under the fence, while the other is patiently waiting for someone to open the gate.

Ames Tests Answer Swine Questions

Results of Another Year's Work on Hog Feeding Experiments—By Blair Converse

SHOULD swine men buy commercial feeds? Which ones are the best? Can rooting be prevented? Is Sudan grass a good substitute for alfalfa as forage for sows? What is the value of corn gluten feed for fattening pigs? What is the effect of a degenerate sire on a herd? Can orphan pigs be saved? Which is more economical, cheap or high-priced tankage? Is the small, medium or big type pig the best to raise?

These and many similar questions were answered, or partially answered, by John M. Evvard, in charge of the swine experimental work at the Iowa Experiment Station, on the occasion of the annual Iowa Swine Feeders' Day at Ames, November 11.

While hundreds of cadets of Iowa State College, and thousands of veterans of the world war, and visitors to the college, were celebrating Armistice Day, three hundred and fifty swine breeders, experiment station men and representatives of farm papers were investigating the results of the swine feeding and breeding experiments that have been conducted by the Iowa Station during the past year.

Occupying the center of the stage, as the most extensive and complicated of the tests, was the work with commercial feeds. For several years Mr. Evvard has been working on the problem of the merits of the proprietary feeds as compared with the standard corn belt ration of corn, tankage and salt. The tests this year form a part of the service that he is rendering to swine by testing out, under practical conditions, the growth-producing qualities and the comparative costs of various rations.

As in the past the results this year point to a vindication of the standard ration. But the case was not so clear as it has been in some instances in the past, for some of the commercial feeds eclipsed the check ration, both in amount and economy of gain.

It is well to bear in mind, however, in considering the results of such tests, that the records of a single experiment are inadequate as an absolute guide and that, with varying factors, such as feed costs, the results are bound to shift somewhat from year to year.

As Mr. Evvard pointed out, the results are valuable largely as a guide. They furnish the basis on which hog

raisers can figure out their own particular needs.

Two General Lines of Tests Followed.

The experiments with commercial feeds were divided this year into two classes, those with basal specialty feeds—feeds which form the major part of the ration—and those with supplemental specialty feeds—feeds which supply nutritional deficiencies in the major feed.

Fifteen lots of five pigs each were used in the basal feed tests. All feeding started on July 22, the pigs averaging ninety pounds at the beginning and being of the same general character. All were pastured on rape.

The check lot were fed shelled corn, tankage and block salt, all self-fed. The tests ran for one hundred days, at the end of which time prices were noted, the results analyzed and other data secured.

The check lot gave a final weight of 236 pounds; made a daily gain of 1.52 pounds; ate 5.7 pounds of feed daily and required 375 pounds of feed to produce 100 lbs. of gain. The cost of the gains on the basis of Ames prices was \$9.14 per 100 lbs. and \$9.10 on basis of the prices quoted at the factory.

Three of the commercial feeds exceeded the check lot in the matter of final weight, but only two produced cheaper gains. In all of the three rations which made the highest weights hominy or red dog flour figured prominently.

A yellow hominy feed which showed up well gave a final average weight of 337 pounds. The feed consumption to produce 100 pounds of gain was 350 pounds. But the cost of the gain was higher than for the check lot, \$11 at Ames prices and \$10.32 at the factory prices.

The best showing on gain, and second best as to economy of gain, was made by a special hominy feed composed of hominy, corn, red dog flour, corn germ meal, tankage and salt. Here a final average weight of 257 pounds was secured, at a feed consumption of only 349 pounds for 100 pounds of gain.

The cost was \$8.97, Ames prices, and \$8.72 factory prices.

Only one feed made a more economical gain than the above. It is made up of corn germ meal, shorts, tankage, corn feed meal, alfalfa, cane molasses and salt. The cost of 100 pounds gain with this feed came to \$8.61 for Ames prices and \$8.55 for factory prices. The final weight of pigs in this lot, however, was only 221 pounds.

All other feeds ranged below the check lot. The poorest weight made was 190 pounds and the highest cost \$14.85, Ames prices.

Tests for supplemental feeds were run in practically the same manner. The most striking result was the fact that corn alone does not produce the economical results, that it needs a high protein supplement.

Pigs fed a ration of corn alone weighed ninety days at only 114 pounds, whereas all of the supplemented rations made six months old, weigh over 100 pounds.

The value of tankage as a supplement for corn was clearly demonstrated. The corn, tankage, salt lot was one of the best. Semi-solid butter-milk showed up well, but the gains were more expensive than for tankage. A mineral mixture used as a substitute for salt, made the most economical gains of any of the feeds. Used with corn and tankage it produced pigs that weighed 185 pounds average at the end of the test at a feed cost of \$6.05 Ames prices.

How to Prevent Rooting.

For many of the visitors the most interesting disclosure of the day was the effect of a balanced ration on rooting. In two adjoining bluegrass pasture lots I saw two groups of five pigs. One of the lots was torn up from end to end, the other was smooth and untouched.

The secret of the difference was the rations that the two groups of pigs had received. The "non-rooters" received the same feed but with the addition of tankage. The corn alone lot weighed at the end of ninety days only 109 pounds and they required 419

pounds of feed to put on 100 pounds of gain. The tankage lot weighed 171 pounds and took only 347 pounds of feed for 100 pounds gain.

Not only did the tankage show better gains but the pigs were a much better and more contented looking bunch. Mr. Evvard held up this experiment as an example of what tankage will do in the ration. He claims that tankage or any other high protein supplement will keep hogs from rooting. Unless they get the protein that they require in their ration, pigs will do the best they can and root for it.

An Observation on Breeding.

Which is the faster work, breeding up or breeding down? One has only to make the acquaintance of Sus Scrofa, the wild boar owned by Iowa State College, and his progeny to know the answer to this question.

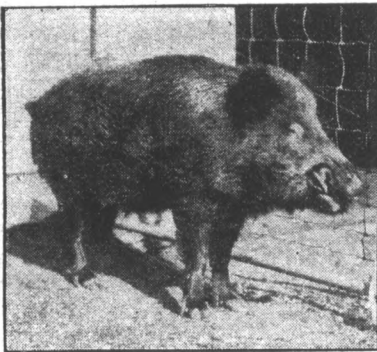
Last spring the wild boar was crossed on a pure-bred Poland China sow. Swine day visitors were given a look at the litter that resulted. The sight was grotesque but it has its moral. None of the pigs, although they are six months old, weigh over 100 pounds.

The best gain that they have made is less than half a pound a day. They show none of the characteristics of their Poland China dam, but are the duplicates in color, size and conformation of their wild sire. Their long legs, sharp snouts, peaked backs, poor pasterns show how rapidly the breeding work of generations may be undone by a single bad cross.

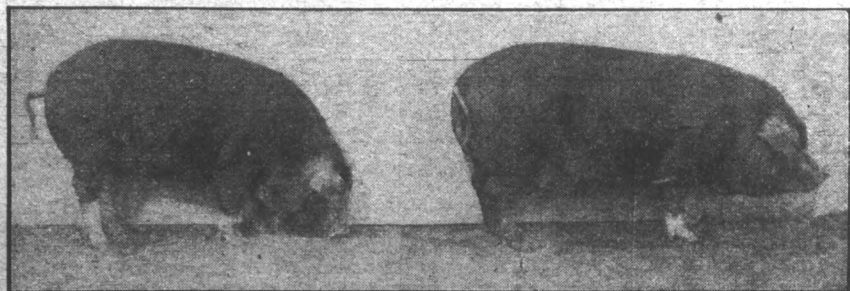
"We wanted to see how fast and how far back we could fly in one generation," said Mr. Evvard, "and now we know. With a single top cross we have reverted to the primitive ancestor of the modern pig."

Alfalfa Superior to Sudan Grass for Hogs.

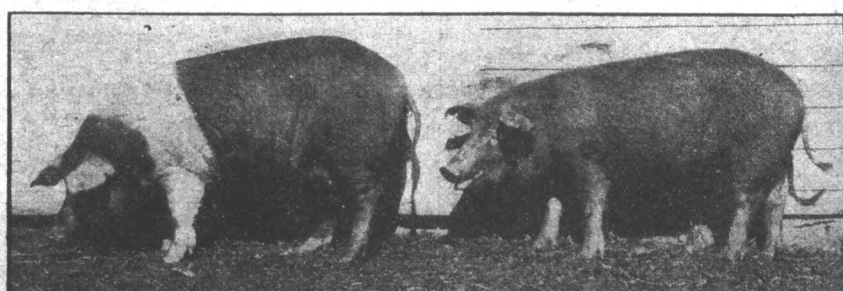
In experiments comparing Sudan grass and alfalfa as a forage for sows, alfalfa came off with flying colors. Four lots of sows were used, two of them without corn and two with. In both cases where corn was left out of the ration, the sows lost weight, the ones on alfalfa .522 pounds a day and the ones on Sudan grass .536. With corn the alfalfa sows made a daily gain of .159 pounds but, even with corn, the Sudan grass lot lost .08 pounds daily. The addition of corn saved \$3.72 per sow for those that were on alfalfa and (Continued on next page).



Our Modern Swine Sprang from His Kind.



The larger pig of the two received, in addition to corn, tankage and salt, self-fed separately, a specialty or mixed feed, composed of high-grade hominy feed, corn flour, corn germ meal, meat tankage, and salt, guaranteed to contain 13 per cent protein, six per cent fat, and 4.5 fiber.



The pig on the left received in addition to his self-fed shelled corn and salt ration, a good grade of 60 per cent protein tankage, but his mate on the right received a lower grade of tankage that happened to carry about two-thirds as much protein.

News of the Agricultural World

FARM BUREAU NEWS.

J. W. NICOLSON, secretary of the International Crop Improvement Association and director of the Seed Department of the State Farm Bureau, has mailed the program of the second annual meeting of the International Crop Improvement Association, which takes place at the Stock Yard Inn, Chicago, December 1.

Entries and material for the exhibit of Michigan at the International Hay and Grain Show to be held in Chicago at the same time as the International Live Stock Exchange, has been sent by M. A. C. The exhibition will show Michigan's three-part program of seed handling. Those three parts are plant breeding, certification and marketing. The part that the Seed Department of the State Farm Bureau plays in Michigan's seed business will be graphically shown.

The elevator exchange is now a month old. It has handled one hundred cars of grain and is composed of thirty-three member cooperative associations. An illustration of the advantage of a private wire is embodied in a business transaction which occurred recently. A Buffalo correspondent wired the elevator exchange, the telegram leaving at 11:30 and being in the hands of our sales manager at 11:38, reply reaching Buffalo at 11:48, or a lapse of eighteen minutes from time message was sent until reply was received. Shortly after telegram of booking was received at Buffalo, the wheat market declined seven cents per bushel. The private wire operation, therefore, saved the exchange and its members this difference.

The board of directors of the exchange at its last meeting, ordered that a hay department of the exchange be established and an experienced director placed in charge. The principal demand for the handling of hay comes from the farmers of the upper peninsula where 2,500 cars of hay will have to be moved this season. The Thumb district also has a considerable quantity of hay to market. Most of the associations of the exchange have signed an agreement to handle hay as well as grain and beans.

TO FINANCE CATTLE FEEDERS.

PLANS of Chicago bankers for financing the western live stock industry to the possible extent of \$20,000,000 have been put into shape and it is probable the plan will be in operation within a fortnight.

It is the proposal of the Chicago bankers, in cooperation with those of Minneapolis, St. Paul, Kansas City, Omaha and other cities who are primarily interested in live stock loans, to finance the live stock growers to an extent that will remove the necessity of dumping immature and breeding animals on the market and thus safeguard the future meat supply of the country. There is no intention of financing any speculative move which will prevent selling of live stock fit for market in an endeavor to obtain higher prices.

The scheme under which the banks will operate will hold no profit for the banks beyond an interest rate of eight per cent on the money used. This rate is the same as now obtained on loans on the best commercial paper.

The banks entering into the plan will form a corporation under the laws of Virginia with a purely nominal capital of \$500. This corporation will take live stock paper from the banks and loan companies now carrying it. No new loans will be made, but only outstanding paper taken, for which there is not

a ready market. Such paper will be taken at a ten per cent interest rate from the banks and companies tending it. Then the corporation will issue its own notes at eight per cent to a trustee holding the \$20,000,000 fund. Thus the loans will be made.

The differential of two per cent will be used to cover the expenses of the corporation and possible losses on loans. Any surplus at the winding up of the business of the corporation will be distributed pro rata to the banks and loan companies which sold paper to the corporation. Thus there will be no profit for the corporation and its officers will receive no salaries. The management will be vested in an executive committee.

RAILROADS TO ELIMINATE SPECIAL FAIR RATES.

FAIR men from all over the country will meet in Chicago December 3, to protest against a proposed increase in railroad rates which would double the expense to exhibitors. George W. Dickinson, of Detroit, president of the International Association of Fairs and Expositions, has received notice that the railroads propose to do away with the schedule which allows exhibitors at fairs a one-way rate for the round trip, or their products from farm to fair and back to the farm. This rate has been allowed by the railroad, said

Mr. Dickinson, to stimulate interest in fairs which have been recognized as valuable factors in building up the country. Even during wartime, the one-way schedule was allowed to remain in force.

Mr. Dickinson declared the proposed change in rate would not only mean financial loss to the fairs themselves, but would impose a hardship on exhibitors of moderate means, and probably mean that many high-class animals and farm products would not be shown.

The fair men will also elect officers and make general plans for enlarging and improving fairs the country over.

MICHIGAN TO SEND LARGE EXHIBIT TO INTERNATIONAL.

THE following just received from Professor Cox, of the farm crops department of the M. A. C. indicates the part Michigan will have in the Grain and Hay Show at the International:

The Michigan Agricultural College exhibit at the Chicago International Grain and Hay Show being arranged chiefly by this department, will be a much more carefully prepared exhibit than has ever been sent up on such an occasion by this institution.

The Crop Improvement Association, the Farm Bureau Seed Department, and the Potato Growers' Association,

are cooperating in developing the central idea of Michigan's college exhibit—Michigan mobilized for maintaining high-quality seed—showing the part played by the Michigan Agricultural College in developing varieties, by the Crop Improvement Association in increasing varieties under inspection and by the Farm Bureau Seed Department in accomplishing sale.

Michigan will also be represented by a very large entry list in small grain classes. Prof. A. L. Bibbins states that over two hundred samples of small grains have been sent him to date, many of them of a very high quality.

SWINE QUESTION ANSWERED.

(Continued from preceding page.)

only sixty-nine cents for the ones on Sudan grass.

Experiments with swine types indicate, Mr. Evvard thinks, that the ideal hog will be found somewhere between the big and medium types. He showed his guests three lots, one of the large type, one of the medium and one of the small. The small type pigs made a poor appearance. They were light in weight and especially susceptible to hog diseases. The medium type lot were heaviest but they had reached the top of their stride in gaining. The large type, although they weighed a little less than the medium, had been busy building bone, legs and frame and were rapidly increasing their rate of gain.

Raising Orphan Pigs.

As to orphan pigs, Mr. Evvard has some decided opinions. In the first place, he does not believe that they should be a practically dead loss to the farmer. During the past year he has tried several tests to determine the best substitute for sow's milk. In all of them cow's milk has been the basis of the feed and supplements have been added to make it comparable to sow's milk in richness and palatability. He has found that whole milk alone gives very satisfactory results but that even better things can be done if feeds high in vitamin content are added.

To this end he has added to the whole milk such supplements as orange juice, tomato juice, eggs, sugar, cream and wheat embryo. The sugar and cream gave disastrous results but the fruit and vegetable juice seemed to add to the efficiency of the ration.

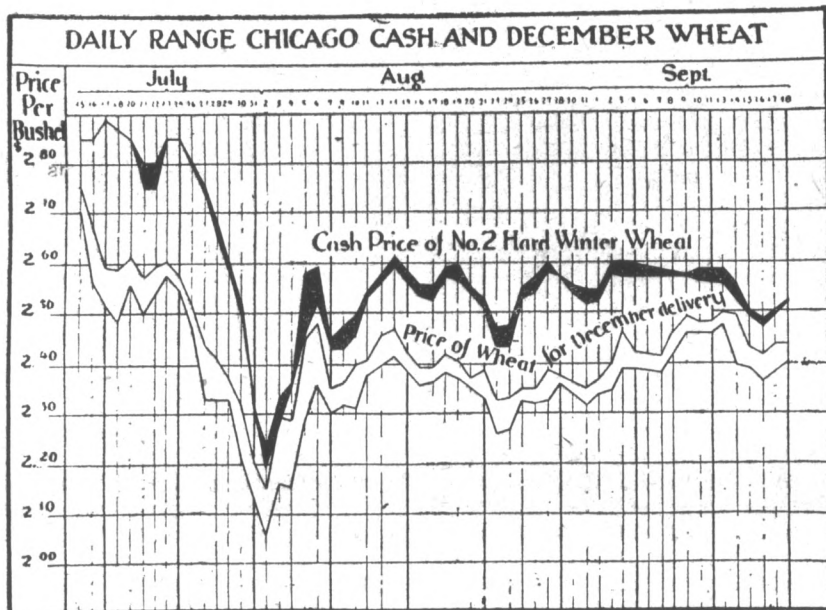
His work along this line is only in its initial stage and will be continued during this year.

HOG PRICES HUNT FOR BOTTOM.

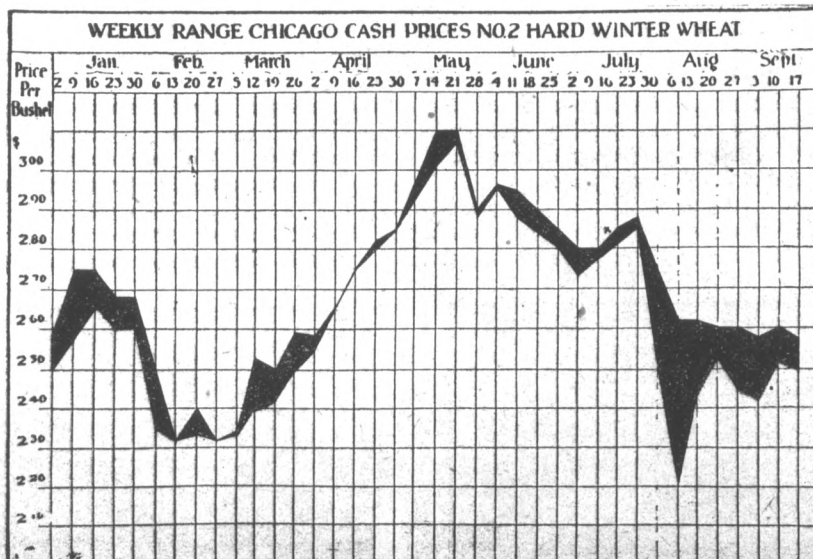
AVERAGE hog prices at Chicago dropped at the close of last week to the lowest levels since January, 1917, nearly four years ago. Receipts expanded but still are not of excessive volume. The top dropped to \$12 at Chicago. The sacrifice sale in cattle and the declines in hog product values were depressing influences in the trade. Pigs and light weights continue scarce so that average weight holds up well. Evidently farmers are less alarmed over the hog price outlook than is the case with cattle feeders. Few farmers get loans upon their hogs so that pressure to liquidate debts does not weigh upon the hog market. Eastern markets did not decline as rapidly as western points, which brought in buying orders and caused a slight recovery on the closing session.

MARKET MEN MEET.

The annual meeting of the National Association of the state marketing officials will be held in Chicago at the Auditorium Hotel, Monday and Tuesday, November 29-30, beginning Monday at 10:00 a. m.



The black area shows for each day the highest and lowest price for No. 2 hard winter wheat on the Chicago market since trading in wheat for future delivery started on July 15. The white area shows for each day the highest and lowest price of wheat at Chicago for the December delivery. The lines show how erratic the market has been and that the price for the December delivery has been below the cash price, the amount of the discount on the former varying somewhat at different times.



The black area shows for each week the highest and lowest price for No. 2 hard winter wheat on the Chicago market. The "X" indicates the date upon which trading in wheat for future delivery was resumed. A very sharp decline followed. This was followed later by another decline which reached the lowest point on October 5.

Rosen Rye on Manitou Islands

Isolated Michigan Islands Grow Pure Rosen—By J. F. Cox, Farm Crops Department, M. A. C.

DURING the past eight years Rosen Rye has practically supplanted other varieties in Michigan and in other northern states where it has proven to be adapted. Since rye cross-pollinates freely in the field, the original strain of Rosen Rye, distributed by the Michigan Agricultural College, has in many localities become mixed through cross-pollination with common rye. Much of the rye going by the name of Rosen is of a hybrid type, which does not compare in yield or quality with the Rosen Rye as it left the hands of Plant Breeder F. A. Spragg in 1912.

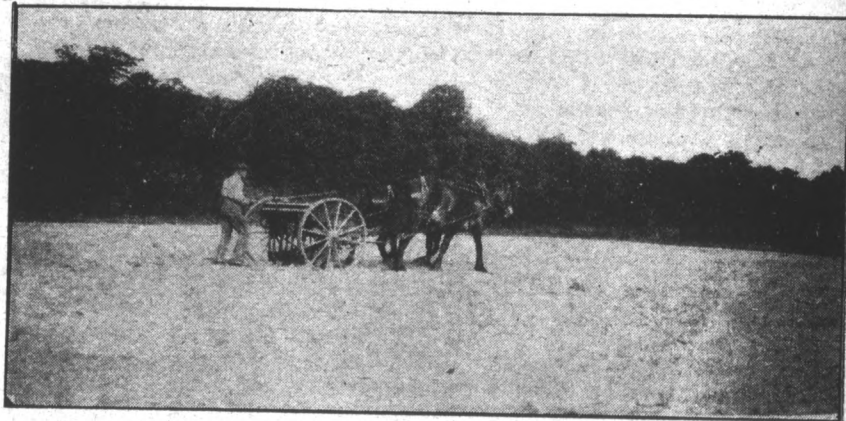
The Michigan Crop Improvement Association, through registration of seed and careful field and bin inspection, has been able to furnish a supply of high-grade Rosen, but since rye is so easily cross-pollinated in the field, the need has been felt for conditions under which improved strains of Rosen may be developed in a large way for distribution.

In the spring of 1919 the Farm Crops Department of the Michigan Agricultural College made a preliminary sur-

farm crops department. As on the mainland, the Rosen during the past year, markedly out-yielded the common rye, producing as much as fifty per cent more grain in yield per acre.

During the past fall the Michigan Agricultural College made arrangements with the South Manitou Island farmers which led to the planting of the entire rye acreage of the island to an improved strain of Rosen. In the future superior strains developed by the plant breeder will be introduced there for the purpose of rapid increase.

An Island Chapter of the Michigan Crop Improvement Association has been formed by Secretary A. L. Bibbins, and "Manitou Island Rosen" will be distributed to farmers through the Michigan Crop Improvement Association and the Farm Bureau Seed Department. Under the isolated conditions of the island, and with all island farmers having agreed to grow no common rye and keep down volunteer rye, it is easily possible to grow a very high grade of pure Rosen Rye. Arrangements have been made to in-



Adolph Beck Planting Rosen Rye on South Manitou Island.

The North and South Manitou Islands are located in Lake Michigan, approximately ten miles from the shore of the Leelanau Peninsula, due west of Grand Traverse Bay. They were settled before the mainland, the high timber having been removed at an early date. The North Manitou, an area of approximately fourteen hundred acres, is for the most part, covered with excellent hardwood second growth. Only a few farms have been cleared on this island, one of which is a large and successful fruit farm producing cherries and apples of high quality. On the South Manitou Island, the smaller of the two, (about seven thousand acres in extent), there are a dozen farmers who, judging from crops in evidence, rank in ability with the farmers of the mainland.

The soil of the South Manitou Island is for the most part a sandy loam, splendidly adapted to potatoes. Along the shores most of the soil is rather light for farming and some of the older farms have been farmed to the extent of partial depletion. Those which have been skillfully handled, however, produce potatoes of superior quality and of higher yields than usual on the mainland. Corn grown on the island is as large as that found in central Michigan, owing to the influence of the lake. Rye and oats are the chief grain crops.

The isolation of the island has tended in many ways toward the development of specialized farming. Several of the farmers, whom the writer met, are farming along scientific lines. For instance, Mr. George Hutzler, of the South Manitou Island, has adopted the practice of growing sweet clover as a rare beauty of these isolated islands, green manure crop for potatoes. It is his practice to turn under the entire crop to prepare the way for potatoes. Mr. Hutzler is also growing selected

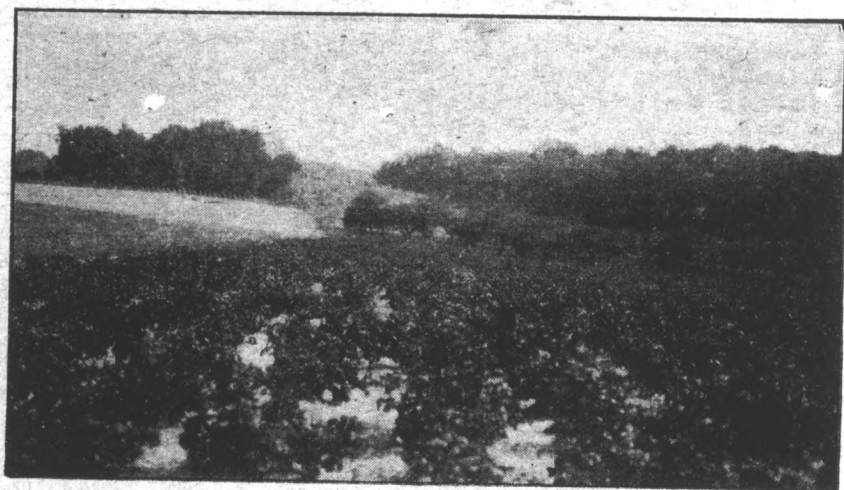
Rosen Rye, carrying on cooperative work with head selected strains with the Michigan Agricultural College.

Farmers on the mainland are just beginning to get together for cooperative purchase and marketing. The island farmers, after many years of enforced cooperation can furnish considerable valuable information along the lines of cooperation to those on the mainland. It is the usual custom to make up a cargo each spring carrying potatoes and grains from all the farmers of the islands to some such point as Chicago, Milwaukee, or wherever the market is best. During the past year the potatoes were marketed during the time in the spring of greatest scarcity. The island grains are known for their high quality and the potatoes and beans for their excellence and freedom of disease. Without doubt wonderful opportunities are offered on these islands for the development of the seed business.

The farms of the South Manitou Island are fenced and the remainder of the island, about six thousand acres, is used as an open cattle range. Each farmer marks and releases his cattle for fattening and each year the cattle are rounded up and shipped by boat to the mainland. High-power rifles over the hearths of most of the houses are taken down in the fall in order to bring down the wild cattle.

The island grass-fattened cattle make excellent beef and are in high repute on the mainland.

For men and women of proper temperament, who are given to reflection and thought, in addition to hard work, and who can love and appreciate the rare beauty of these isolated islands, the Manitou offer excellent opportunities for a happy and successful life. There are still many acres to be cleared and cultivated.



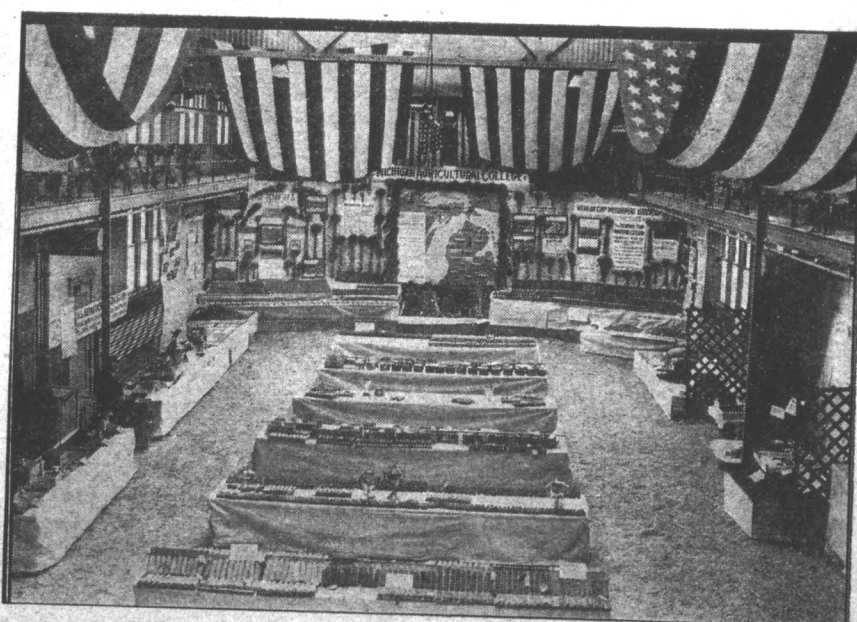
The Soil of Manitou is Splendidly Adapted to the Production of Potatoes.

vey of Michigan islands for the purpose of selecting an island, having the proper soil conditions and being tilled by careful farmers on which improved strains of Rosen could be planted and increased, and other varieties excluded. The North and South Manitou Islands were selected as being best adapted to this purpose. In the fall of 1919 Mr. J. W. Nicolson, then connected with the Michigan Agricultural College, carried enough head selected Rosen Rye to the South Manitou for the planting of an increase plot, and interested farmers of the island in the planting of Rosen Rye on behalf of the

clude the North Manitou also in the plan for supplying Manitou Rosen Rye.

Farming on the Manitous.

In the minds of many readers, the Manitou Islands are associated with past accounts of the wrecks of great freighters and passenger ships which piled up on their shores, during the old days before government regulation and coast guard service when ship captains drove their vessels for record time regardless of storm or ice. Few realize that on the Manitou Island are to be found well-tilled farms, which are being handled by farmers of high skill and intelligence.



The Attractive Exhibits of High-class Grains Put on at the M. A. C. have been a Potent Factor in Spreading the Gospel of Better Crops.

Farmers Active Regardless of Snow

By L. A. Chase

IF the fall of snow two weeks ago was a false alarm, that which descended the second week of November looks like real winter. This was hardly to be expected, however, for the fall season had hitherto been unusually drawn out, and the white Armistice Day of this year is in marked contrast with the bare ground of the two former celebrations. But we are now on runners—mostly so—and we may remain there till April. But the upper peninsula knows how to get along with the snow. Main roads will be cleared by tractors, plows and snow-rollers. Railroads are equipped to handle the heaviest downfalls. Our bunkers are full, or will be before navigation closes a month hence. The notion recently published in a moving-picture magazine that this region is absolutely snow-bound for six months of the year and deprived of all that makes life worth living, without any better means of getting about than dog-sleds and snowshoes, is the height of absurdity. Having spent thirty winters in the southern peninsula and nine in the northern peninsula, I face the coming season with no dread—with much contentment of mind. We shall get on very well.

Many of our farmers are Finns. One-fourth of all the Finns in the United States, by the census of 1910, live in Michigan, and most of them in the counties bordering on Lake Superior. Finland is also a country of long winters. It is much more northerly than the northern peninsula. Finland is primarily an agricultural country, in which dairying and forest industries play the largest part. Our Finns naturally, too, drift to the land, although numbers of them still work in the mines or dwell in town. The Finns have a college at Hancock, primarily established to train men for the ministry. There is a good reason why Suomi College—"Suomi" being the name by which Finns call themselves—should give agricultural instruction, and it is planned to feature this phase of work. The college is handicapped by lack of available land—it is located on the main street of the city, with limited grounds; so its agricultural work calls for a re-location of the institution or the acquiring of additional land away from the college. The agricultural instruction undertaken by Suomi College this year, is necessarily of the textbook sort and for the younger students. President Wargelin tells me that it is planned to expand this work as soon as may be. The Finns are highly intelligent and very educable people; and their importance in the development of northern Michigan is such that anything that promises to advance their efficiency should receive every encouragement.

A THIRD of the upper peninsula counties maintain home demonstration agents under the direction of the Michigan Agricultural College Extension Department. The central office for this work north of the Straits is in Marquette. Miss Helen E. Simonson, the Dickinson county agent, reports that "a milk campaign is being carried on in the rural schools. Records are kept for four months showing the daily consumption of each child and increase in weight each month. In Breen township the superintendent has offered five dollars to the child who gains the most in four months. Talks on milk have been given to the children in twenty-two of the schools." The Quinnesec Women's Club is studying costuming. A number of clubs have been organized relating to the making of garments, etc. The work of these "H. D. A.'s" covers a wide range judg-

ing by the October reports just received at the Marquette office. At one point a butter-making demonstration is given. Two millinery clubs with twenty-seven members each are operating in another locality. At Anvil, it is stated, the women are studying millinery in the afternoon and dress-making in the evening. The young women at Ramsay, Gogebic county, have formed a needle-work club. At a South Bessemer meeting, held by the "H. D. A.," thirty-five women were present, many of whom spoke little or no English. "The women talked very informally," says the report of this meeting, "and asked many questions. Evidently all were asking and answering among themselves, as they would pick up the patterns which the H. D. A. had used for illustrations and explain them to one another." At Ramsay a demonstration of the use of the sewing-machine and attachments was given. Help was given a fifteen-year-old housekeeper in buying and making curtains. Two hundred and four people attended a series of meetings on feeding of children at various points in Houghton county, it is reported. Three hundred and seven school children were weighed and measured. A series of home demonstration work exhibits was made a part of the Copper Country Fair. This illustrates some phases of the work carried on by these home demonstration agents from Chippewa county

likelihood of a shortage through drought in the summer months. A meat market man recently placed before me two halves of sheep which he had in stock—one home-grown and the other imported. The contrast as regards fatness was remarkable. In addition to the operations of a few large sheep men, the district has seen the introduction of a scheme of sheep culture whereby town-dwellers furnish the capital to purchase sheep which are then turned over to farmers on an agreed basis of return to the investor and the farmer. The plan followed was suggested to L. M. Geismar, county agent of Houghton county, by his experience in his Alsatian home many years ago, and it has worked very well in the copper country, it is said, yielding a high percentage of return all around.

"The Herald-Leader of Menominee, announces a disbursement of \$400,000 on November 15 to the farmers who have this season produced beets for the Menominee River Sugar Company. Another installment is due December 15. The factory is now in the midst of what is regarded as a successful run following a good beet season in its territory.

ENOMINEE county maintains an agricultural school, whose short course, intended to serve the needs of boys and girls who must be back on

had signed up three hundred and thirty members, reports the L'Anse Sentinel. This is ninety per cent of those solicited. The county is relatively sparsely settled, and while it has some excellent farming sections, much of it is still undeveloped agriculturally.

As a result of the coming of a big plant to Iron Mountain, that city has a real estate boom, but the Tribune-Gazette, of that city, states that it has been necessary for the Michigan Securities Commission to warn local real estate operators that some of them are not complying with the new state law requiring that they first obtain a state license.

The Iron River-Stambaugh Reporter announces a recent second shipment of cattle from the Triangle Ranch, near Amasa, northern Iron county, to Chicago. The consignment was of fifteen carloads and went by fast freight over the Northwestern Line. This leaves some fifteen carloads yet on the ranch to go to market later. The Triangle Ranch is one of the largest and newest enterprises of the kind in Cloverland, having been started this spring. A late report is that the ranch will be given thirty-five miles of fencing next spring.

Experimental farming conducted on the Tennant Farm in Mackinac county is reported by a contributor to the St. Ignace Enterprise, to have led to the following conclusions: "Clear more land. Build up the soil of the older farms—hogs and sheep help. Plow in clover. Manure well. Use commercial fertilizer, but first send sample of soil to be planted to your county agent to be analyzed so that exact chemicals lacking for particular crops may be intelligently supplied. Rotate crops. Buy more high grade sheep, cows and hogs. Fatten steers of higher grade for beef. Build up a creamery, a slaughter-house and a potato warehouse. Organize a farmers' selling association to systematize better marketing facilities. Treat seed potatoes with formaldehyde for scab; spray vines with Bordeaux mixture and Paris green. Spray fruit trees. Tidy up the farms. Paint up. Build hog-tight fences in the hardwood. Clean up." Plant more acres is the advice. Use machines for handling crops; summer fallow; fall plow; cultivate more, continues the writer. Raise more poultry and bees, he says. Farming is a business equal to any other business. So it is. He states that their sheep, hogs, cows, poultry, oats, peas and potatoes paid well this year."

Five garden clubs with two hundred members in Calumet township school district No. 2 produced two thousand dollars worth of produce this summer, says The Calumet News. This is net profit. The Trap Rock school is credited with changing a purely Finnish settlement into a thoroughly Americanized community in five years.

Schoolcraft county supervisors in addition to the one-tenth mill tax for county fair purposes, have appropriated five thousand dollars for the erection and improvement of the stock sheds on the county fair grounds, announces the Pioneer-Tribune of Manistique. The supervisors are said to have required little urging for this appropriation, regarding the county fair as one of the most important institutions in the county. The board also allowed two thousand dollars for the continued maintenance of the county nurse. The nurse had worked personally in every township of the county besides being accessible in her office in the court house. Her object, it was stated, is to prevent rather than cure disease, and her tact is said to have established a strong sentiment toward making the office permanent.

TAKING BOOKS TO RURAL READERS



The Spies Public Library, of Menominee, is rendering a real service to the farm folks of the county. Since last February eleven thousand volumes have been circulated outside of the city. There are thirteen branches in stores mostly, but one is in an ice cream parlor, and others in a school, a residence and a cheese factory. The board of supervisors provide for one-half the expense of the service. The picture shows one of the containers filled with books being taken from the station to a branch office in a wheelbarrow.

and Drummond Island on the east to Gogebic county on the west in those counties which have made provision for this work. This work carried on in our small towns and "locations" and rural districts, where there are many people of recent European origin, should help much in the good work of Americanization. You can't jamb "Americanism" down their throats, or talk them into it. It must come about normally through the exercise of good will and helpfulness on both sides.

It is announced that a Chicago packing house, out of its Ishpeming office, will put on a campaign for the greater use of mutton in the interests of sheep production. This should fall in line with the efforts of the Upper Peninsula Development Bureau to encourage the growing of sheep in the district—efforts which are by no means without results. The natural forage grass of the district seems well adapted for sheep, and there is lots of it with little

the farm during the summer season, will start November 29 and end April 1. The term's course features automobile and tractor mechanics, involving valve grinding, tightening bearings, babbitting, etc. The students live at the school, where board and room are cheap, and their work is directly related to agriculture. I visited the school last spring and observed a recitation in one class, unlike those commonly heard in school, which was here confined to the best method of pruning fruit trees. The school is close to Menominee but has a considerable tract of land for out-door demonstration work. The short course students, this winter, will be allowed a choice of farm subjects, such as crops, dairying, soils, poultry and animal husbandry. The boys will get also, gas engine repairing, and the girls cooking and dressmaking instruction.

At the close of its campaign for farm bureau members, Baraga county

Solving Our Big Marketing Problems

Will the Cooperative Principles Developed on the Pacific Coast Help?

By Herman Steen

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FARMERS in other states have applied the California cooperative system to their own marketing problems in a number of instances. In several cases conspicuous success has crowned their efforts; in others the experiment has not as yet proceeded far enough to insure final success.

The California idea was carried northward over the Siskiyou six years ago into the fruit-growing valleys of Oregon. It took root slowly, for the Oregon farmers remembered previous experiences with cooperative movements that did not live up to expectations. But by heeding the lessons of the past and using the fundamental principles developed in California, the Oregon farmers finally perfected the Oregon Growers' Cooperative Society, which now handles the bulk of the fruit produced in Oregon. It differs somewhat from the California associations in that it handles all the various kinds of fruit produced in Oregon, but this does not violate the rule of commodity marketing because of the similarity of the kinds of fruit handled.

Success in Oregon and Washington.

The Oregon Fruit Growers' Cooperative Society has been the means of securing wonderfully increased prices for the fruit of its members, and the fruit speculators in Oregon are operating in a restricted field. It does not as yet command the full support of its members, however, but its record in two years of existence compares favorably with the first two years of any California cooperative.

The prune growers of southern Washington have a solid organization which has been the means of eliminating speculators from that important district. At Seattle the poultry producers' association is the most potent factor upon the egg market of that city. Both these organizations were patterned closely after California organizations of similar nature.

At Portland is the headquarters of the Oregon Dairymen's League, which has profited by the serious mistakes of the California milk producers and perfected an organization that is theoretically the best of its kind in the United States. It was launched only a few months ago, however, and has since been the object of powerful attacks designed to wreck it.

Cooperation by Grain Growers.

Up in the inland empire around Spokane, the wheat growers have been forming a gigantic association to market the wheat crop of eastern Oregon, eastern Washington and northern Idaho. This organization is handling close to ten million bushels of 1920 wheat, or one-sixth of the amount produced in the far northwest. These wheat growers are bound by contract to deliver their grain to the association for a period of years, and the association pools the crop and pays each producer the average price for his grade. At the rate it is growing, it is expected that this association will market forty million bushels of wheat in 1921. The general plan of the wheat association is almost exactly the same as that outlined by Aaron Sapiro before the grain marketing conference in Chicago on July 23-24.

The plan of the Michigan Potato Growers' Exchange was taken largely from the California Fruit Growers' Exchange of Los Angeles, except that the central exchange exercises much more complete authority. The Michigan potato exchange is the outstanding success in the field of cooperative market-

ing in the central west. It markets nearly half of the Michigan potato crop, and last year, according to the United States Bureau of Markets, secured for its members over \$700,000 more than the prices offered to Minnesota and Nebraska potato growers.

The Michigan Farmers' Elevator Exchange is organized along similar lines. It began operating on October 25, 1920, with twenty-three affiliated elevators. It has succeeded in getting a premium of several cents per bushel for grain handled, but its success, of course, will be determined by the future.

In the Corn Belt and South.

In the south both the peanut growers and the cotton growers are organizing associations along the lines of the California institutions. In fact, the Oklahoma cotton association is based almost wholly upon the prune growers' type of organization, modified to meet Oklahoma conditions.

A number of farm organizations, under the leadership of the American

ciation should make a careful study of the principles responsible for the success of cooperation in California. It is quite true that prunes do not resemble wheat and that almonds are quite unlike cotton, but the principles of cooperation are always much the same no matter what the product. The details of operation differ materially, but the underlying principles are always much the same. It is worthy of note that the California cooperative plan was originally adapted from the method used by the bacon-selling societies of Denmark.

In the preceding articles of this series, I have discussed in detail the most important phases of the cooperative movement in California. At the risk of repeating some things, I am reviewing briefly the fundamental principles that have brought success to the movement in the Golden State.

Organization by Commodity.

1. Organization has been by commodity, not by locality. There is a

states, live stock shipping associations scattered all over the country. The rule of commodity marketing means that wheat and potatoes could not be marketed together to good advantage, nor peanuts and cotton together, although in each case the products are grown in the same communities. Products of fairly similar nature, however, like corn and wheat, or hogs and cattle, can easily be marketed through the same organization.

Producers Sign Contracts.

2. Producers sign long-time contracts requiring them to deliver their products to the association. This contract is binding and provides for the payment of damages in case a grower sells his product to an outside dealer. The crop contract idea was borrowed from Denmark, where it had proved successful in keeping weak-kneed cooperators in line when outside dealers made a drive on a cooperative society. It has been perfected in California until it has been sustained scores of times in the courts of that state.

At first crop contracts were regarded solely as a means of enforcing loyalty upon the members of cooperative associations. This, of course, is still one of their price functions, but they have also been found to be the key to unlocking the problem of financing cooperative enterprises. The contracts now provide that the producers surrender title to their products at time of delivery, the title thereupon resting with the association. This enables the association to borrow money to pay advances to the growers shortly after time of delivery. Further payments are made during the year as crops are sold, and final payment at the end of the marketing season. This enables the association to market its crops at the most favorable time, which it could not do if individual growers were constantly pressing it for money.

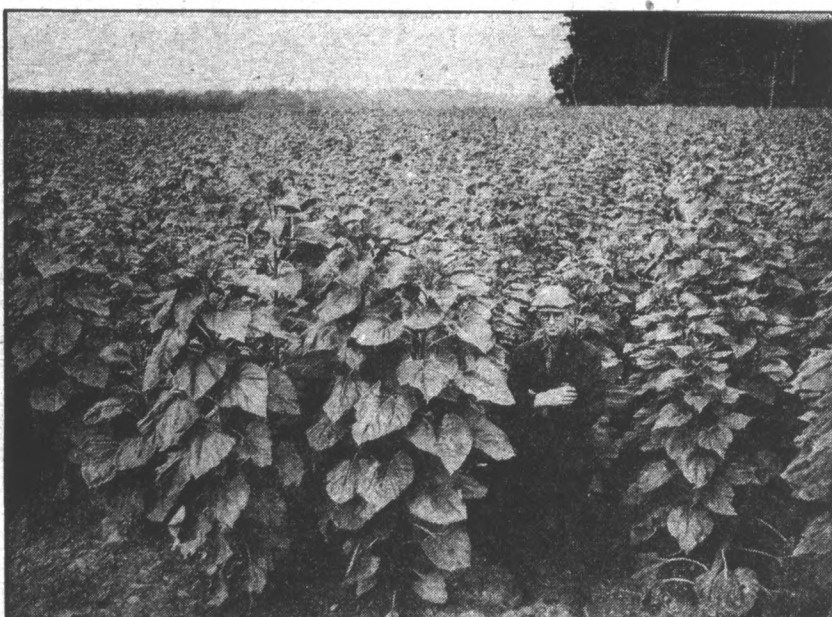
The crop contract has been used only to a limited extent by cooperative associations outside of California. There is no doubt, however, about it being an absolute essential to success on a large scale, because it insures a supply of products for a period of years to the association, it absolutely prevents outsiders from breaking up an association, and is the opening wedge in breaking down the difficulties of financing a cooperative enterprise.

Crops Are Pooled.

3. All products handled by the association are pooled by grade and variety, so that every producer receives the same price for an equal quality of product. The pooling plan is employed by every cooperative organization in California. In some associations, the pools are local only, each local unit having a separate pool. Others are state-wide and every producer receives the average price secured for the grade of product he furnished the association.

The pooling idea eliminates all competition between producers for prices. It makes it impossible for dealers or speculators to play one group of producers against another. It gives every producer the same price per pound for his product as every other producer received, the only variation made being that for difference in quality.

In associations which sell their product upon open markets and thereby receive different prices at different times all receipts go into a common treasury and the proceeds are divided equally among those contributed to the pool in



Sunflowers at the Upper Peninsula Experiment Station.

Farm Bureau Federation, have begun an intensive study of the grain marketing situation with the idea of working a cooperative plan that will replace much of the present surplus marketing machinery and put farmers in a position of controlling the grain market, to some extent at least. This movement is operating through the Farmers' Marketing Committee of Seventeen, to which several tentative plans based on California experience have been presented. A similar committee of fifteen will be selected soon to study the live stock marketing situation.

Marketing has become the vital problem in American agriculture. Farmers are more interested than ever before in efficient marketing of their crops, and are moving to the solution of this problem by forming organizations of various sorts. Some of these newly-formed organizations are based upon the principles of true cooperation. Others contain only a thin shred of cooperation and seem doomed to fail. In still other cases, shrewd promoters are taking advantage of the situation to foist fake organization schemes on the farmers in the guise of cooperation.

Review of California Principles.

I venture the suggestion that any group of farmers forming or proposing to form a cooperative marketing asso-

ciation should make a careful study of the principles responsible for the success of cooperation in California. It is quite true that prunes do not resemble wheat and that almonds are quite unlike cotton, but the principles of cooperation are always much the same no matter what the product. The details of operation differ materially, but the underlying principles are always much the same. It is worthy of note that the California cooperative plan was originally adapted from the method used by the bacon-selling societies of Denmark.

Similar commodities are often grouped together, both lemons and oranges being handled by one association and prunes and apricots by another. In order for an association to successfully handle more than one product, the products must be similar in nature and must seek the same general markets.

A farmer may belong to three or four cooperative associations in California and not feel over-organized, as each association is concerned with a separate product which its experts know best how to handle for best returns.

The principle of commodity marketing has been generally accepted by farmers' cooperative movements elsewhere, though perhaps not followed as strictly as in California. There are cooperative milk-marketing companies at the big cities, cotton marketing associations in the south, farmers' grain companies in the central west, potato exchanges in the three big potato

proportion to the amount of product furnished.

The pool plan is essentially fair to everyone concerned. It puts every producer upon an equal basis, and eliminates any possibility of favoritism. It gives confidence to the individual producer because he knows his product is handled like every other member's.

Associations Make No Profit.

4. Cooperative associations have no capital stock and operate without profit. The most obvious advantage in favor of the non-capital, non-profit plan of organization is that it allows the association to operate without fear of prosecution under the Sherman anti-trust law or state anti-trust law in most states. There are other advantages of equal or greater importance, which have permitted the non-profit, non-capital organization to crowd the capital stock corporation out of the field of cooperation in California.

Chief among these reasons is the fact that outsiders are easily eliminated from non-profit associations, while they frequently cause trouble in capital stock corporations, because they have interests that are not identical with the interests of the producer-members. Nobody but producers should be allowed a membership or voice in the operation of producers' cooperative enterprises, and the easiest method of retaining that control is by following the non-profit, non-capital plan. When no profits are made, there is no incentive for an outsider to get into a cooperative association.

The California marketing associa-

tions do not buy farm products from the growers and sell these products to the trade. They do not buy anything, but simply act as selling agencies for the large group of producers who are members of the association. The marketing associations in one sense are simply commission companies selling the products of their members; they do not charge a fixed percentage, but simply charge the actual cost of selling and pay the rest of the receipts back to the producers. The non-profit, non-capital plan of organization takes the premium out of capital. Farmers receive the full selling price less the cost of selling.

The necessary warehouses, packing houses, and equipment necessary in handling the crop are owned by a subsidiary corporation which is controlled by the marketing association. The profits of the subsidiary are used to retire the capital stock.

The non-profit plan of organization is used only to a limited extent in cooperative associations outside of the Pacific Coast area. The most conspicuous example is the Michigan Potato Growers' Exchange, which has operated from the start on that basis.

Other Consideration.

These four principles—organization by commodity, crop contracts, pooling the crop, and non-profit organizations—are the fundamental features of the cooperative system in California. There are in addition a number of important points that have helped the cooperative cause in California, which can hardly be regarded as fundamental but

which are worth reviewing briefly for their possible application to the cooperative movement in this part of the country.

1. Prices of farm products are determined by the law of supply and demand, which operates freely when speculation is removed. Some association, notably the citrus and poultry associations, sell their products on open markets for the best prices they can secure. If prices are not satisfactory, they refuse to sell. The citrus association regulates the supply of fruit on the market by delaying picking the fruit from the trees if necessary while the poultry associations put eggs in storage if necessary to improve the market in times of plentiful supply. These organizations market one-fifty-second part of the year's crop each week, if possible, and depend upon this stabilization to bring adequate returns for their crop.

The prune, raising and almond associations, on the other hand, fix a schedule of prices at the beginning of the year and sell their products according to that schedule.

In either case, however, the prices received are determined by the law of supply and demand, which operates freely because speculators and manipulators are eliminated from interfering with it.

2. Expert managers are employed to direct the affairs of the cooperative associations. The California cooperative associations employ the best men available to direct the work of selling the crops it handles. There are sev-

eral \$25,000 per year men on the pay-rolls of the cooperative associations, and some salaries exceed that.

Some of these experts were developed from among the leaders in the cooperative movement. Wylie Giffin, head of the raisin association, is a notable example of that type. Some were hired directly away from the rival companies which were the worst enemies of the cooperative movement. Some were brought in from outside, like G. Harold Powell, of the citrus growers. Still others came from subordinate positions in the movement.

3. Cooperative associations take the public in their confidence. The meetings of boards of directors are open in almost every case to anyone who cares to attend. There are few secrets. Any member has access to any and all records all the time. The associations make a deliberate bid for public favor by asking the governor of California to name a representative on the board of directors.

4. Local cooperation has been supplanted by strong centralized organizations which handle the bulk of the crop through one channel. The history of cooperation in California is strewn with the wrecks of local cooperative enterprises. California experience teaches very definitely that cooperative enterprises that are purely local in scope do not solve the marketing problem and ultimately fail. When these locals join in an overhead organization, so that they do not compete against each other, success comes if properly handled otherwise.

To Restore Dairying in Devastated France

American Holstein Breeders Offer Assistance in a Great Work for Humanity

THE pitiful condition of the agricultural and live stock industries in devastated France so impressed the president of the Michigan Holstein Breeders' Association, Dudley E. Waters, of Grand Rapids, who recently made a tour of inspection of this war-scarred area, that before he left the continent plans were completed for assisting these unfortunate but courageous people in reestablishing their dairy business.

As a result the Holstein-Friesian Association of America, at a recent meeting in Chicago, voted unanimously to subscribe one thousand registered Holstein bulls to be placed into the hands of the French government for the purpose of improving the grade of the dairy cattle now on the farms of northern France.

With letters of introduction to the new ministry established by the French government for the restoration of the devastated provinces, Mr. Waters was able to secure accurate knowledge on the present state of affairs, and he declares that the work of rebuilding the citizenship of France has progressed almost beyond belief. French peasants are rapidly returning to their farms where thousands are living in cellars and in dugouts, while the process of restoring their farms to cultivation and building barns for their animals is going on. So eager are they to get back to a self-supporting basis that the establishment of dwelling places for themselves seems to be their last consideration.

Before the war these northern provinces which include the departments of Somme, Pas de Calais, Oise, Aisne and Marne contained about 424,000 dairy cattle. These were practically all taken away or killed during the war. Under the armistice Germany agreed to return 90,000 cows, but comparatively few of these have as yet been received, and about two-thirds of those offered have been rejected on account of inferior quality.

Through the cooperation of other

countries, however, these districts now have about 112,000 dairy animals. Of this number about 10,000 were shipped by the United States, some came from Normandy, others were imported from Holland and England. While the average of the cows is good, there are very few sires and but few of these are fit to use. Consequently one of the most important requirements for building up good herds is well-bred sires.

Mr. Waters' plan, as adopted by the Holstein Breeders' Association of America, is to ask the breeders of Holsteins in this country to donate one thousand bulls, six to eighteen months of age, good individuals and free from disease. These breeders are asked to have the animals registered. The bulls will be assembled in different states and sent to seaboard to be loaded into boats provided by the French government. The cost of shipping the animals to the coast and of providing for their care until delivered to the French people will be covered by private subscription.

Each breeder donating an animal will receive a personal acknowledgment from the French government. The breeder will have the satisfaction also, of knowing that one of his animals is going to assist in the big task of restoring the agriculture of these districts to normal and to aid materially in giving the child life of the region a better chance through a much needed increase in the milk supply.

The ownership of the animals will be transferred to the government of France. The bulls will be sent to those regions where they can be of the greatest service. Some person will be made directly responsible to the government for the care of each animal. The use of the bulls will be free to the farmers.

Solicitations of pledges of bulls has been apportioned among the leading Holstein states of the Union as follows: North and South Dakota 25; Minnesota 100; Wisconsin 150; Illinois 50; Michigan 100; Ohio 100; New York 150; Pennsylvania 50; New Jersey 50;

New England states 100. The field secretaries of the various associations were appointed as chairmen of the committees of their respective states to cooperate with the committee for the restoration of the dairy industries of liberated France, appointed by the national association. The national committee consists of Dudley E. Waters, of Grand Rapids, as chairman; R. C. Pollock, of Chicago, and H. C. Baker, of Tiffin, Ohio.

Already seven hundred head of animals have been offered by the various state associations. To date Michigan's donations are as follows: Dudley E. Waters, Grand Rapids, 20; Loeb Farms, Charlevoix, 16; J. H. Brewer, Grand Rapids, 3; B. S. Hanchett, Grand Rapids, 2; Traverse City State Hospital, Traverse City, 2; Michigan School for Deaf, Flint, 2; Corey J. Spencer, Jackson, 1; R. B. McPherson, Howell, 1; C. L. Spillane & Son Co., Clio, 1; Dr. T. C. Tiedebohl, Coloma, 1; John B. Martin, Grand Rapids, 1; W. J. Gamble, Detroit, 1; E. A. Hardy, Rochester 1; E. W. McNitt, Grand Rapids, 1; David H. Day, Glen Haven, 1.

The collection of donations in Michigan is under the direct charge of Horace H. Norton, Jr., of Lansing, field secretary of the Michigan Holstein-Friesian Association. Any Holstein breeder desirous of contributing to this most worthy cause should take the matter up with Mr. Norton.

BREEDERS SHOULD BE MORE PROMPT WITH PAPERS.

WE have seen many cases where breeders neglected to turn over certificates of registry and transfers promptly following sales of cattle and in many instances serious complications resulted.

There is no possible excuse for such slackness, and breeders should see to it that such matters receive prompt attention. It is only a matter of a few minutes time to make out the necessary applications and send them in to

the secretary's office and it is very important, especially with the beginner, who is taking his first lessons in the purchase of registered animals, that the papers be turned over promptly.

It always makes a good impression on the buyer if the owner has all the young stock registered in good shape and it is simply a matter of good business to do this. Some interesting data in this connection may be found in the recent census returns, which show that of the 24,602 pure-bred Holsteins of all ages reported from Michigan, 5,286, or 21.4 per cent, were unregistered at the time the reports were filed. This is altogether too high a percentage, and it would be well if the national association would encourage early registration by amending the by-laws so as to charge additional entry fees after six months of age.

Delay in registration tends to increase mistakes, both from loss of identity of the animal and from loss of records in connection with the breeding, and with the great increase in the volume of the business handled, earlier registration should be required.

In public consignment and dispersal sales in particular, it should be a rule that all papers be ready before the sale. It is a deplorable fact that many breeders selling in public sales offer cattle over a year old and yet unregistered. This condition should be remedied and every breeder should see to it that his cattle are registered and transferred promptly. Twenty per cent of all applications received at the secretary's office are returned for correction, and many of these mistakes would be avoided if we would all take care of such matters today instead of putting it off until tomorrow.

Feed the young heifer like a little cow and on cow foods. Let calf and stock foods alone. Feed good bran, middlings, a little oil meal, clover-hay, silage and that sort of foods, keep her growing, always in good flesh, never overfed to destroy or weaken.

Consolidated Schools Make Good

The Circuit Rider Finds that Michigan's Success with Consolidated Rural Schools is as Outstanding as the Success in Other States

FOR many years prominent educators have realized that country boys and girls have not enjoyed the same educational privileges as their more fortunate cousins in the town or city. This is unfair, especially in an agricultural state like Michigan. For the farm boys and girls of the future there must be justice and opportunity, according to the measure of the times in which they are living—opportunity to know, to live and to seek the truth. What changes are necessary in our educational system for the working out of justice and opportunity between country boys and girls and those who live in the town or city is beyond the writer to say, but the consolidated rural school seems the most logical remedy.

Successful educational schemes always make the greatest progress where education is needed, not where it is general. The consolidated rural school has to do with the improvement of our future generation of farmers, and in no line of business is education more needed than in the biggest business of all—farming. This is a business that has been all hands and no head. The consolidated rural school will give the farming business a head. When schools are organized with the township as a unit it not only provides a better system of education for the boys and girls, but it brings the whole community into closer relationship. It makes country life—poor and sordid as it usually is—richer and fuller than city life at its best. It makes the rural school a better school than any city school can possibly be, because it gives the boys and girls a knowledge of literature, history, physics, chemistry, botany and biology, and correlates them all in the science of agriculture. It not only gives them opportunity to study, but to live and think, and by their living and thinking they are brought to an understanding of the problems of life about them. Schools should function quite as effectually in getting pupils to think as in giving them pre-digested information.

In discussing the merits of the consolidated rural school over the one-room district school for younger boys and girls it is difficult for one to measure their relative efficiency without some accurate records of the number of pupils who take the entrance examinations for high school after finishing the one-room district school. From incomplete surveys in Michigan and other states we do know that the number is comparatively low and the percent-

age of failures greater than among pupils from the town or city graded schools.

The most complete record brought to the writer's attention here in Michigan is a report from examinations conducted during the second week in May, 1919, when seventeen hundred boys and girls from the rural schools took the eighth grade examination. These boys and girls wrote upon a list of questions prepared by the superintendent of public instruction, and the same questions were used throughout the state. The same course of study had been followed in all the schools where the pupils attended.

According to the records approximately sixty-five per cent of the boys

the graded school, eighty were given diplomas, and twenty were failures. Sixty-five from the one-room school and eighty or more from the graded school is the comparison. The rural consolidated school has the same advantages as the graded school in so far as instruction is concerned. Is it worth while to adopt a system of rural schools that will change fifteen failures out of every hundred, which is the difference between the product of the graded and the one-room district school, to successes?

Reports from other states present even more convincing figures. In Worth county, Iowa, seventy-four per cent of the pupils from the un-graded one-room rural schools failed to pass the

thing better than stones for the bread they produce. It is the only way to transmute an old standpat farming community into one of progressiveness with something of an apostolic soul. For some of us older people it may pay to standpat, but think of the boys and girls.

MANY people have an idea that it matters little what kind of school the boys and girls attend the first few years of their school life. This is a big mistake. The greatest period in the pupil's life is when at five or six years of age he toddles off to school. The first few days there are many frightful yearnings for home and mother, but with those of his set he soon accustoms himself to the new life and the impressions are made, and so they continue to be made all through the grades. The very foundation of the pupil's education is made in the lower grades, and when we begin to give thoughtful consideration to the fact that the education of so many of our country boys and girls ends before they have finished the eighth grade it brings home to many of us the disquieting fact that the scanty materials of experience and surroundings down in the one-room school effectually shuts off the ambition for a higher education. Or in case they do succeed in coming through with an ambition for a high school or college education they find it difficult to bridge the widening chasm between the one-room rural school and the town or city high school.

"Michigan is not keeping pace with other states in the consolidation of rural schools," is a remark commonly heard in other localities. Perhaps Michigan should have advertised her system of consolidated rural schools like other states are doing, for there is no other state going ahead with the work on a larger scale. Most of these schools are in the northern part of the state where they have been organized with the townships as the unit. Certain communities in the lower peninsula are making satisfactory progress. Some of these schools have been organized in communities where it had seemed that the one-room school with its old equipment would be the school for the future as it had been in the past. Present conditions and the scarcity of competent teachers is resulting in other communities taking an interest in the problem. There seems to be a sweeping change in the attitude of many rural communities to-



Consolidated School at Goodrich, Genesee County.

and girls received eighth-grade diplomas. Out of every hundred who came to write sixty-five went away entitled to diplomas and thirty-five went away failures. Sixty-five was the product. Thirty-five was waste due to various reasons.

THE one-room rural district school with its limitations was the chief offender. How do we know this? An investigation of several graded rural consolidated schools having a sufficient number of teachers to prevent any teacher from being required to teach more than two grades showed the percentage of those who sought promotion after doing the work of the eighth grade to be eighty and above. Out of every one hundred who asked for promotion from the eighth grade of

eighth grade examinations, while only nine per cent of the pupils from the consolidated rural schools failed to pass the same examinations. In other counties the results were fully as convincing in favor of the consolidated school. This is too great a handicap to place upon children who live in the old rural districts. Rural consolidated schools seem the best remedy.

Considerable improvement could be brought about through employing better teachers and otherwise stimulating the functions of the one-room district schools, but such stimulants only use up more tax money without getting at the real root of the disease. It is time for us to think more of the unending generations of little boys and girls coming on to tread the furrows of our fields and prepare to give them some-

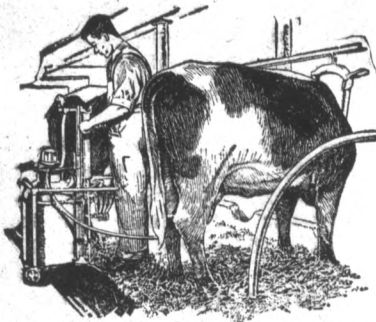


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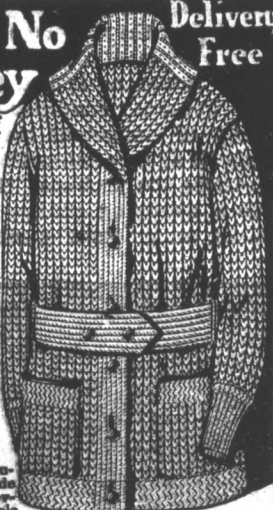
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FRANK R. WEISGERBER, Salina, Kansas

ward the educational opportunities afforded by the consolidated rural school.

THREE main questions in the minds of the people when they start out to investigate the merits of the consolidated school are: Is it what we want? Is it expensive? Is transportation practicable during the entire year? A recent visit to Genesee county to study the work as conducted by County School Commissioner J. L. Reigle convinced the writer that the work is a success. Mr. Reigle has three such schools under his supervision. The first consolidated school in the state was organized in 1906 at Grand Blanc when two rural districts joined together and consolidated with the village district. That was before there was much improved road in that section. This school proved a success from the beginning. The children were all transported from their homes to the school in the morning and back to their homes at night. The school board was careful in the selection of teachers, with the result that the community is well pleased with the results.

During the past ten years ninety per cent of the eighth grade pupils of the consolidated school passed their examinations each year, as against eighty per cent for the village schools of the county, and fifty per cent in the one-room rural schools. In the spring of 1919, when the new rural school consolidation went into effect, three adjoining districts voted to consolidate with the old school and form an agricultural high school. In the spring of 1920 all the school districts in the township were united into one strong unit. At

present there are about one hundred and ninety pupils enrolled in the Grand Blanc school. Six teachers are employed in the ten grades. Five of the rural districts are being maintained at present because of lack of room in the central building. Children are being transported from five of the districts.

Plans have been perfected for erecting a new building next year that will accommodate all the children in the township. The people are going to endeavor to make it one of the best agricultural high schools in the state. The transportation problem has passed the experimental stage. It has been successful during the coldest weather. It insures more regular attendance. It provides more weeks of school and insures a larger enrollment of boys and girls of school age within the community it serves.

The Goodrich Agricultural School was organized in the spring of 1919 when four rural district schools voted to join with the Goodrich village school. In 1913 the people of Goodrich erected a new school building which was planned to meet the future requirements of the community. There are now one hundred and seventy pupils enrolled, and six teachers are employed in handling the twelve grades. Last August the Brigham district voted to join the Goodrich school. Compare the conditions here with those in some of our one-room district schools and one can better appreciate the large factor that these consolidated schools are becoming in the upbuilding of a more satisfying country life.

At Gaines the agricultural school was organized in the spring of 1919

through three rural districts joining with the village school. It has twelve grades and five teachers with an enrollment of about two hundred pupils. In this enrollment the percentage of pupils in the higher grades is much greater than it is in districts where the pupils have to go to some town or city to attend high school. In fact, before the consolidation of the schools in these districts but few pupils had graduated from high schools. The work holds their interest for a longer period than it does where there is a gap between the grades and the high school course. The younger pupils have the entire school program constantly before them.

The Goodrich and Gaines schools are organized under the Smith-Hughes act and receive about \$1,000 a year from the federal government, besides an additional \$600 from the state for operating expenses. There is also the allowance of \$200 a year for each bus needed to transport the children.

These new schools are well organized for teaching the girls how to sew and cook; the two vocations which will be brought more or less into constant use by her. The boys are taught to build things with their own hands. These things, properly taught, not only increase their interest in school life, but they bring about a reunion of the home and school, a wide gap that must be bridged if the boys and girls are to appreciate the fact that country life in many ways excels city life. Perhaps the best result of the teaching of agriculture in the rural consolidated school is the new attitude of the boy toward the old farm.

Treatment for Hairless Pigs

By Dr. R. A. Runnells, Department of Animal Pathology, M. A. C.

FOR a number of years hairlessness in pigs has been a troublesome condition for hog raisers in the north central and north western states and to some extent in the corn belt. It probably causes greater losses in this state than we are aware of. It is a well-known fact that goitre in the human is quite prevalent in the sections just referred to. Hairlessness of the new-born is an accompanying symptom of goitre in swine. The malady appears most often in the spring litters. The pigs are farrowed at the termination of the regular gestation period or may be carried over a few days. They do not come prematurely as in infectious abortion. Parts of litters or whole litters are usually born in a weakened condition and with a complete or partial absence of hair. The weak and hairless ones die soon and the others, if they live, usually remain runty. The thyroid gland in the throat region which is enlarged in man affected with goitre is likewise enlarged in the pigs but because of their short, thick necks the enlargement usually goes unnoticed by the casual observer. The gland in the sow that farrows the pigs is likewise enlarged.

This thyroid gland has an important function to perform. It forms a chemical substance containing iodine which it throws out into the blood stream. This iodine compound is of the greatest importance in the development of the young animal. When, for some unknown reason, the animal body does not get its required amount of this substance as rapidly as it should, the thyroid gland becomes enlarged so as to allow a greater quantity of blood to pass through it in a given time. This enlarged condition of the gland is called goitre and other symptoms associated with it in new-born pigs are weakness and hairlessness.

To prevent the condition the hog raiser must make it possible for the brood sow to obtain the necessary

amount of iodine from her food. Iodine is usually present in the food in sufficient amount but the manner of feeding and caring for the hog may make it impossible for it to take into its system the proper amount. At the Wisconsin Experiment Station it has been determined that the following combination of factors may bring on the goitrous condition in pregnant sows and may result in hairlessness in her offspring, namely: A ration high in protein, low in roughage, a lack of exercise with the resulting constipation. It can be easily seen that these conditions prevail most frequently in the winter and hence spring litters are the ones that would be expected to be affected. The history of the outbreaks on the "affected" farms shows this to be true. Fall litters on the same farms produced by the same sows but which have had a smaller amount of protein food, plenty of green forage with its accompanying laxative effect, and the freedom to exercise, have practically always produced pigs free from this malady. Therefore, the thing to do, of course, is to provide for the pregnant sow during the winter months the same food and living conditions, as near as possible, as she is provided with during the summer gestation period. This means that the rich protein grain ration should be cut down and roughage in the form of clover or alfalfa hay added. The Wisconsin station advocates feeding the hay either in racks or chopped and added to the grain at the rate of twenty-five per cent of the total ration. Provide plenty of daily exercise. The latter, with the roughage, tends to keep the bowels in a laxative condition. Keep the quarters clean and dry.

If there are sows on the farm that produced hairless pigs last spring there is a possibility that they may do so again this spring but we have a remedy which may be used in conjunction with the foregoing suggestions.

This remedy consists of supplying to the pregnant sow the iodine which her thyroid gland seems to be unable to supply. The particular iodine compound that is the most satisfactory to use is the iodide of potash. This may be procured from your local veterinarian in ten-gram (approximately one-third ounce) doses. Have him powder it very finely. Thoroughly mix a ten-gram dose with each one hundred pounds of feed. Do this during the whole gestation period. This treatment is inexpensive and the results obtained from it wherever it has been used have been very satisfactory.

VEGETABLES THAT ARE BENEFITED BY FREEZING.

IT is known by most gardeners that cabbage, parsnips, turnips, salsify, and carrots are not injured by freezing, provided they thaw out while in contact with the earth or soil, but it is also a fact that certain winter vegetables are not at their best until they have been frozen hard at least once while in the ground. Parsnips and salsify especially, should stand in the ground until there has been weather cold enough to freeze several inches, then the roots may be dug and stored in an open pit and covered with dirt. The covering may be sufficiently heavy to prevent further freezing if it is desired to go into them during the winter, but it will do no harm if covered only a few inches so that they will freeze and thaw several times. They will be of better texture and flavor by having frozen. Turnips should not be allowed to freeze more than once, and cabbage also keeps best if covered well after the heads have frozen once or twice and thawed out under ground. The stalks should also be covered with soil when in storage, as the frost will come down them into the head if they protrude and are allowed to freeze and thaw a number of times.—H. F. G.

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How do you do your chores—the old way or the Jamesway?

The old way—cleaning out the barn is the dirtiest and hardest work on the place—a chore that is shirked by everyone who has a chance to get away from it.

Loading up the old wheelbarrow—pushing it out through the barn, leaving a trail of dripping filth—across a mushy yard and up on to a manure pile, trying the strength and patience of the strongest man; afterwards loading the wagon from the pile, losing the liquid—who could like such a job?



But dirty work like this is no longer necessary on any farm.

This task, like many other tasks in the dairy barn, has been changed by James to a chore that even the boys like and which they can do as well as the strongest man.

James Carriers Make Chore Time Short

What a snap it is to clean the barn the modern James Way! How easy to drop the carrier to the floor, lifting the manure barely knee high to get it into the tub.

In a few moments the big tub can be loaded with more manure than half a dozen wheelbarrows can hold.

Then a quick, easy run out of the barn and a jerk on the trip empties the load directly into wagon or spreader or onto the pile.

And it's a clean way. The tub is practically water tight—no slopping or dripping.



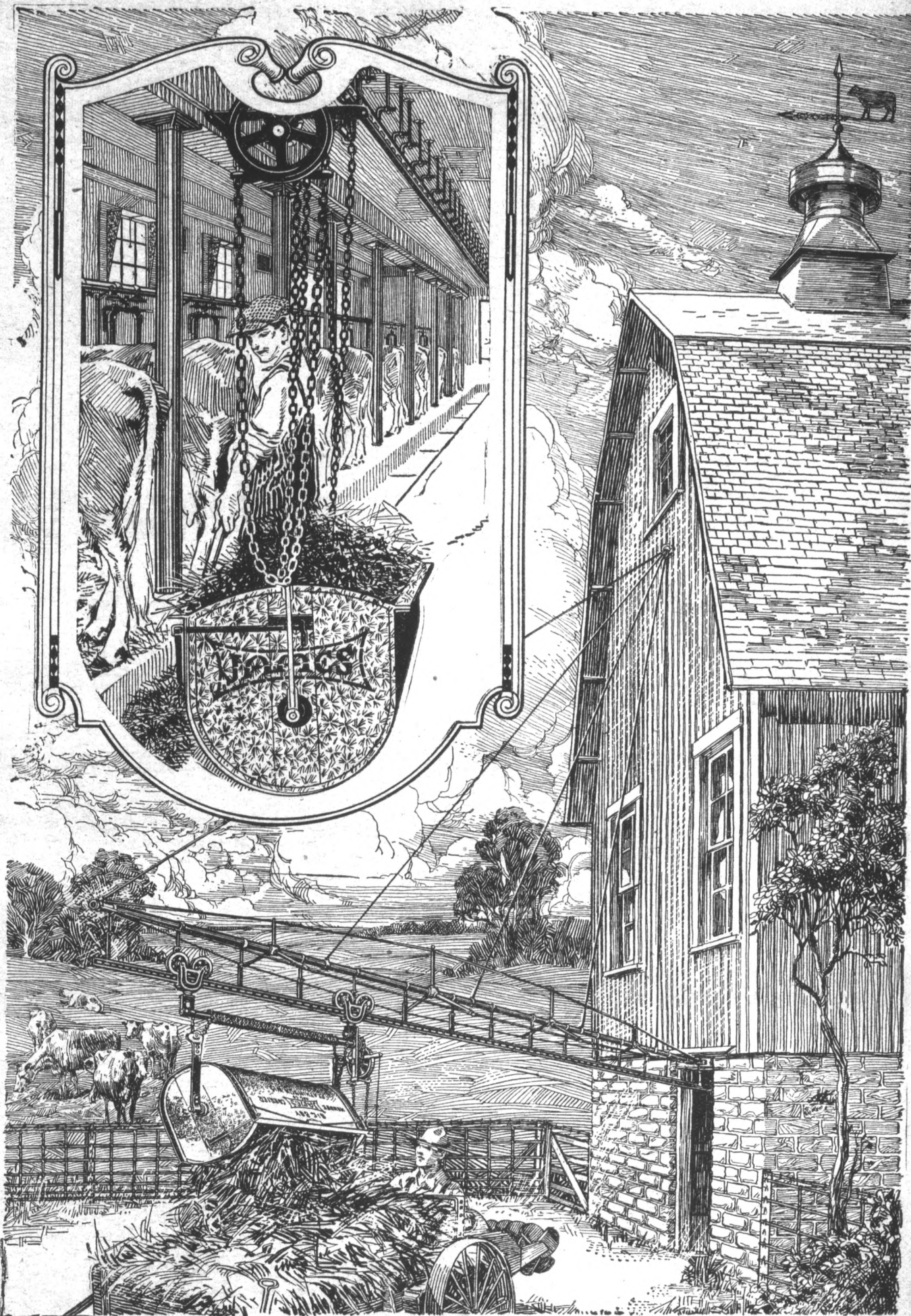
A most attractive feature of this new way is that freedom from the drudgery costs you less—in actual dollars and cents—than the old way of cleaning with a wheelbarrow, or with wagon driven through the barn.

Every farmer ought to know that the old-time wheelbarrow way of cleaning the barn is the most expensive way. He knows very well it's the hardest.

The cost of wheelbarrows or the cost of modern carriers is only a fraction of the real cost.

The real expense is the time required—time for which you pay cash if your hired man does the work; or time in which you can be earning bigger profits if you do it yourself.

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There are many other James devices that save labor, increase milk yields, help sanitation and improve cow health, such as Cow, Calf and Bull Pens, Feed Mangers, Calf Pail Holders, Sure-Stop Swinging Post, Swinging Cranes, "Safety First" Bull Staff, Handy Milk Stools, etc.

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It explains the easy way of putting up carriers, setting up stalls and pens and attaching drinking cups.

Skilled help is not required, because of the ingenious James Anchors and because the equipment is assembled at the factory.

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It tells about James Barn Plan Service; the many James barn experts who are at your service—men who know what has been successful and what has not, what not to do as well as what to do in planning convenient, money-saving barns.

Their advice on barn planning, ventilation and other barn problems is free, with no charge for floor plans.

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With the famous full-swing Dolly—hand or power type—the washer that washes clothes cleaner, quicker and safer. Fitted with steel stand and swinging wringer, if desired. See one work—then buy it and save!

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Our Service Department

DIVERTING SURFACE WATER.

I have a small field in a village. The street above it, which has been the main thoroughfare for fifty years, has recently been taken over by the county and gravelled. The watershed of about thirty acres above the street flows in a gutter beside the street, then through a culvert across the street and through a ditch across my land into a mill pond. The road builders have put in another culvert which will discharge water and flood the best of the land, and it will settle there if not ditched. I have never made any complaint about the ditch, but flooding the best of the land is another matter. Can I oblige them to provide a way to carry off the water? Have I any redress?—J. K.

Has a highway commissioner a right to put a culvert across the road so as to drain the water across the road and wash the field full of ditches. When the road was laid there was a hollow filled up, and no doubt water has flowed through there at some time or another, but none has flowed there for forty years, to my certain knowledge. This water could have been carried down the side of the road just as well, but the commissioner refused to have this done because it would cost a little more to do it. What are the rights of the owner of land so flooded?—C. H.

Nobody has a right to divert surface water so as to cast it upon the lower proprietor in a new place. In this respect the highway commissioner has no greater rights than any other person. The injured party may abate the nuisance himself, sue for damages, or get an injunction. J. R. R.

and central Pennsylvania and in West Virginia. The disease also attacks the cotton plant. Where found in small isolated places the soil may be treated with steam or formaldehyde, but generally speaking we must look to varieties that resist the disease for hope in saving the crop once the trouble becomes general. Fortunately some of our best varieties are immune, such as the Irish Cobbler, Early Petoskey and Sutton's Flourball of the Cobbler group; Ehnola and Extra Early Sunlight of the Michigan group; Green Mountain and Green Mountain Junior of the Green Mountain group and the Round Pinkeye of the Peachblow group. Those interested in this disease should write the United States Department of Agriculture at Washington, D. C., for Circular III, on "Potato Wart."

ENSILOING DRY CORN.

I would like to know if it is advisable to put dry cornstalks in silo now? I did not get silo up in time to fill when corn was cut. How much water will it need? I am thinking that the silage will rot down like a manure heap if dry stalks are soaked with water. I have husked out most of the corn.

Kent Co.

F. M. L.

It is advisable to put dry cornstalks in silo if you have the room. You can get a much greater food value out of them if they are ensiled than you can to feed them dry, because a great per cent of them will not be eaten at all when dry. You are wrong when you say that these stalks put in silo and thoroughly wetted will rot. The reverse is true. If you put them in dry you will lose more of them. By wetting them thoroughly they soften and pack down, which excludes the air. If you run them in dry there will be air enough mixed in with cornstalks to develop dry mold. With them thoroughly wetted down and cut fine you will preserve them and have good silage. C. C. L.

CAN BUTTER-FAT BE FED WITH MILK?

Can butter-fat be fed into milk. Our condensary says that it can, also that the weather conditions changes the amount of fat in milk. E. K.

No! Butter-fat cannot be fed into milk. This is an old question, but it comes up for discussion every little while. If you could change the per cent of butter-fat which a cow produces, by feeding, then you could easily make a Holstein cow give as rich milk as a Jersey. Even taking cows of the same breeding, they vary much in per cent of butter-fat. You can have two cows standing side by side in the barn, of the same breeding. They look alike, they are fed alike, and yet one may give considerably richer milk than the other. It is therefore apparent that feeding has little to do with the per cent of butter-fat. The individuality and breeding of the cow controls in this matter. C. C. L.

SORGHUM FOR ENSILAGE.

I have sugar cane and would like to wither it. Would it be all right to mix with corn when filling silo? Lenawee Co. E. E. E.

It would be much better to mix the sorghum (sugar cane) with corn as you fill the silo than it would to put it in alone, although sorghum makes a good fair ensilage when used alone. However, it is not as good as corn. C. C. L.

POTATO WART DISEASE.

Kindly give me information on the potato wart disease, where it is found in this country, and how it may be controlled. A. S.

This potato disease was first discovered in the United States in 1918 and is considered one of the most dangerous to the white potato crop. It was introduced from Europe. In this country it is now known to be in eastern

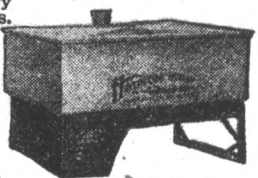
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—by cooking potatoes, pumpkins and other feed. If the market on potatoes is off, cook and feed to sell at a profit.

Also use Hudson Cookers for boiling spray mixture, canning, scalding hogs and poultry, or for wash-day and cleaning dairy utensils. Heat quickly—burn cobs, wood or coal.



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Position Wanted as manager of modern farm, married, lifetime experience in farming, stock raising, fruit growing, soil improvement, machinery, six winters at Agricultural Colleges. Best references. Box G 1120 care of Mich. Farmer, Detroit.

WANTED Experienced competent young married man without children. Twenty acres. Registered grains, fruits, poultry. With wife who is first class housekeeper. Give experience and references; and wages wanted by year, on condition work is competent and satisfactory. State Farms Assn., Kalamazoo, Mich.

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Bourbon Red Turkeys, hardy, very domestic. Write for full prices. MAURICE A. RECTOR, R. 8, Rockford, Mich.

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If you appreciate value, you'll find it in this splendid men's sweater.

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Send your name and address, giving size wanted, and we will send you the sweater by mail, postpaid. On delivery you pay mailman our low bargain price of only \$2.29. Sweater is made of heavy knit commercial yarn—has V-neck sleeves—slip over style. Ideal for outdoor or indoor wear. Wear it under your coat, and you'll be surprised at the warmth. Khaki color; size 38 to 46. This wonderful value can never be duplicated again. Order a supply NOW. Order by No. 22513917.



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BY INVITATION
MEMBER OF

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the World's Largest Manufacturers
of Measuring Pumps
have never used a
Glass Container for Gasoline*

Mr. S. F. Bowser was the Pioneer of the Oil Tank and Pump industry. His first measuring pump was designed, built and patented in 1885.

During these thirty-five years it has always been Mr. Bowser's ideal to promote the greatest possible Accuracy, Safety and Economy in the commercial handling of oils and other hazardous liquids.

It is a fact that a measuring device, providing a glass container for liquid, was patented and offered on the market by another manufacturer more than thirty years ago.

The glass container for measuring liquids is not a new idea. But Bowser has persistently refused to subscribe to a principle that does not assure the utmost Accurate, Safe, Dependable Service.

It is apparent that a glass container is too fragile to insure safety in handling dangerous liquids, such as gasoline. Gravity discharge, depending on the eye for control, does not and cannot assure absolutely accurate measurement.

Furthermore, the mechanical features necessary to that type of measuring device lend themselves to easy manipulation by a dishonest operator.

Scores of fires destroying property, taking lives, causing huge financial losses, are the yearly toll of the easily breakable glass container type of gasoline measuring devices.

Not once in thirty-five years has any type of Bowser Equipment caused a fire, and seven out of every ten oil Tanks and Measuring Pumps used in the world have been made by Bowser.

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The present Bowser Piston-Type Measuring Pump is the result of experience gained in building MORE THAN A MILLION Bowser Pumps of the same type, which have preceded it.

Therefore, the splendid record of the Bowser Company in the Industry it leads is not only the result of high ideals, but high ideals reduced to a practical, scientific standard.

The unlimited resources and manufacturing facilities of the Bowser Company are dedicated to the task of building Accurate, Safe, Economical Equipment for vending hazardous liquids. Except as we improve our present designs, a Bowser Measuring pump, built a year from today, will be the same dependable Pump you are using today.

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This is the first of an Educational Series every buyer of Gasoline should read. Watch for the next Bowser message.

BOWSER

ESTABLISHED 1885

Tuberculin Test Criticised and Defended

EMILE BERLINER, president of the tuberculosis association, has given out a statement to the press in which he declares that the tuberculin test as a means of insuring a safe and sanitary milk supply is wholly inadequate. "A herd may be tested today, and no reacting animal be found, and again in six months, when one or several animals may be discovered with tuberculosis," says Mr. Berliner. "It is entirely possible that within a month from the first test the milk from that herd may contain living, active, virulent tubercle bacilli. And such milk, if consumed in the raw state, in particular by children, may give them tuberculosis, notably of the intestines, of the spine and of the glands."

"Butter made from the raw cream of such milk would likewise contain the bacilli in an active and virulent state for at least four to five months. This has been proved by careful tests made at the laboratories of the United States Department of Agriculture."

"It is easy to dope a herd with certain easily obtainable chemicals and thereby prevent the tuberculin from acting in a test, even though animals in the herd are affected with open tuberculosis. Animals may be in excellent physical condition, giving plenty of milk that is entirely pure and wholesome for healthy adults, containing no tubercle bacilli nor other disease germs, and yet such animals may have a touch of tuberculosis, which would cause them to react to the tuberculin test."

"The monthly record of the health officer of the District of Columbia prove that herds of dairies licensed by him, because they were tuberculin tested and inspected at the time the license was issued, may yet furnish milk at times, and which can be freely sold in the District of Columbia, which afterwards is found by him to rate as low as thirty-nine, and many between forty and sixty, out of a possible one hundred in the sanitary standards. This by itself is proof that the tuberculin test and occasional inspecting is wholly inadequate to be relied upon."

"Even slightly infected or impure raw milk and cream, if continually partaken of, will gradually reduce the natural resistance of the human body; if then, the disease germs should happen to enter through the air, or through water and food, sickness will follow, the outcome of which depends on the degree to which the person has been weakened and his resistance reduced."

"These statements have been drawn up after consultation with a prominent practical investigator of the United States government, a man versed in the subject of tuberculosis and the conditions on which the entrance of disease germs into milk depends. This prominent investigator, being an employe of the government, cannot publicly testify unless he is officially summoned to do so," says Mr. Berliner.

The remedy for this condition, according to this supposed expert, is pasteurization of all milk, under official supervision.

FIGURES just given out by Dr. William C. Fowler, District of Columbia health officer, are somewhat at variance with the assertions of the tubercular association president. The District of Columbia was one of the first municipalities to insist on the tuberculin testing of dairy herds contributing milk to the city. Practically all the milk received here for several years has been from tested cows, and quite largely from accredited herds.

Dr. Fowler reports "that in the last twenty years there has been a marked

increase in infant mortality, the figures showing only one child in every 11.72 dying in 1919, as against one in every 3.44 in 1899. There is a general lengthening of life here in the district. Tuberculosis is rapidly decreasing in the district. In 1919 we had fewer cases of tuberculosis than any other city in the United States."

Commenting on this milk discussion, Secretary A. M. Loomis, of the National Dairy Union, says: "I know of no reason why Mr. Berliner or anyone else should seek to discredit milk as food by the impressions which this statement seeks to convey, and especially in a city where the milk supply is so carefully watched and the public health guarded as in Washington. To say the least, the authorities are far from being in agreement that bovine tuberculosis can be, or ever has been, transmitted to human beings through the use of milk as food, and I have no evidence upon which to predicate an opinion that Mr. Berliner's statement adds anything to either side of this question. The record of the decrease in tuberculosis in Washington under the administration of the present laws would indicate that he is entirely wrong in his contention. With all that he says about the necessity for careful and successful pasteurization, most authorities will agree, but not because of the reasons he advances."

E. E. R.

Alfalfa in Cass County

A THOUSAND acres of Grimm alfalfa, guaranteed as to variety and place of growth, will be grown in Cass county this year, according to C. M. Kidman, county agricultural agent of Cass county. Farmers of that county placed an order with the State Farm Bureau for 8,805 pounds of Grimm, and 1,852 pounds of common alfalfa which together will cover two-thirds of the alfalfa acreage of the county, it is estimated.

Cass is a fairly representative county of Michigan. Its crops being quite diversified and its farmers being well representative of the average farmer in the state in point of prosperity. According to the State Farm Bureau it is also a representative example of the educational nature of the work of the seed department of the State Farm Bureau. Alfalfa guaranteed not only as

to variety but also as to place grown, costs a little more than that for which no guarantee is given, but Cass county farmers have been willing to pay the price.

Farmers know that the principle of using good seed is sound. The actual results of using such seed, however, is comparatively unknown in Cass, as well as in all other counties of the state. Up until a year ago no organization had succeeded in obtaining quantities of seed upon which the farmers could absolutely rely. The most convincing part of the lesson of the value of planting northern grown seed will not be demonstrated until later years, when the crop planted next spring and grown during the summer weathers the conditions of succeeding winters. Two-thirds of the alfalfa acreage of Cass county will come from northern territory where climatic conditions are similar to that of Cass county, where the winters are as cold and the land exposed to alternate freezing and thawing, and the surviving plants have to be hardy enough to resist these adverse conditions. One-third will come from seed which has been secured through the usual channels and whose source is usually unknown to the farmer, much of it probably from the south. There isn't any question as to the value of the lesson involved.

When the State Farm Bureau seed department began its campaign for pure seeds the farmers of Cass county began looking on their farms for weeds brought in adulterated seeds and they found dodder along the fences, roads, and ditches. The dodder did not originate in Cass county. It comes very largely from southern Indiana and other southern sources. A dealer in seeds who has furnished much of the seed for this county is understood to have secured it from assembling stations in southern Indiana. The farmers are said to have surmised the connection.

This last year a consignment of June clover was shipped into the county from a local dealer who is quoted as having said that it was guaranteed to be ninety-nine per cent pure, nothing at all said as to its place of growth, except on general recommendation. When the county agent had the seed examined by the state seed analyst it proved to contain 9.85 per cent dodder. This seed was sold and planted in the county. One sample of seed purchased through a local dealer sent by the county agent to the state seed analyst was found to contain ten per cent of yellowblossom annual sweet clover. There are a number of instances on record where seed used by the farmers

in the past has been condemned by the seed analyst.

For farmers to secure seed known to be free from dodder and other noxious weeds is a great opportunity. It is putting into practice the things which have been taught by M. A. C. for years but against which the farmers have not been prepared to defend themselves. When the crop lives through the succeeding winters they will have an object lesson before them of not only what it means to have fields comparatively free from noxious weeds but also to have that additional attribute of being hardy enough to be adapted to Michigan's climate and soil conditions. In this connection it is obvious to see they will also learn the benefits to be derived from cooperative endeavors. "No. 1" has always been the farmer's lucky number. Through cooperation he is learning that what is good for his neighbor is good for the community and that it takes the community, the county and the state as a whole to solve the problems which confront him.

STABLE MANURE VS. COMMERCIAL FERTILIZER.

How much commercial fertilizer of so-called grade of 1-8-3 would have to be sown per acre to equal ten loads of manure per acre, mostly stable manure, said loads hauled on spreader rated at eighty bushels capacity.

Ionia Co.

J. G. S.

It is not proper to compare commercial fertilizer, analysis one per cent nitrogen, eight per cent phosphoric acid, and three per cent potash, with stable manure, because they are so different in analysis. It would be about the same as comparing corn meal with cottonseed meal as a feed, for dairy cows, or other live stock. The fact is, your 1-8-3 fertilizer should be used in connection with stable manure, because stable manure is deficient in phosphoric acid and potash, but contains a more liberal per cent of nitrogen, the amount of nitrogen, of course, depending upon the condition of the stable manure. Some of it would not contain over one-half to one per cent, and other stable manure, resulting from richly fed animals would be much higher. But no matter whether the stable manure is from well-fed animals or not, the per cent of phosphoric acid and potash is always low, considering the nitrogen. Consequently the 1-8-3 fertilizer would supplement nicely with stable manure. My judgment would be to use a rather light dressing of stable manure, and then supplement this with an application of your 1-8-3 fertilizer.

C. C. L.

MICHIGAN FRUIT GROWERS MEET.

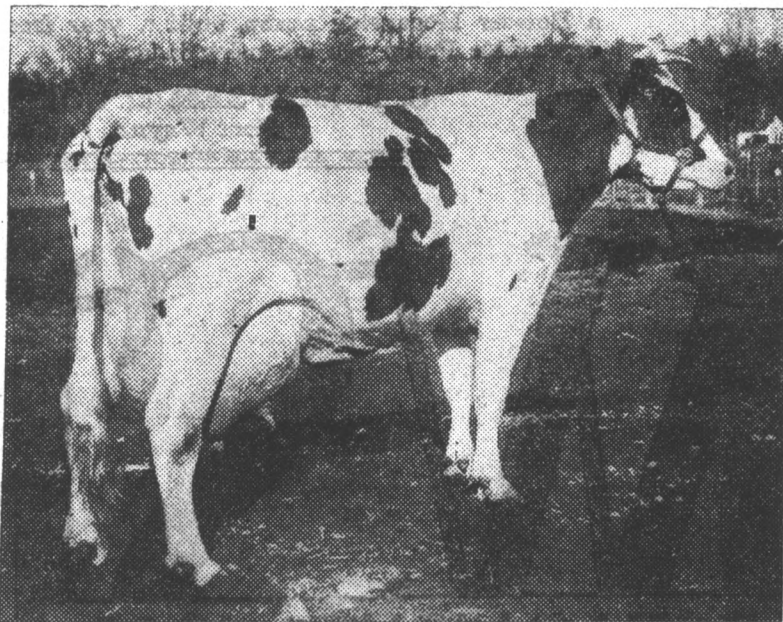
THE fiftieth annual meeting of the Michigan State Horticultural Society will be held at the Pantlind Hotel in Grand Rapids, November 30 to December 2, inclusive.

R. V. Goff, of Sturgeon Bay, Wisconsin, will handle the subject of "Marketing Problems." One of the big problems foremost in the minds of fruit growers is the subject of spraying. There are a great many advocates of using a dry material in the form of "Dust," while others maintain that liquid sprays are the most efficient. Prof. H. H. Whetzel, of Cornell University, Ithaca, N. Y., will have some very interesting results which he will present to the convention. Farm financing by communities, orchard fertilizers, transportation problems, pruning, and practically every subject appertaining to the fruit industry will be forcibly discussed.

The student speaking contest originated in this society some time ago, will be featured on Wednesday morning, after which will occur the various reports of the society, and the election of officers for the ensuing year.

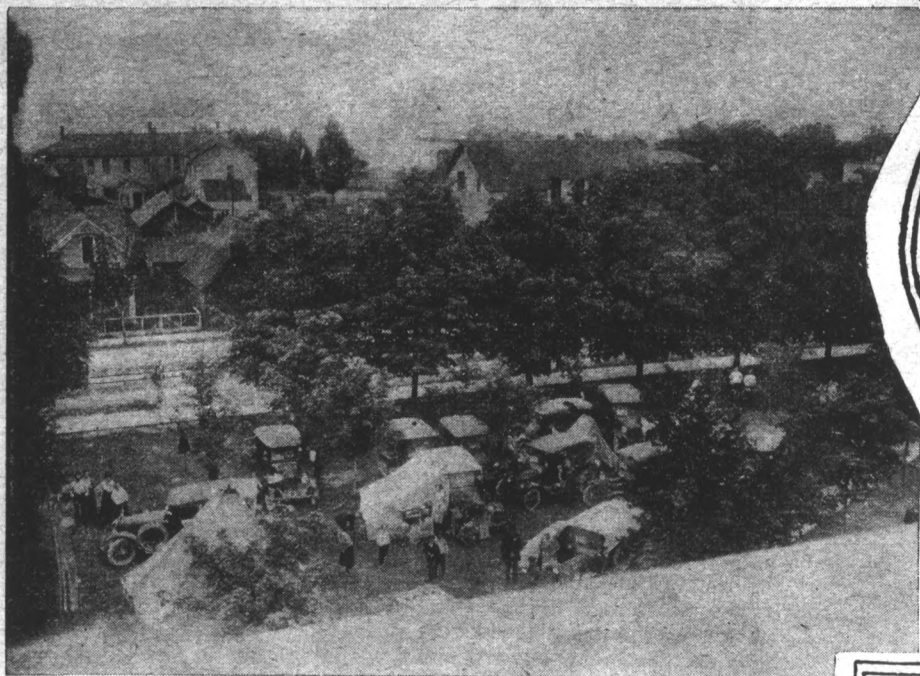
Hotel reservations are being made early, and every effort is being put forth to make this semi-centennial meeting the liveliest the society has ever held. Further details may be secured upon application to George M. Low, Secretary, Bangor, Michigan, who extends a hearty welcome to everyone connected with, or interested in the fruit industry.

Giddings Buys New Herd Sire

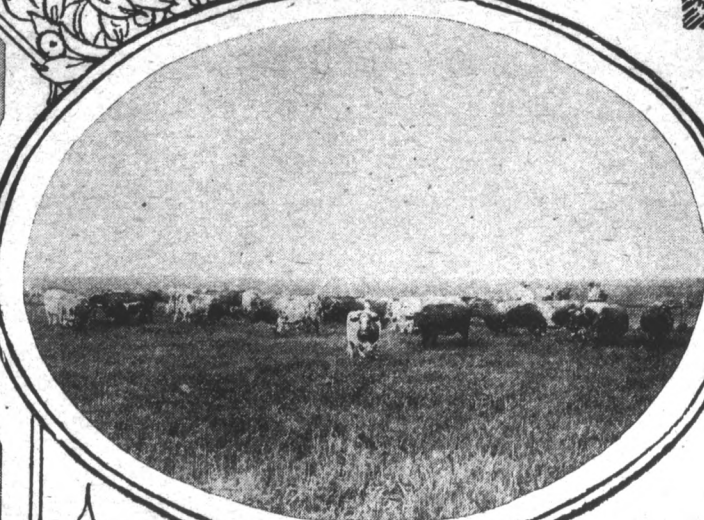


May Echo Sylvia is the only cow in the world to give 1,005 pounds of milk and forty-one pounds of butter in seven days. She has made four seven-day records above thirty-five pounds of butter each. This great cow is owned by A. C. Hardy, of Ontario, and when Mr. Giddings went to see this great family he just couldn't help buying one of her grandsons. Mr. Giddings' new sire is sired by one of her best sons.

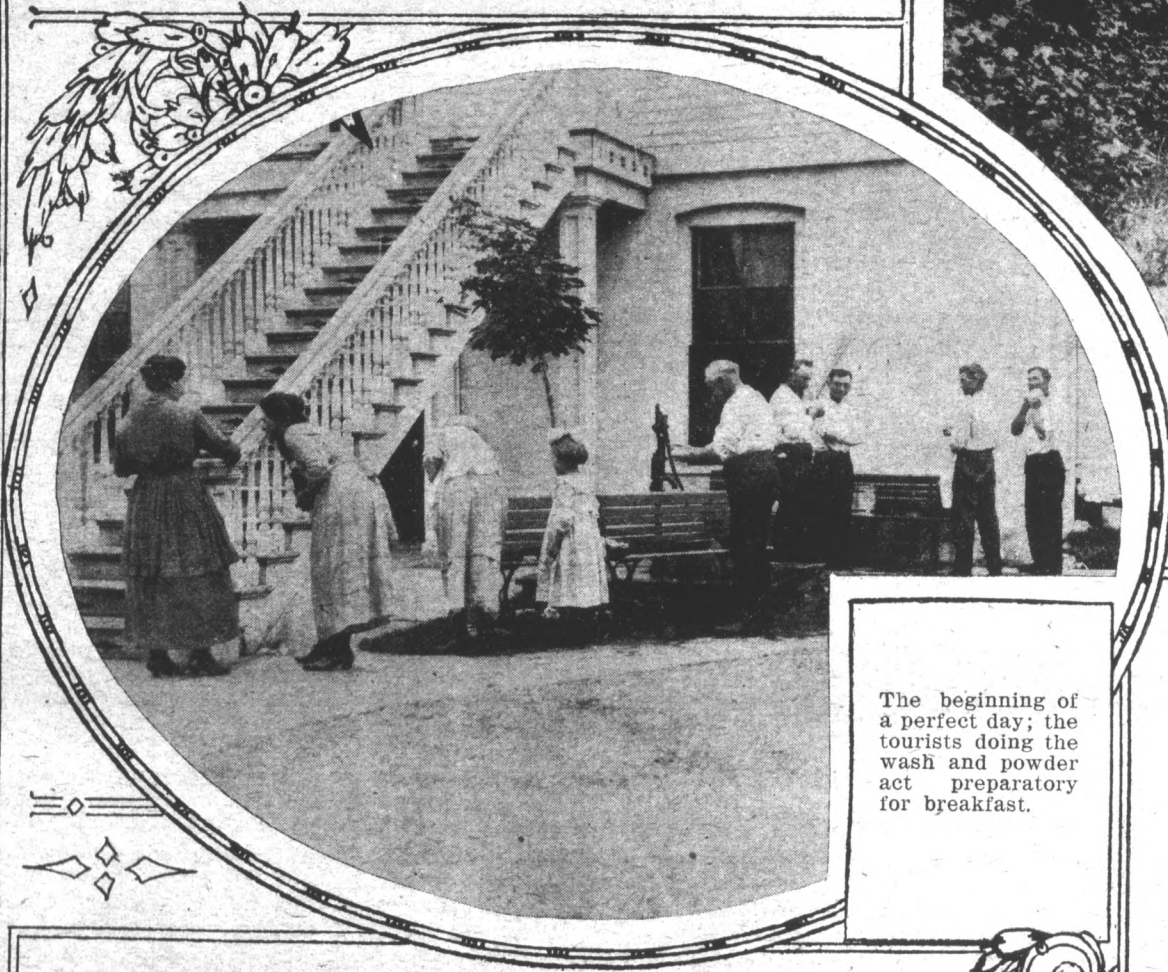
Farmers Auto Through Northeastern Michigan



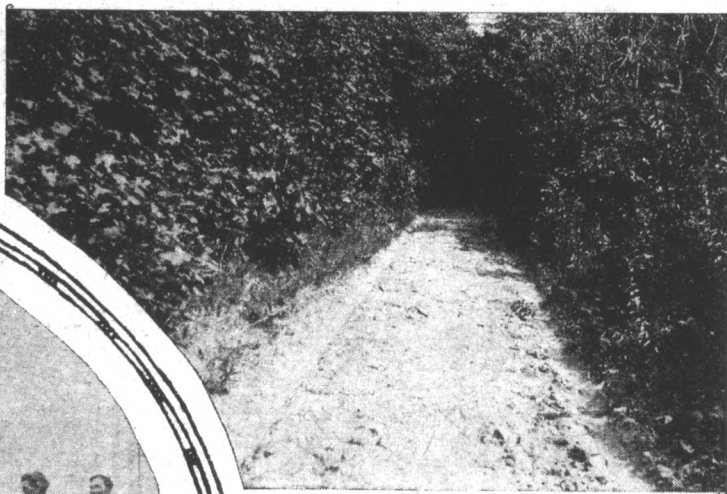
How a portion of the farmers' camp at Rogers City in Presque Isle county, looked from above.



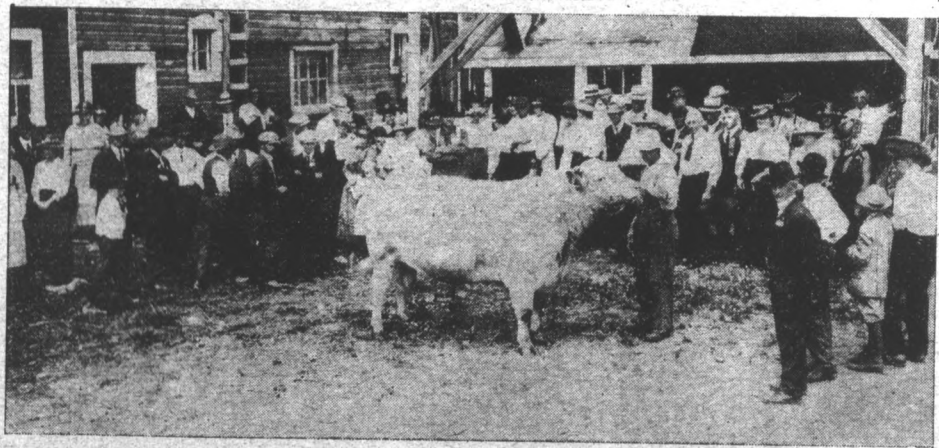
From this herd of Shorthorns on the Prescott Farms, International prize winners have been selected.



The beginning of a perfect day; the tourists doing the wash and powder act preparatory for breakfast.



Frequently nature's efforts have been so successful in producing vegetation that a canopy of leaves covered the roadway.



Of all the hundreds of interesting things seen by these farmer folks, nothing appealed to them more strongly than the superlative exhibits of the breeder's art.



Throughout the trip every tourist was made happy and kept smiling by that most congenial spirit, Rev. Konelen, of Bay City.

THE VOICE OF THE PACK

By EDISON MARSHALL

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CHAPTER I.

(Our New Serial. First Installment.)

DAN FAILING stepped out of the elevator and was at once absorbed in the crowd that ever surged up and down Broad Street. Where the crowd came from, or what it was doing, or where it was going was one of the mysteries of Gitcheapolis. It appealed to a person rather as does a river: eternal, infinite, having no control over its direction or movement, but only subject to vast, underlying natural laws. In this case, the laws were neither gravity nor cohesion, but rather unnamed laws that go clear back to the struggle for existence and self-preservation. Once in the crowd, Failing surrendered up all individuality. He was just one of the ordinary drops of water, not an interesting, elaborate, physical and chemical combination to be studied on the slide of a microscope. No one glanced at him in particular. He was enough like the other drops of water not to attract attention. He wore fairly passable clothes, neither rich nor shabby. He was a tall man, but gave no impression of strength because of the exceeding sparseness of his frame. As long as he remained in the crowd, he wasn't important enough to be studied. But soon he turned off, through the park, and straightway found himself alone.

The noise and bustle of the crowd—never loud or startling, but so continuous that the senses are scarcely more aware of them than of the beating of one's own heart—suddenly and utterly died almost at the border of the park. It was as if an ax had chopped them off, and left the silence of the wild place. The gravel path that slanted through the green lawns did not lead anywhere in particular. It made a big loop and came out almost where it went in. Perhaps that is the reason that the busy crowds did not launch forth upon it. Crowds, like electricity, take the shortest course. Moreover, the hour was still some distance from noon, and the afternoon pleasure seekers had not yet come. But the morning had advanced far enough so that all the old castaways that had slept in the park had departed. Dan had the path all to himself.

Although he had plenty of other things to think about, the phenomena of the sudden silence came home to him very straight indeed. The noise from the street seemed wholly unable to penetrate the thick branches of the trees. He could even hear the leaves whisking and flicking together, and when a man can discern this, he can hear the cushions of a mountain lion

on a trail at night. Of course Dan Failing had never heard a mountain lion. Except on the railroad tracks between, he had never really been away from cities in his life.

At once his thought went back to the doctor's words. Dan had a very retentive memory as well as an extra fine imagination. The two always seem to go together. The words were still repeating themselves over and over in his ears, and the doctor's face was still before his eyes. It had been a kind face; the lips had even curled in a little smile of encouragement. But the doctor had been perfectly frank, entirely straightforward. Dan was glad that he had. At least, he was rid of the dreadful uncertainty. There had been no evasion in his verdict.

"I've made every test," he had said. "They're pretty well shot. Of course, you can go to some sanitarium, if you have got the money. If you haven't—enjoy yourself all you can for about six months."

Dan's voice had been perfectly cool and sure when he replied. He had smiled a little, too. He was still rather proud of that smile. "Six months? Isn't that rather short?"

"Maybe a whole lot shorter. I think that's the limit."

There was the situation: Dan Failing had but six months to live. Of course, the doctor said, if he had the money he could go to a sanitarium. But he had spoken entirely hopelessly. Besides, Dan didn't have the money. He pushed all thought of sanitariums out of his mind. Instead, he began to wonder whether his mother had been entirely wise in her effort to keep him from the "rough games" of the boys of his own age. He realized now that he had been an under-weight all his life—that the frailty that had thrust him to the edge of the grave had begun in his earliest boyhood. But it wasn't that he was born with physical handicaps. He had weighed a full ten pounds; and the doctor had told his father that a sturdier little chap was not to be found in any maternity bed in the whole city. But his mother was convinced that the child was delicate and must be sheltered. Never in all the history of his family, so far as Dan knew, had there been a death from the malady that afflicted him. Yet his sentence was signed and sealed.

But he harbored no resentment against his mother. It was all in the game. She had done what she thought was best. And he began to wonder in

what way he could get the greatest pleasure from his last six months of life.

"Good Lord!" he breathed. "I may not even be here to see the snows come!" Perhaps there was a grim note in his voice. There was certainly no tragedy, no offensive sentimentality. He was looking the matter in the face. But it was true that Dan had always been partial to the winter season. When the snow lay all over the farmlands and bowed down the limbs of the trees, it had always awakened a curious flood of feelings in the wasted man. It seemed to him that he could remember other winters, wherein the snow lay for endless miles over an endless wilderness, and here and there were strange, many-toed tracks that could be followed in the icy dawn. He didn't ever know just what made the tracks, except that they were creatures of fang and talon that no law had ever tamed. But of course it was just a fancy. He wasn't in the least misled about it. He knew that he had never, in his lifetime, seen the wilderness. Of course his grandfather had been a frontiersman of the first order, and all his ancestors before him—a rangy, hardy breed whose wings would crumple in civilization—but he himself had always lived in cities. Yet the falling snows, soft and gentle but with a kind of remorselessness he could sense but could not understand, had always stirred him. He'd often imagined that he would like to see the forests in winter. He knew something about forests. He had gone one year to college and had studied all the forestry that the university heads would let him take. Later he had read endless books on the same subject. But the knowledge had never done him any good. Except for a few boyish dreams, he never imagined that it would.

In him you could see a reflection of the boy that played beside the pond of snow water, twenty years before. His dark eyes were still rather large and perhaps the wasted flesh around them made them seem larger than they were. But it was a little hard to see them, as he wore large glasses. His mother had been sure, years before, that he needed glasses; and she had easily found an oculist that agreed with her.

Now that he was alone on the path, the utter absence of color in his cheeks was startling. That meant the absence of red—that warm glow of the blood, eager and alive in his veins. There

was indeed, another color, visible only because of the stark whiteness of his skin. He was newly shaven, and his lips and chin looked somewhat blue from the heavy growth of hair under the skin. Perhaps an observer would have noticed lean hands, with big-knuckled fingers, a rather firm mouth, and closely cropped dark hair. He was twenty-nine years of age, but he looked somewhat older. He knew now that he was never going to be any older. A doctor as sure of himself as the one he had just consulted couldn't possibly be mistaken.

It was rather refreshing to get into the park. Dan could think ever so much more clearly. He never could think in a crowd. Someway, the hurrying people always seemed to bewilder him. Here the leaves were flicking and rustling over his head, and the shadows made a curious patchwork on the green lawns. He became quite calm and reflective. And then he sat down on a park bench, just beneath the spreading limb of a great tree. He would sit here, he thought, until he finally decided what he would do with his remaining six months.

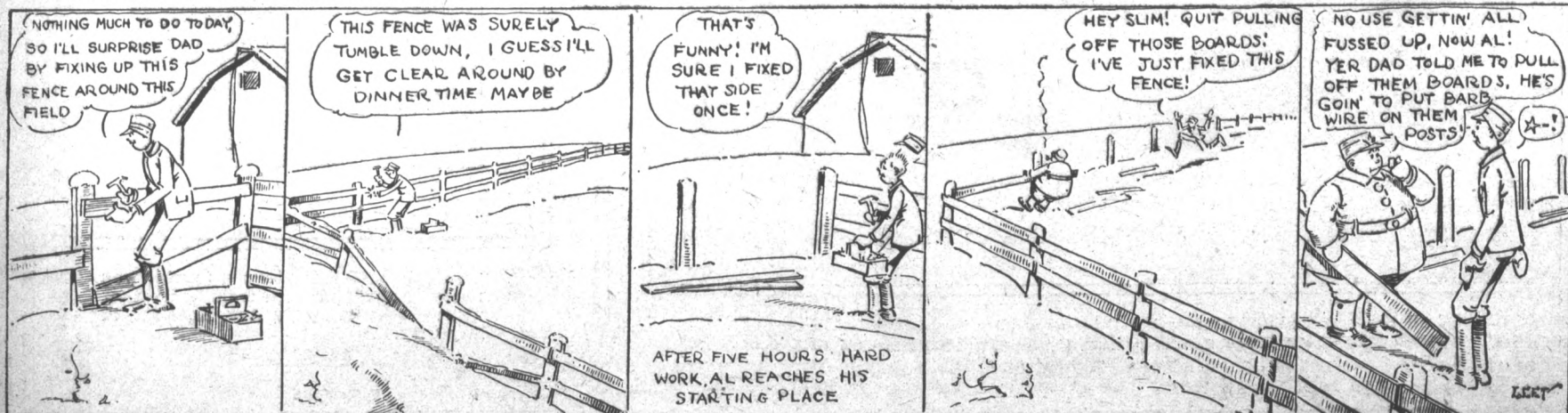
He hadn't been able to go to war. The recruiting officer had been very kind but most determined. The boys had brought him great tales of France. It might be nice to go to France and live in some country inn until he died. But he didn't have very long to think upon this vein. For at that instant the squirrel came down to see if he had a nut.

It was the squirrel of Destiny. But Dan didn't know it then.

Bushy-tail was not particularly afraid of the human beings that passed up and down the park, because he had learned by experience that they usually attempted no harm to him. But, nevertheless, he had his instincts. He didn't entirely trust them. Occasionally a child would come with a bag of nuts, and he would sit on the grass not a dozen feet away to gather such as were thrown to him. But all the time he kept one sharp eye open for any sudden or dangerous motions. And every instinct warned him against coming nearer than a dozen feet. After several generations, probably the squirrels of this park would climb all over its visitors and sniff in their ears and investigate the back of their necks. But this wasn't the way of Bushy-tail. He had come too recently from the wild places. And he wondered, most intensely, whether this tall, forked creature had a pocket full of

AL ACRES—Al and Slim Get Wires Crossed.

—By Frank R. Leet



nuts. He swung down on the grass last. Tenderfoot though he was, Dan to see.

"Dan's eyes suddenly sparkled with delight. And he forgot all about the doctor's words and his own prospects in his bitter regrets that he had not brought a pocketful of nuts. Unfortunately, he had never acquired the peanut habit. His mother had always thought it vulgar.

And then Dan did a curious thing. Even later, he didn't know why he did it, or what gave him the idea that he could decoy the squirrel up to him by doing it. That was his only purpose—just to see how close the squirrel would come to him. He thought he would like to look into the bright eyes at close range. All he did was suddenly to freeze into one position—in an instant rendered as motionless as the rather questionable-looking stone-stork that was perched on the fountain.

The squirrel was very close to him, and Dan seemed to know by instinct that the movement of a single muscle would give him away. So he sat as if he were posing before a photographer's camera.

After ten seconds had elapsed, the squirrel stood on his haunches to see better. First he looked a long time with his left eye. Then he turned his head and looked very carefully with his right. Then he backed off a short distance and tried to get a focus with both. Then he came some half-dozen steps nearer.

All the time, Dan was sitting in perfectly plain sight. It wasn't as if he were hiding. But the squirrel had learned to judge all life by its motion alone, and he was completely at a loss to interpret or understand a motionless figure.

Bushy-tail drew off a little further, fully convinced at last that his hopes of a nut from a child's hand were blasted. But he turned to look once more. The figure still sat utterly inert. And all at once he forgot his devouring hunger in the face of an overwhelming curiosity.

He came somewhat nearer and looked a long time. Then he made a half-circle about the bench, turning his head as he moved. He was more puzzled than ever, but he was no longer afraid. His curiosity had become so intense that no room for fear was left. And then he sprang upon the park bench.

Dan moved then. The movement consisted of a sudden heightening of the light in his eyes. But the squirrel didn't see it. It takes a muscular response to be visible to the eyes of the wild things.

The squirrel crept slowly along the bench, stopping to sniff, stopping to stare with one eye and another, just devoured from head to tail with curiosity. And then he leaped on Dan's knee.

He was quite convinced, by now, that this warm perch on which he stood was the most singular and interesting object of his young life. It was true that he was faintly worried by the smell that reached his nostrils. But all it really did was further to incite his curiosity. He followed the leg up to the hip and then perched on the elbow. And an instant more he was poking a cold nose into Dan's neck.

But if the squirrel was excited by all these developments, its amazement was nothing compared to Dan's. It had been the most astounding incident in the man's life. He sat still, tingling with delight. And in a single flash of inspiration he knew he had come among his own people at last.

His own grandfather had been a hunter and trapper and frontiersman in a certain vast but little known Oregon forest. His son had moved to the eastern cities, but in Dan's garret there used to be old mementoes and curios from these savage days—a few claws and teeth, and a fragment of an old diary. The call had come to him at

last. Tenderfoot though he was, Dan would go back to those forests, to spend his last six months of life among the wild creatures that made them their home.

CHAPTER II.

THE dinner hour found Dan falling in the public library of Gitch-eapolis, asking the girl who sat behind the desk if he might look at maps of Oregon. He got out the whole question without coughing once, but in spite of it she felt that he ought to be asking for California or Arizona maps, rather than Oregon. People did not usually go to Oregon to rid themselves of his malady.

He remembered that his grandfather had lived in Southern Oregon. He looked along the bottom of his map and discovered a whole empire, ranging from gigantic sage plains to the east to dense forests along the Pacific Ocean. Those sage flats, by the way, contain not only sage hens as thick as poultry in a henyard, and jack rabbits of a particularly long-legged and hardy breed, but also America's one species of antelope. Had Dan known that this was true, had he only been aware that these antelope are without exception the fastest-running creatures upon the face of the earth, he might have been tempted to go there instead of to the land of his fathers. But all he saw on the map was a large brown space marked at exceedingly long intervals with the name of a fort or town. He began to search for Linkville.

Time was when Linkville was one of the principal towns of Oregon. Dan remembered the place because some of the time-yellowed letters his grandfather had sent him had been mailed at a town that bore this name. But he couldn't find Linkville on the map. Later he was to know the reason—that the town, half-way between the sage plains and the mountains, had prospered and changed its name. He remembered that it was located on one of those great fresh-water lakes of Southern Oregon; so, giving up that search, he began to look for lakes. He found them in plenty—vast, unmeasured lakes that seemed to be distributed without reason or sense over the whole southern end of the state. Near the Klamath Lakes, seemingly the most imposing of all the fresh-water lakes that the map revealed, he found a city named Klamath Falls. He put the name down in his notebook.

The map showed a particularly high, far-spreading range of mountains due west of the city. Of course they were the Cascades; the map said so very plainly. Then Dan knew he was getting home. His grandfather had lived and trapped and died in these same wooded hills. Finally he located and recorded the name of the largest city on the main railroad line that was adjacent to the Cascades.

The preparation for his departure took many days. He read many books on flora and fauna. He bought sporting equipment. Knowing the usual ratio between the respective pleasures of anticipation and realization, he did not hurry himself at all. And one midnight he boarded a west-bound train.

There were none that he cared about bidding good-bye. The sudden realization of the fact brought a moment's wonder. He had not realized that he had led such a lonely existence. There were men who were fitted for living in cities, but perhaps he was not one of them. He saw the station lights grow dim as the train pulled out. Soon he could discern just a spark, here and there, from the city's outlying homes. And not long after this, the silence and darkness of the farm lands closed down upon the train.

He sat for a long time in the vestibule of the sleeping-car, thinking in anticipation of this final adventure of his life. It is true that he had not experienced many adventures. He had lived most of them in imagination



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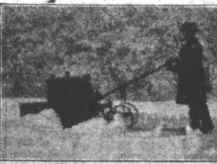
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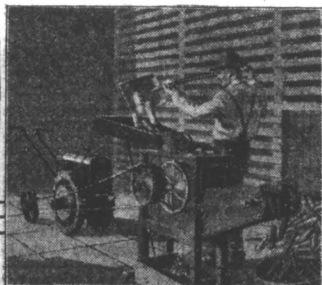
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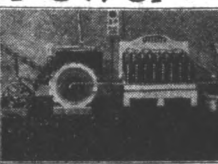
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alone; or else, with tired eyes, he had read of the exploits of other men. He was rather tremulous and exultant as he sank down into his berth.

He saw to it that at least a measure of preparation was made for his coming. That night a long wire went out to the Chamber of Commerce of one of the larger Southern Oregon cities. In it, he told the date of his arrival and asked certain directions. He wanted to know the name of some mountain rancher where possibly he might find board and room for the remainder of the summer and fall. He wanted shooting, and he particularly cared to be near a river where trout might be found. They never came up Gitchepolis River, or leaped for flies in the pond back of the courthouse. The further back from the paths of men, he wrote, the greater would be his pleasure. And he signed the wire with his full name: Dan Failing with a Henry in the middle, and a "III" at the end.

The Chamber of Commerce of the busy little Oregon city was not usually exceptionally interested in stray hunters that wanted a boarding place for the summer. Its business was finding country homes for orchardists in the pleasant river valleys. But it happened that the recipient of the wire was one of the older residents, a frontiersman himself, and it was one of the traditions of the old west that friendships were not soon forgotten. Dan Failing I had been a legend in the old trapping and shooting days when this man was young. So it came about that when Dan's train stopped at Cheyenne he found a telegram waiting him:

"Any relation to Dan Failing of the Umpqua Divide?"

Dan had never heard of the Umpqua Divide, but he couldn't doubt but that the sender of the wire referred to his grandfather. He wired in the affirmative. The head of the Chamber of Commerce received the wire, read it, thrust it into his desk, and in the face of a really important piece of business proceeded to forget all about it. Thus it came about that, except for one thing, Dan Failing would have probably stepped off the train at his destination wholly unheralded and unmet. The one thing that changed his destiny was that at a meeting of a certain widely known fraternal order the next night, the Chamber of Commerce crossed trails with the Frontier in the person of another old resident who had his home in the farthest reaches of the Umpqua Divide. The latter asked the former to come up for a few day's shooting—the deer being fatter and more numerous than any previous season since the days of the grizzlies. For it is true that one of the most magnificent breed of bears that ever walked the face of the earth once left their footprints, as of flour-sacks in the mud, from one end of the region to another.

"Too busy, I'm afraid," the Chamber of Commerce had replied. "But Lennox—that reminds me. Do you remember Old Dan Failing?"

Lennox probed back into the years for a single instant, straightened out all the kinks of his memory in less time than the wind straightens out the folds of a flag, and turned a most interested face. "Remember him!" he exclaimed. "I should say I do." The middle-aged man half-closed his piercing, gray eyes.

"Listen, Steele," he said. "I saw Dan Failing make a bet once. I was just a kid, but I wake up in my sleep to marvel at it. We had a full long glimpse of a black-tail bounding up a long slope. It was just a spike-buck, and Dan Failing said he could take the left-hind spike off with one shot from his old Sharpe's. Three of us bet him—the whole thing in less than two seconds. With the next shot, he'd get the deer.

He won the bet, and now if I ever forget Dan Failing, I want to die."

"You're just the man I'm looking for, then. You're not going out till the day after tomorrow?"

"No."

"On the limited, hitting here tomorrow morning, there's a grandson of Dan Failing. His name is Dan Failing, too, and he wants to go up to your place to hunt. Stay all summer and pay board."

Lennox's eyes said that he couldn't believe it was true. After a while his tongue spoke, too. "Good Lord," he said. "I used to foller Dan around—like old Shag, before he died, followed Snowbird. Of course he can come. But he can't pay board."

It was rather characteristic of the mountain men that the grandson of Dan Failing couldn't possibly pay board. But Steele knew the ways of cities and of men, and he only smiled. "He won't come, then," he explained. "Anyway, have that out with him at the end of his stay. He wants fishing, and you've got that in the North fork. He wants shooting, and if there is a place in the United States with more wild animals around the back door than at your house, I don't know where it is. Moreover, you're a thousand miles back—"

"Only one hundred, if you must know. But Steele—do you suppose he's the man his grandfather was before him—that all the Failings have been since the first days of the Oregon trail? If he is—well, my hat's off to him before he steps off the train."

The mountaineer's bronzed face was earnest and intent in the bright lights of the club. Steele thought he had known this breed. Now he began to have doubts of his own knowledge. "He won't be; don't count on it," he said humbly. "The Failings have done enough to do a little to pay it back, but don't count much on this eastern boy. He's lived in cities; besides, he's a sick man. He said so in his wire. You ought to know it before you take him in."

The bronzed face changed; possibly a shadow of disappointment came into his eyes. "A lunger, eh?" Lennox repeated. "Yes—it's true that if he'd been like the other Failings, he'd never have been that. Why, Steele, you couldn't have given that old man a cough if you'd tied him in the Rogue River overnight. Of course you couldn't count on the line keeping up forever. But I'll take him, for the memory of his grandfather."

"You're not afraid to?"

"Afraid, no! He can't infect those two strapping children of mine. Snowbird weighs one hundred and twenty pounds and is as hard as steel. Never knew a sick day in her life. And you know Bill, of course."

Yes, Steele knew Bill. Bill weighed two hundred pounds, and he would choose the biggest of the steers he drove down to the lower levels in the winter and, twisting its horns, would make it lay over on its side. Besides, both of the men assumed that Dan must be only in the first stages of his malady.

And even as the men talked, the train that bore Dan Failing to the home of his ancestors was entering for the first time the dark forests of pine and fir that make the eternal background of the Northwest. The wind came cool and infinitely fresh into the windows of the sleeping car, and it brought, as camels bring myrrh from the east, strange, pungent odors of balsam and mountain flower and warm earth, cooling after a day of blasting sun. And these smells all came straight home to Dan. He was wholly unable to understand the strange feeling of familiarity that he had with them, a sensation that in his dreams he had known them always, and that he must never go out of the range of them again.

CHAPTER III.

DAN didn't see his host at first. For the first instant he was entirely engrossed by a surging sense of disappointment—a feeling that he had been tricked and had only come to another city after all. He got down on to the gravel of the station yard, and out on the gray street pavement he heard the clang of a trolley car. Trolley cars didn't fit into his picture of the west at all. Many automobiles were parked just beside the station, some of them foreign cars of expensive makes, such as he supposed would be wholly unknown on the frontier. A man in golf clothes brushed his arm.

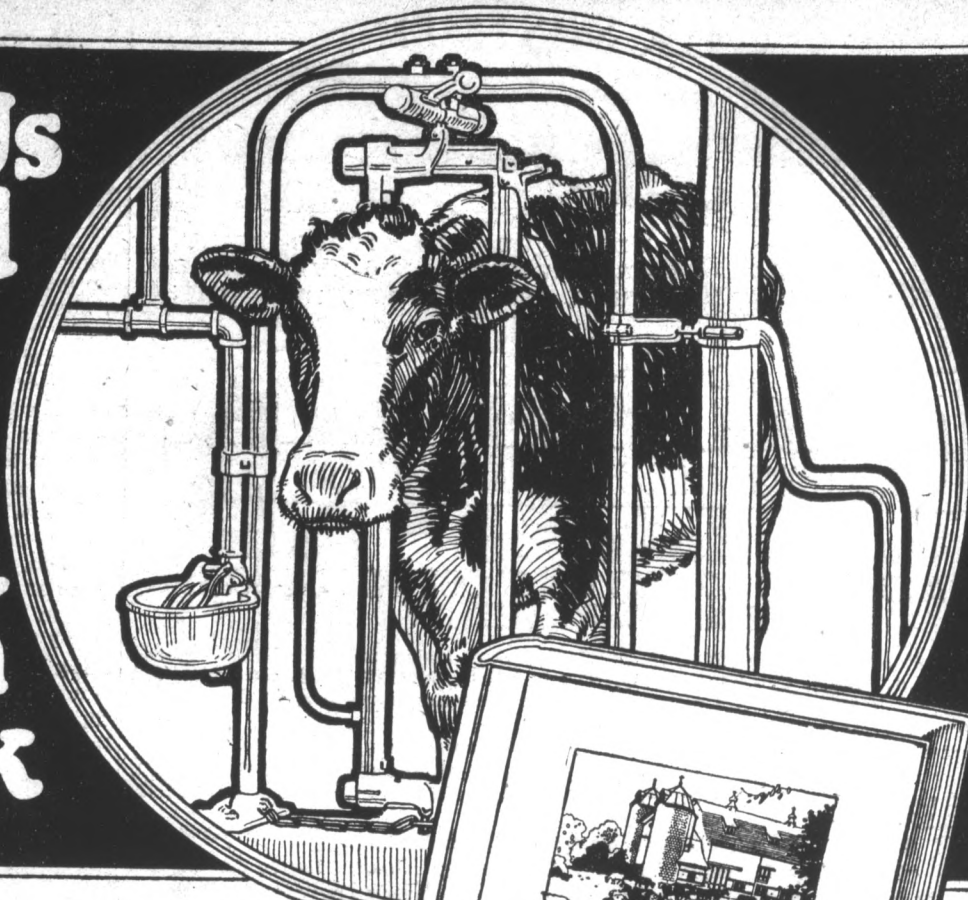
It wasn't a large city; but there was certainly lack of any suggestion of the frontier. But there were a number of things Dan Failing did not know about the west. One of the most important of them was the curious way in which wildernesses and busy cities are sometimes mixed up indiscriminately together, and how one can step out of a modern country club to hear the coyotes wailing on the hills. He really had no right to feel disappointed. He had simply come to the real west—that bewildering land in which Tomorrow and Yesterday sit right next to each other, with no Today between. The cities, often built on the dreams of the future, sometimes are modern to such a point that they give many a sophisticated eastern man a decided shock. But quite often this quality extends to the corporation limits and not a step further. Then, likely as not, they drop sheer off, as over a precipice, into the utter wilderness of the Past.

Dan looked up to the hills, and felt better. He couldn't see them plainly. The faint smoke of a distant forest fire half obscured them. Yet he saw fold on fold of ridges of a rather peculiar blue in color, and even his untrained eyes could see that they were clothed in forests of evergreen. It is a strange thing about evergreen forests that they never, even when one is close to them, appear to be really green. To a distant eye, they range all the way from lavender to pale sort of blue for which no name has ever been invented. Just before dark, when, as all mountaineers know, the sky turns green, the forests are simply curious, dusky shadows. The pines are always dark. Perhaps, after all, they are simply the symbol of the wilderness—eternal, silent, and in a vague way rather dark and sad. No one who really knows the mountains can completely get away from their tone of sadness. Over the heads of the green hills Dan could see a few great peaks; McLaughlin, even and regular as a painted mountain; Wagner, with queer white gashes where the snow still lay in its ravines, and to the southeast the misty range of snow-covered hills that were the Siskeyous. He felt decidedly better. And when he saw old Silas Lennox waiting patiently beside the station, he felt he had come to the right place.

It would be interesting to explain why Dan at once recognized the older man for the breed he was. But unfortunately, there are certain of the many voices that speak within the minds of human beings of which scientists have never been able to take phonographic records. They simply whisper their messages, and their hearer, without knowing why, knows that he has heard the truth. Silas Lennox was not dressed in a way that would distinguish him. It was true that he wore a flannel shirt, riding trousers, and rather heavy, leathern boots. But sportsmen all over the face of the earth wear this costume at sundry times. Mountain men have a peculiar stride by which experienced persons can occasionally recognize them; but Silas Lennox was standing still when Dan got his first glimpse of him. The case resolves itself into a simple matter of the things that could be read in Lennox's face.

(Continued on next page.)

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"And the Door Was Shut"

Our Weekly Sermon—By N. A. McCune

NOT long ago I was in a distant town, where the family had been staying a few weeks. The day before leaving for home, I went out to make some purchases. First, I went to the laundry. On arriving there, I read a sign on the door, "Closed for the day." That was serious, but my next visit was more so. I went to the bank, for it seems absolutely necessary now a days when you get a railroad ticket, to have a bit of money. But the notice on the bank door read, "Closed at noon." And the grocery was next, but that, too, was shut tight. The reason for all this was, that the county fair was on, and every store, bank and place of business was closed for a half day, in honor of the fair. I must say that I like a community that will do a thing like that. If the fair makes sufficient impression on a large town, so that merchants will close up their business, take their families and attend, it must be a pretty good fair. At least it ought to be, with such loyal support. There is hope for a community like that, and we would that there were more of them.

BUT the explanation did not help me any. The fact that the stores and banks were closed in a good cause did not get my laundry, put any money in my pocket, or any groceries in my basket. I was shut out. I was impressed with the meaning of the words: "And the door was shut." And then I fell to thinking. What of the people who are having a much more fatal kind of door shut in their faces, because of their ways of living? Here is a man with two little boys. He is a very busy man, of course. Indeed, he is so busy that his business demands all his time. When he gets home at night he is so weary he cannot romp with his boys, or teach them new games, or tell them stories. After supper he is off again, to lodge, or the chamber of commerce. Presently those boys are in high school, and some way dad feels that they do not have much association with him. They seldom ask his advice, they regard him as a kind of outsider in their youthful affairs, they make their decisions themselves. The door is shut between them and father—and father is the one that shut it.

Opportunity does not knock forever. The door is shut, by and by. The classic instance of opportunity neglected in American history, is that of Webster. When the crisis was on, as to admitting slavery into new states, Webster's voice was the voice men wanted to hear. And when he spoke, it was not against slavery, but sort of miserable compromise, that disappointed men everywhere in the north. If Webster hoped thereby to gain the presidency, he was to be sadly disappointed. The other instance of a statesman in his relation to opportunity was that of Roosevelt and the coal strike. When he was asked to arbitrate, he said, "This will kill me politically, but

I will do it." But it didn't kill him, it made him more admired than ever.

MEN cannot trifle with character. If they are not sincere at this point, all is lost. It is like making clothes. If wool goes into the manufacture, it is a wool suit. If shoddy goes in, it is a shoddy suit. You may lie about it, when you sell the suit, but it will not be long before the real character of the cloth comes out. We may lie to ourselves for a time, but by and by our real character comes out. There is a time in character-making when the door is shut. One of America's great philosopher's speaking of Rip Van Winkle said: (You remember that Rip swore off drinking, and when he took a drink, he always said, "We won't count this one"). "Well, Rip may not count it, and a kind Heaven may not count it, but it is being counted just the same. In the nerve centers, in the habit-forming centers, it is being counted every time." As the years go on, we become more and more "set," in our ways. What we are now, we will be, only more intensely, after a while. The question is, do I intend to be, finally, the sort of person I am now? For that is what it means. In unexpected moments what we really are, is manifest. During the war, the world was thrilled with the way the Belgian Queen toiled among her stricken people. At the same time, the papers reported the Roumanian Queen ordered one hundred and twelve cases of millinery sent from Paris, so that she might "cut a worthy figure at court." Two or three years ago, an American millionairess died, leaving one hundred million dollars to her two children, to spend. The same week there died a negro mammy, aged eighty-nine. She had worked fifty years in the same family. She left the savings of a life time, two thousand three hundred dollars, to a colored school in the south. It is easy to see which of these American women left the larger sum of money. It is also easy to see which had the larger outlook on life.

THE door of life is open. It is never shut by caprice. If at last it is shut in our face, it is because of the inevitable working of cause and effect. And the cause is the human will—ourselves. In Kipling's great story, the "Light that Failed," the artist is going blind. But he is determined to paint one picture before the darkness settles down over him forever. He pays Bessie, his model, five dollars, for each sitting, and she greedily accepts the money, but hates the artist. At last when the finishing stroke has been given, the artist sinks back in his chair and closes his eyes, exhausted. Bessie makes a grimace at him, takes the turpentine brush and rubs it over the picture until it is a huge daub, and sneaks out. The artist's plight is not more pitiable than the plight of those who shut the door between themselves and life's great possibilities.

The Voice of the Pack

(Continued from preceding page).

Dan disbelieved wholly in a book that told how to read characters at sight. Yet at the first glance of the lean, bronzed face his heart gave a curious little bound. A pair of gray eyes met his—two fine black points in a rather hard gray iris. They didn't look past him, or at either side of him, or at his chin or his forehead. They looked right at his own eyes. The skin around the eyes was burned brown by the sun, and the flesh was so lean that the cheek bones showed plainly. The mouth was straight; but yet it was neither savage nor cruel. It was simply determined.

But the strangest part of all was that Dan felt an actual sense of familiarity with this kind of man. To his knowledge, he had never known one before; and it was extremely doubtful if, in his middle-western city, he had or even seen the type. In spite of the fact that he thinks nothing of starting out thirty miles across the snow on snowshoes, the mountain man cannot be called an extensive traveler. He

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plans to go to some great city once in a lifetime and dreams about it of nights, but rather often the Death that is everyone's next-door neighbor in the wilderness comes in and cheats him out of the trip. Few of the breed had ever come to Gitchieopolis. Yet all his life, Dan felt, he had known this straight, gray-eyed mountain breed even better than he knew the boys that went to college with him. At the time he didn't stop to wonder at the feeling. He was too busy looking about. But the time was to come when he would wonder and conclude that it was just another bit of evidence pointing to the same conclusion. And besides this unexplainable feeling of familiarity, he felt a sudden sense of peace, even a quiet sort of exultation, such as a man feels when he gets back into his own home country at last.

Lennox came up with a light, silent tread and extended his hand. "You're Dan Failing's grandson, aren't you?" he asked. "I'm Silas Lennox, who used to know him when he lived on the Divide. You are coming to spend the summer and fall on my ranch."

The immediate result of these words, besides relief, was to set Dan wondering how the old mountaineer had recognized him. He wondered if he had any physical resemblance to his grandfather. But this hope was shot to earth at once. His telegram had explained about his malady, and of course the mountaineer had picked him out simply because he had the mark of the disease on his face. As he shook hands, he used his best to read the mountaineer's expression. It was all too plain: an undeniable look of disappointment.

The truth was that even in spite of all the Chamber of Commerce head had told him, Lennox had still hoped to find some image of the elder Dan Failing in the face and body of his grandson. But at first there seemed to be none at all. The great hunter and trapper who had tamed the wilderness about the region of the Divide—as far as mortal man could tame it—had a skin that was rather the color of old leather. The face of this young man was wholly without tinge of color. Because of the thick glasses, Lennox could not see the young man's eyes; but he didn't think it likely they were at all like the eyes with which the elder Failing saw his way through the wilderness at night. Of course he was tall, just as the famous frontiersman had been, but while the elder weighed one hundred and ninety pounds, bone and muscle, this man did not touch one hundred and thirty. Evidently the years had brought degeneracy to the Failing clan. Lennox was desolated by the thought.

He helped Dan with his bag to a little wiry automobile that waited beside the station. They got into the two front seats.

"You'll be wondering at my taking you in a car—clear to the Divide," Lennox explained. "But we mountain men can't afford to drive horses any more where a car will go. This time of year I can make it fairly easy—only about fifteen miles on low gear. But in the winter—it's either a case of coming down on snowshoes or staying there."

And a moment later they were starting up the long, curved road that led to the Divide.

During the hour that they were crossing over the foothills, on the way to the big timbers, Silas Lennox talked a great deal about the frontiersman that had been Dan's grandfather. A mountain man does not use profuse adjectives. He talks very simply and very straight, and often there are long silences between his sentences. Yet he conveys his ideas with entire clearness.

Dan realized at once that if he could be, in Lennox's eyes, one-fifth of the man his grandfather had been, he

would never have to fear again the look of disappointment with which his host had greeted him at the station. But instead of reaching that high place he had only—death. He was never to be one of this strong breed from which his people sprang. Always they would accept him for the memories that they held of his ancestors, pity him for his weakness, and possibly be kind enough to deplore his death. He never need fear any actual expressions of scorn. Lennox had a natural refinement that forbade it. Dan never knew a more intense desire than that to make good in the eyes of these mountain men. Far back, they had been his own people; and all men know that the upholding of a family's name and honor has been one of the greatest impulses for good conduct and great deeds since the beginning of civilization. But Dan pushed the hope out of his mind at once. He knew what his destiny was in these quiet hills. And it was true that he began to have secret regrets that he had come. But it wasn't that he was disappointed in the land that was opening up before him. It fulfilled every promise. His sole reason for regrets lay in the fact that now the whole mountain world would know of the decay that had come upon his people. Perhaps it would have been better to have left them to their traditions.

He had never dreamed that the fame of his grandfather had spread so far. For the first ten miles, Dan listened to stories—legends of a gold nerve that simply could not be shaken; of a powerful, tireless physique; of moral and physical strength that was seemingly without limit. Then, as the foothills began to give way to the higher ridges and the shadow of the deeper forests fell upon the narrow, brown road, there began to be long gaps in the talk. And soon they rode in utter silence, evidently both of them absorbed in their own thoughts.

Dan did not wonder at it at all. Perhaps he began to faintly understand the reason for the silence and the reticence that is such a predominant trait in the forest men. There is a quality in the big timber that doesn't make for conversation, and no one has ever been completely successful in explaining what it is. Perhaps there is a feeling of insignificance, a sensation that is particularly insistent in the winter snows. No man can feel like talking very loudly when he is the only living creature within endless miles. The trees, towering and old, seem to ignore him as a being too unimportant to notice. And besides, the silence of the forest itself seems to get into the spirit, and the great, quiet spaces that lie between tree and tree simply dry up the springs of conversation. Dan did not feel oppressed at all. He merely seemed to fall into the spirit of the woods, and no words came to his lips. He began to watch the ever-changing vista that the curving road revealed.

(Continued next week.)

Sunshine Hollow Items

By Rube Rubicon

Harrison Snyder bought Bingle Bunk oil stock with his endowment insurance money. He got a dividend right off quick. He said, "That shows what a financier can do with capital and brains if he isn't scared of taking a little chance." But now the Bingle Bunk has busted and Harrison is badly bit. Folks say he should have paid off the mortgage on the farm and bought a new flivver before taking chances on gambling.

Ima Knutt read a florist's ad in the paper which said, "When you want to make a good impression, say it with flowers." When her husband, Chester Knutt, came home he kicked because supper wasn't ready. So Ima grabbed the imitation cut glass wedding vase filled with daisies and soaked Chester good and proper.



Potash arriving at an American factory

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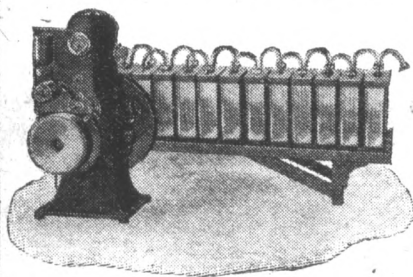
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Woman's Interests

About Criticising



THERE are many nice things about growing, well, not old, but then, along where you begin to get careless about things that once meant life or death, like a wrinkle or so, a few white hairs, and a suit six months behind the prevailing mode. Not the least of the nice things is the fact that life is so much easier after you get over caring about trifles. But that isn't the one I had in mind when I started to philosophize on the compensations of that age known to some flippant persons as "the sere and yellow."

The thing I had in mind was that we get over making the snap judgments of youth. Youthful judgments are almost always based on appearances. Somehow young folks never can seem to get over judging by looks, whether it is a person, a house or a pullet. They have to be taught to look for the points that really count when judging. And when folks are up for consideration they are much more apt to judge by the clothes, finger nails, care of the hair and cut of the coat than by any points of character.

It is only after several sorry mistakes that we learn to look beyond the surface. Some of us have to lend money three times to promising looking new friends before we get our eyes opened. Others learn after they lose the first ten dollars. And it is nice to reach the stage where we pick our friends for their wearing qualities; when we learn not to impute motives. Then we really begin to get the most out of folks.

Long about that time we begin to stop criticising. That's mighty hard for a lot of us women, but there comes a time, though, when we do get over it. My! Don't we just love to do it, at certain periods of life. What a lot of fun it is for a bunch of us to get together and pick the ones who aren't there, to pieces. "Why doesn't someone tell her how awful she looks in that hat?" "My dear, did you ever see anyone so stuck up over a little bit of money?" "No wonder he never stays home nights; she's continually nagging him," etc., etc.

But why go on. We've all been in on them, and we've all been out of them. And the funny thing is, that when our tongues are running fastest, we never think it may be our turn next. In fact, down in our heart of hearts we feel quite sure they wouldn't talk so about us. Why, there isn't anything about us to criticise! They wouldn't? And there isn't? Well, if you could just place a dictagraph in the room next time you were to be among those absent you'd get an awful shock. And the funny thing would be that they criticise you for traits which you count as your virtues.

It's so easy to pick flaws. And often so unjust. There's a certain public entertainer who is extremely popular in her home town. Her friends know her as an unusually brave woman who has worked her way well toward the top in the face of ill-health, and with the added burden of two children to support and educate. She has succeeded in the face of odds which ordinary

women would simply wilt under, and now that the children are self-supporting, she still works on, though every moment of her life is filled with physical pain. She is always smiling, but not always dressed in the very latest mode.

Not long ago as she arose to sing two young girls turned their guns on her.

"I don't see what there is in her to rave about. Who ever told her she could sing?" "If she's doing it for me, she can sit down. I can't hear her anyway. Always grinning and simpering." "Where did she ever get that dress? If I was going to appear in public, believe me I'd have some decent clothes."

Further remarks were given in smothered tones, because of the battery of indignant glances directed towards them by folks who were trying to listen. It was all so unjust. I wanted to tell the girls that the smiles which they objected to were forced to cover actual pain. That the money which might have bought a smarter frock had gone to the anti-tuberculosis society. I wanted to slap them, as a matter of fact. But I didn't do anything, because they were young and thoughtless. I couldn't help a few stabs of conscience, too, as I thought of the many cutting things I'd said about other folks, and no doubt all of it as unjust as this.

A certain sort of criticism has its place. But it's the face to face sort. If you wouldn't say that to your neighbor, don't say it about her. DEBORAH.

Prevention or Cure?—By Margaret A. Bartlett

MRS. BROWN is one of the comparatively few women who takes a cold seriously. She believes that one can never tell where a cold is going to end, nor into what it is going to turn. Even though the cold remain "just a cold," she doesn't believe in having one merely because everyone around her has one. Neither does she believe in letting her children run about among people who have had colds, thus exposing them to the cold germs.

Her children are strong, healthy, robust. They sleep in unheated rooms with windows open wide, winter and summer. They eat only plain, nourishing foods—good bread and butter and milk, fruits and vegetables, well-cooked meat of the non-greasy variety—and thus never have indigestion. They play out of doors in all sorts of weather, and when they are in the house in winter, they are in rooms which are aired frequently and which are never overheated. Neighbors "hug the stove" when they come to call; they wonder why the whole family doesn't "catch its death of cold;" they shiver in a temperature which in summer they would have called "very warm"—and go home and bake in rooms heated to eighty degrees or more, rooms which have not been thoroughly aired since the first freeze of the season. These neighbors and their children have colds from the beginning of the "closed season" till its end, and they marvel at the fortune which keeps the Brown

family coldless for month after month. Some there are who call Mrs. Brown a cold-crank. Although she is a very sweet, gentle woman, one always ready to do good, and one who never speaks ill of neighbor or acquaintance, she has, nevertheless, many who are by no means her friends, in the neighborhood, all on account of the way she feels about colds. On several occasions she has sent children who have come to play, home because they bore unmistakable evidences of bad, contagious colds. True, by so doing, she once side-stepped the whooping-cough, and again kept her children from having scarlet fever. The mothers of the children sent home knew that, and yet they were angry at Mrs. Brown for not letting their children remain to play.

It is hard to have these people antagonistic; it is decidedly unpleasant to know they are using uncomplimentary terms in discussing her with other acquaintances. Sometimes Mrs. Brown feels almost ready to give up in her fight against the cold habit—almost, but never quite. She sees too many pale-faced, washed-out looking children about her, too many little boys and girls suffering from adenoids and enlarged tonsils, which she feels sure had their beginnings in constant colds and their consequent irritation of the throat and nose; she sees too many children with weak eyesight or impaired hearing as a result of some children's disease which had its beginning in "just a cold;" she sees too many running

noses, and hears the outbursts from too many irritated lungs, to make her willing that her children shall acquire the habit by taking cold which these other children have.

Mrs. Brown feels that she has worked out the problem of how to keep her family free from colds. The only difficulty she now encounters is in keeping children who have colds away without incurring the wrath of their parents. Folks around her believe colds to be a necessary evil, and of no great importance, unless they "happen" to turn into pneumonia, or measles, or diphtheria or scarlet fever or some other such serious disease. They let their children run at large, go to school, and church, even when they are sick enough with a cold to be in a warm bed. And all the time these children are spreading cold germs, giving their cold to whoever will take it.

Mrs. Brown does not believe that is right. She talks against the running at large of children with colds, till there are many who, as I said before, call her a cold-crank. But do you not agree with her? If so, see that your children stay in their own yard when they have a cold; see if you can't solve the problem of continuous colds by living the way the Brown family does, and by all means do not be offended if someone who is trying to keep the cold habit at arm's length from her family sends home one of your children who is suffering from a cold. You wouldn't

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Apple Butter.—Brass should never be used as a cooking utensil. An iron kettle or a copper kettle is all right for making apple butter. To make, peel and slice the apples. Use half as much boiled cider as apples, that is, if you have five gallons of apples use two and one-half gallons of cider. Good apple butter is only possible if it is cooked a long time, about six hours, over a slow fire, and stirred constantly. Add the sugar when the cooking is well over, after three and a half hours. A pound of sugar to a gallon of butter is a good allowance. When it is finished add one-half teaspoon each of cloves, cinnamon and allspice for each gallon, and seal at once in hot sterilized jars.

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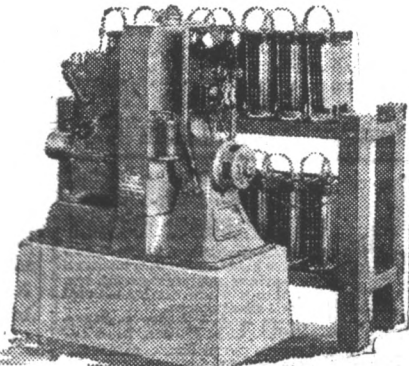
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Our Boys' and Girls' Department

When Boys and Girls Enter the Field

By Uncle Ed

I WENT to a meeting of the farm bureau of my own home county yesterday, and among those who took part in the discussion was a boy who is doing big things with apples. Other folks are having hard work to sell their apples this year, because the trees are loaded, but this boy stood up before the older men and said, "Let me tell you this is a good market for apples. We are bringing in a truck load every day and selling them for \$1.00 to \$1.50 a bushel." Then he went on to tell them that you have to grade your apples up nice and make them look good. This boy's father before him was a fruit man, but he died and then the boy took up the work and is carrying it on very successfully. One thing he thinks, and that is that trees which were injured by the severe winter two years ago cannot be saved. They might as well be blown out with dynamite and new trees set in their places. I think so, too.

A Boy Poultryman.

The father of a boy I know told him if he would take care of the hens and do it right, he should have a share in the eggs. It did not take the boy long to accept that proposition. He had to go to school nearly a mile from home and that means that he must get up pretty early in the morning some seasons of the year; but he kept it up, saving his money until he was able to invest some in land of his own; and today he is one of the most well-to-do farmers of the part of the country in which he lives. Several things follow from a work of that kind. The boy becomes prompt, he gets to be regular in his habits, and he studies the needs of his hens.

Whittled Himself Into a Fortune.

You might not think your jackknife could be a helper in winning success; and yet, one lad I know of used his knife so skillfully that it brought him a good trade and finally a comfortable

living. He began by whittling out pretty things in odd moments. Sometimes he got so interested in his whittling that he could not keep his knife in his pocket while at school, but took it out now and then to shape out some puzzle or other bit of a toy which came into his mind while he was busy over his books. But the time came when somebody was attracted to his little jobs of whittling and gave him a place in his shop, where he soon made good and was given the work of drawing the designs for iron patterns and carving them out with the tools which by this time took the place of his knife to some extent. From this beginning he kept on until he at last became known as an inventor and a practical designer. He did it all himself.

Be Careful, Please.

In all these things we need to keep one thing in mind. The best success is not the success which brings one in

the most money, necessarily. A man may have plenty of money, and still be so selfish that no one wants anything to do with him. Guard against selfishness as you would a plague in the neighborhood. If there is anyone the world loves it is a frank, manly, open-hearted boy or girl. A woman I know says, "I like to give things to those I love. If I did not give, I would not have anything myself." That may seem a queer way of looking at it, and yet, there is more truth than a little in it. Unselfish living does bring back cargoes of blessing of one kind or another. Give freely, and others will give to you. Pinch and save unreasonably and you establish a reputation for being close and mean, and sometimes this will cling to a man as long as he lives. If father or mother take you in as their partner, guard against over-reaching. Be true to the old folks and never hurt them knowingly.



None of the Fine Points Escape a Boys' and Girls' Club Judging Team when Scoring Dairy Animals.

Don't Start With Scrub Stock

By Donald H. Shepard, Another Michigan Boy Who Won a Trip to the International Live Stock Exposition, Chicago

AS a club member it has been brought to my attention, that several of those who are starting in as members of live stock clubs are starting with grade stock:

Why this is so I am not able to say definitely, but there must be a reason. Is it because the new recruit must first make his money with grade stock before being able to start with pure-breds? Why should he entertain this idea? For is it not the pure-bred animal that tops the market the highest number of times, or makes the world's record, and with the same feed as the grade? Then it would be foolish for us to think for one moment that it would be necessary for him to first make his money, when banks come forward, ready and willing to lend the necessary funds. Then he could start in with a pure-bred animal at first and with the same feed and labor, add from one to an unlimited number of dollars more to his profit in the same length of time, above that from the grade.

Is it because he does not see the value of pure-bred stock? If this is the

case no one need fear for him, for in harnesses, and any and everything used on or about the place.

The men connected with the pure bred business as a rule, due chiefly to the nature of their business, are of a disposition and caliber which everyone likes to know, and to the club member who has registered animals there is bound to be a more or less pleasant relation between him and the registered breeder, which will be of inestimable value to the club member.

The regular routine of farm duties grows monotonous and the keeper of scrub stock (not grade) usually has little to pride himself with and show his friends when they come for a visit. This tiresome life becomes a pleasure to the keeper of pure-bred stock, in his love for his animals and eagerness in waiting for matings to mature. Then, again, everyone likes to see uniformity in a herd, stud, or flock. Is this to be found where grades are kept? To be sure they are not. To me it does not seem that the real object of club work is reached, when some new member starts his founda-

tion herd, or flock, with grades. To be sure, he would be better off should he start with grades than none at all, but to him the opportunities are limited.

HOW I RAISED MY POTATOES.

BY WALTER MARCHINO.

MY piece of ground is black, sandy loam. It had hay on it last year. I spread four loads of manure on it during the last part of March; then I plowed seven inches deep, rolled it and went over it with the harrow once each way; then I waited two weeks because it was too early to plant.

I sorted my seed and dipped them for scab in thirty gallons of water and one pint of formaline, leaving for two hours. I cut the seed, leaving two eyes on each piece. I harrowed the field over twice and it was in good condition; then I marked it with a one-horse marker, marking two rows at one time, each three feet apart. I dropped the potatoes eighteen inches apart and covered them with a one-horse cultivator and then went over them with a roller; they came up nice. There were about four or five hills in a row missing, which I planted by hand. Then it was one hundred per cent of a stand. I cultivated them five times. The first time as soon as they were up; the other times shallow hilling them up. The last time to prevent sunburn.

The potato beetle was quite thick on account of being planted early. I sprayed two times with Bordeaux mixture and arsenate of lead. About the middle of August the wilt commenced, about one hill every five rods. The leaf-hopper was quite bad the last of August, but the potatoes were so near ripe I didn't think they would do much damage, so I didn't spray with tobacco. They were ripe about September 20. I dug them October 3, with a two-horse potato digger, digging one row and putting crates in the plowed row, about twelve feet apart, so it was easy to pick them up; then I dug the row, one each side of the row of crates, making three rows of potatoes to a row of crates; then onto the new three rows and so on till all were dug. Then I put them in the cellar. I got eighty-one bushels of good, marketable potatoes and eleven bushels of culls. Expenses were \$27.65 and I received \$155.70 from the half-acre. The net profit was \$128.35. The cost of raising a bushel of potatoes is thirty cents.

I exhibited my potatoes at the Davison Fair and sold some for \$1.80.

MICHIGAN'S 1920 CROP REPORT.

THE joint crop report for November 1, issued by Coleman C. Vaughan, secretary of state, and Verne H. Church, agricultural statistician, United States Bureau of Crop Estimates, indicates an increase over earlier estimates in the volume of the corn crop, and a slight decrease in the potato, clover seed and buckwheat crops. The month of October was exceptionally favorable for harvesting the late fall crops, and the greater part of the work is completed. There is considerable corn yet to be husked and some fall plowing and threshing to be done. Recent rains are aiding the growth of fall-sown wheat and rye, pastures and seeding.

The estimated yield of corn is forty bushels per acre. This is one of the largest yields on record and one bushel more than last year. The total crop for the state is 66,000,000 bushels, and for the United States 3,199,126,000 bushels. Thirty-four per cent of the state's acreage went into silos, the av-

erage yield being 7.8 tons of silage per acre. The quality is unusually good, being ninety-two per cent, or fifteen per cent better than the average of the last ten years. Eighty-five per cent of the crop is estimated to be of merchantable quality. The amount of last year's crop remaining on farms is 3.5 per cent.

The estimated amount of wheat marketed at mills and elevators in the state during October is 1,270,000 bushels, and the total amount since August 1, 4,999,000 bushels.

The yield of potatoes is found to be one hundred and seven bushels per acre. This is the largest yield per acre since 1914 but, owing to a considerably less acreage, the production is about 10,000,000 bushels less than in that year. The yield is variable. Some counties in the western half of the state reported as low as eighty bushels per acre, while some eastern and upper peninsula counties averaged as high as one hundred and fifty and one hundred and seventy-five bushels per acre. The quality is generally good, the average being ninety-four per cent against a ten-year average of eighty-seven per cent. The United States crop is placed at 421,252,000 bushels, the largest crop on record with one exception.

The yield of buckwheat is sixteen bushels per acre, making a total crop of 672,000 bushels or slightly more than was produced in 1919. The quality is ninety-two per cent, four per cent above the ten-year average.

The clover seed crop amounts to 122,000 bushels, a reduction from last month's estimate of 20,000 bushels. Later threshing returns show a marked falling off in the average yield. The quality is very good. There is considerable seed yet to be threshed.

Michigan's production of pears, grapes and apples proved to be exceedingly large, the percentages being one hundred, one hundred and four and one hundred and six per cent respectively. The quality was generally good except that apples were severely attacked by scab in some northwestern counties, and by sideworms in some of the southwestern sections. The quality of grapes has probably never been excelled, and the prices obtained were very satisfactory. On the other hand, the prices offered for apples and pears were very low in comparison to the cost of picking, packing and marketing, and considerable quantities were allowed to go to waste in some orchards.

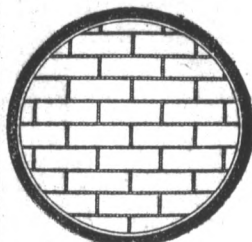
The harvesting of sugar beets is nearly completed. The lifting and hauling of the beets was done with unusual speed because of the favorable weather conditions that prevailed during the time. The condition of the crop at time of harvest was ninety-three per cent as compared with a ten-year average of eighty-six per cent.

A special inquiry relative to the quality of the bean crop shows the average to be ninety-six per cent, and that the average pick is 3.5 per cent, which is equivalent to 2.1 pounds per bushel.

The amount of grain and seed threshed as reported by threshermen up to and including October 23, 1920, is as follows:

Crop.	Bushels.	Aver. Yield.
Winter wheat	11,950,540	15.5
Spring wheat	325,830	10.5
Rye	7,403,606	14.6
Oats	42,422,140	39.6
Spelt	151,364	28.2
Barley	3,441,049	25.2
Buckwheat	157,452	14.6
Peas	268,142	16.7
Timothy seed	3,578	3.3
Clover seed	81,873	1.6
Beans	1,077,119	13.0

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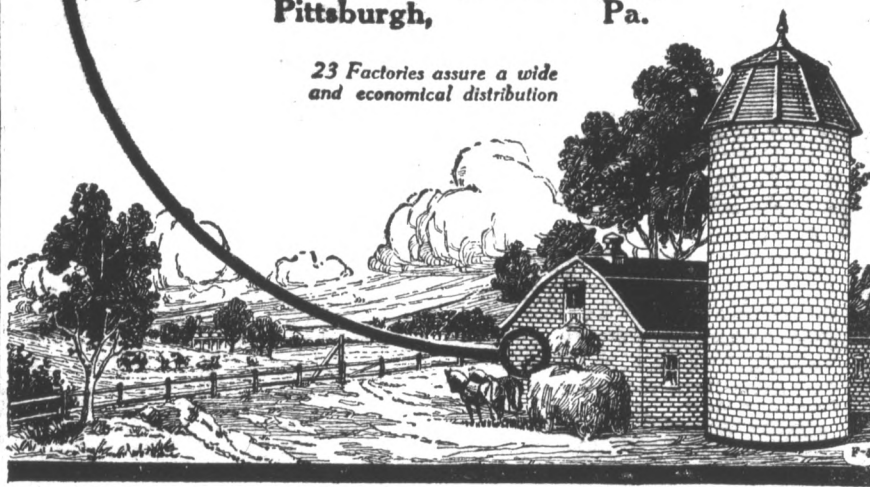
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BEGINNING IN THIS ISSUE ON PAGE 668

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Bourbon Red Turkeys Evan's Strain. Large, well marked birds. Write for prices. **CHAS. A. BEATTY,** Milford, Mich.

Essentials for Winter Eggs

By R. G. Kirby

THE problem of obtaining winter eggs centers in the making of conditions as near like spring as possible in the winter laying-house. The floor of the poultry house is the winter range of the hen and there she must find conditions conducive to health, and food for egg production, or she cannot lay.

First, early-hatched pullets are necessary for the best results. They are the best machine for turning out winter eggs. Then the ration must contain animal food. This can be supplied by using beef scrap in the dry mash or by feeding plenty of sour milk. Green food is a tonic for the birds and needed to keep them in the right condition for laying. It can be supplied in the form of mangels, cut clover, cabbages or sprouted oats. At the present price of oats, the mangels are the most economical as a source of green feed. If cabbages and mangels are used the cabbages can be fed first as the mangels keep the best.

Charcoal, oyster shells and grit must be supplied in hoppers to help out in producing these spring conditions which are needed. The charcoal is good for the digestive system when the birds are eating heavily to obtain the ingredients necessary to make eggs. The oyster shells furnish lime to make strong egg shells. The grit is needed by the hen to grind her food. There are many farm flocks that suffer during the winter for a lack of grit.

A clean dry litter is important. There the farmer throws the scratch grain to make the birds exercise. The scratching for grain helps to keep them warm on cold winter days and tones up their physical being in the same manner that they are stimulated when scratching on the grassy range during the spring and summer. Straw makes a good litter and it should be dry and deep. A sunny poultry house gives the litter a chance to keep dry. A dark and damp poultry house means that the litter will be damp and the birds will not enjoy working for grain in such a mixture.

Lice and mites can thrive even in the winter and must be controlled if winter eggs are expected. Colds must be prevented by keeping the birds vigorous and isolating any individuals that show signs of cold by the eyes becoming swollen.

The water supply should be watched in the winter. Galvanized pails placed on wooden stands make a clean source of supply as they are not scratched full of litter. Empty them every night so they will not freeze over and spring a leak. Change the water frequently enough to keep the pails free from ice. Some poultrymen give warm water to the birds in the winter while others use water as it comes from the well. Both seem to have success if the water is clean and changed often enough so that the birds always have a fresh supply before them.

The best grain ration we have used in the winter consists of equal parts of corn and wheat. When this is fed in a deep litter the birds will swarm after it and it is good for egg production to keep them scratching for a couple of hours every morning and to send them to bed each night with full crops. Oats are a good egg feed but the birds do not like oats as well as wheat. They will eat more oats if they are boiled or soaked over night and placed in the poultry house in galvanized pails.

The amount of feed to give poultry in the winter is only limited by the amount they will eat. There is nothing gained by half-feeding the flock as that places them in a condition where they are unable to pay for what they do eat. If they can not be made profitable on full rations they cannot be made to pay at all. The dry mash in a hopper insures a plentiful supply of feed containing the elements of egg production. This is supplemented each day with the grain ration fed in the litter and any table scraps which may be available. Then the birds are sure of enough to eat of a balanced ration and this means that they will not overeat of any one food and they will keep in healthful condition.

If possible, separate the pullets from the hens in the laying-house. It is essential for the best results as the ration for pullets that are forced for eggs is too fattening for old hens that are to take a rest so they will be in the right condition to lay hatching eggs in the spring. In some large laying-houses a partition of poultry wire might be used to divide the pullets from the hens. Vigorous pullets can stand heavy feeding and pay for it and they should be given every chance to turn out winter eggs so that their winter feed bill will not be a loss to be charged against the spring and summer profits.

LIVERS ENLARGED.

Some of my White Leghorns have died. I found by dissecting one that the liver was ten times normal size, and the heart was also somewhat enlarged. The comb changes from bright red to a dull color, and hen droops a few days, then dies suddenly. Kindly give cause and cure.

Mecosta Co.

E. D. T.

The hens are suffering from diseased livers because too much fat has been stored up in the livers to permit them to function properly. This is caused in most cases by feeding too heavily on carbohydrates without giving the birds enough exercise. Hens that are fed too much corn on the ground are able to pick up a good living without work and are more apt to have liver trouble than birds that have to scratch in deep litter for a winter ration consisting of scratch feed containing half wheat and half corn. And a dry mash containing the elements for egg production can be given in a hopper. Then the hens will have enough to eat but there will be less danger of liver trouble.

Occasionally a hen managed under ideal conditions might break down under heavy feeding for egg production. Poultrymen figure on a certain per cent of loss when forcing a large flock of birds for eggs. Treatment for liver trouble is not satisfactory. It must be controlled by preventive measures. Hens that become overfat can be culled out. Then breed from the vigorous alert birds that scratch and sing and lay. That will help to eliminate the drones from the flock that are the most apt to have liver troubles.—K.

THE CAUSE OF TUBERCULOSIS.

THE cause of tuberculosis in poultry is an extremely small bacterium or germ, the tubercle bacillus, which closely resembles the germ responsible for tuberculosis in man, cattle, and hogs. This organism is so small that it can be seen only with the aid of a high power microscope.

The germs cannot grow outside the body, but once they become implanted in the body, they multiply rapidly, causing the formation of small nodules or tubercles; hence the name, tuberculosis.



Poland China Sales

IN spite of the cold, rainy weather two hundred breeders and farmers attended Wesley Hile's Poland China sale, Tuesday, October 26. The fifteen top animals listed in the report sold for \$1,488, an average of \$99.20. A number of the animals sold for considerably less than they were worth, but the sale, as a whole, was far from discouraging.

The cold, disagreeable weather kept down the attendance at the Boone-Hill sale Wednesday but the crowd kept in good humor and the good animals changed hands at fair prices. A few young things that ought not to have been presented kept down the average. The tops of the sale made an average of better than \$70. This was a good average considering the bad weather and sales conditions. Being a dispersion sale Mr. Boone entered a number of young animals in order to make a general clean-up. Otherwise a better average would have resulted.

The cold weather continued, but the rain let up during the Leonard-Fisher sale at St. Louis on Thursday. The sixteen animals listed in the report sold for \$1,335, or an average of about \$84. The entire offering was made up of young stuff. The young gilts were presented in fine condition and the average for the entire sale was \$58.

At the Charles Wetzel & Sons' sale at Ithaca on Friday the entire offering made a low average, but this firm had made no plans for a big sale this year. They are new breeders and this year's sale, together with their many liberal purchases of top stuff at other sales is going to put their herd in a strong position for next year.

Weather conditions were more favorable Saturday and W. Brewbaker & Sons, of Elsie, presented a splendid offering, including several mature sows and two outstanding boar prospects. The eighteen head listed in the report sold for \$1,820, an average of \$101.

While the prices as a whole were somewhat discouraging to a number of the breeders, yet the tendency of all farm prices to seek lower levels and the general feeling of uncertainty at the present time makes the prices look all the more attractive to farmers who have grade hogs, or who are selling their grain crops. Several new breeders are going into the Poland China business next year, and they are buying the right kind of animals to go on and make good in their herds. The reports of three sales are as follows:

Wesley Hile, Ionia, Michigan.

No. 1, sow, to W. I. Wood, Birmingham, Mich., \$147.50.
No. 2, sow, to F. H. Sanders, Eaton Rapids, Mich., \$175.
No. 3, sow, to George Aldrich, Ionia, Mich., \$95.
No. 4, sow, to F. H. Sanders, Eaton Rapids, Mich., \$57.50.
No. 6, sow, to Gillies, Post & Haire, West Branch, Mich., \$77.50.
No. 14, sow, to George Brown, Dixon, Ill., \$200.
No. 23, sow, to George Aldrich, Ionia, Mich., \$90.
No. 26, boar, to Amos Welch & Son, Ionia, Mich., \$80.
No. 27, boar, to F. H. Sanders, Eaton Rapids, Mich., \$200.
No. 28, boar, to C. S. Langdon, Hubbardson, Mich., \$75.
No. 29, sow, to W. J. Clarke, Eaton Rapids, Mich., \$57.50.
No. 30, sow, to W. J. Clarke, Eaton Rapids, Mich., \$57.50.
No. 31, sow, to Glenn Stokes, Greenville, Mich., \$57.50.
No. 32, sow, to John McKendry, Ionia, Mich., \$60.
No. 41, sow, to Charles Swartz, Lake View, Mich., \$60.

Leonard & Fisher, St. Louis, Michigan.
No. 1, sow, to A. A. Feldkamp, Manchester, Mich., \$200.
No. 2, sow, to A. A. Feldkamp, Manchester, Mich., \$125.
No. 3, sow, to Dorus Hover, Akron, Mich., \$130.
No. 4, sow, to A. A. Feldkamp, Manchester, Mich., \$80.
No. 5, sow, to A. D. Gregory, Ionia, Mich., \$75.

No. 6, sow, P. P. Pope, Mt. Pleasant, Mich., \$65.
No. 7, sow, W. J. Clarke, Eaton Rapids, Mich., \$65.
No. 8, sow, A. A. Feldkamp, Manchester, Mich., \$55.
No. 9, sow, S. M. Leonard, St. Louis, Mich., \$55.
No. 11, sow, W. B. Ramsdell, Hanover, Mich., \$60.
No. 12, sow, to A. W. Humphery, Ithaca, Mich., \$50.
No. 13, sow, to Young Bros., Niles, Mich., \$50.
No. 18, sow, to Charles Wetzel & Sons, Ithaca, Mich., \$130.
No. 21, sow, to A. A. Feldkamp, Manchester, Mich., \$57.50.
No. 26, sow, to P. P. Pope, Mt. Pleasant, Mich., \$57.50.
No. 45, sow, to P. P. Pope, Mt. Pleasant, Mich., \$80.

W. Brewbaker & Sons, Elsie, Michigan.

No. 1, sow, to E. F. Goodfellow, Ovid, Mich., \$95.
No. 2, sow, to Clyde Fisher, St. Louis, Mich., \$100.
No. 3, sow, to W. H. Lind, Alto, Mich., \$197.50.
No. 4, sow, Bert Wright, Perrinton, Mich., \$85.
No. 5, sow, to P. P. Pope, Mt. Pleasant, Mich., \$100.
No. 6, sow, to I. M. Kyle, Sabula, Iowa, \$95.
No. 7, sow, to I. M. Kyle, Sabula, Iowa, \$85.
No. 8, sow, to A. D. Gregory, Ionia, Mich., \$80.
No. 9, sow, Charles Wetzel & Sons, Ithaca, Mich., \$260.
No. 10, sow, to Wesley Hile, Ionia, Mich., \$100.
No. 12, boar, to Archie Ward, Breckenridge, Mich., \$115.
No. 14, boar, to Armstrong Bros., Fowlerville, Mich., \$52.50.
No. 15, sow, to Wesley Hile, Ionia, Mich., \$202.50.
No. 21, sow, to Edgar Burke, St. Johns, Mich., \$52.50.
No. 18, sow, to John Burke, Elsie, Mich., \$50.
No. 11, sow, to P. P. Pope, Mt. Pleasant, Mich., \$50.
No. 22, boar, to George Loomis, St. Johns, Mich., \$50.
No. 23, sow, to A. D. Squires, Carland, Mich., \$50.

DEHORNING BULL CALF.

Would you advise dehorning a Jersey bull calf five months of age? If so, what time?

Gladwin Co.

F. J. F.

I would not advise dehorning calves at this age. Undoubtedly the best way would have been to have dehorned him by using caustic potash when he was one or two weeks old, by rubbing this over the base of the horn, but now I would leave him until the horns were fairly well developed, then you will be sure they will not grow out again; and probably cutting his horns off after he is matured will have a wonderful effect upon preventing a bull from getting vicious. My plan is to leave the horns on until a bull does show some signs of being vicious, then if you dehorn him he is pretty well subdued and will be manageable probably for the balance of his life; but if you cut the horns off now it will not have that effect.

I never put a ring in a bull's nose until he begins to act a little vicious, then the ring steadies him up a little, and later on if he shows too much spirit then I cut off his horns. We never have any trouble in managing bulls this way and never have had anybody injured in handling bulls. C. C. L.

SMALL STOCKS OF HOG PRODUCTS REMAIN.

ALTHOUGH packers report that a healthy and steady demand for pork fats and some meat products continues from foreign countries, prices have declined but have shown a tendency to become steady upon the lower level. Packers are reported as hedging in the provision pit, which would indicate a falling off in export orders in spite of their statements to the contrary. The report of stocks at Chicago showed a decrease of 46,000,000 pounds of lard, or 73 per cent below the October 1 supply and a 33 per cent decrease in cut meats for the month.

The country seems to be experiencing a healthy and general readjustment of prices. Prices in many lines seem definitely to be coming down—and the purchasing power of the dollar to be going up.

However, milk prices for October held closely to the September price, which was at a high level. The October milk price was about 30% higher than the May price. Our price on BUFFALO CORN GLUTEN FEED declined some 35% since May.

In this general decline of prices, the feeder of BUFFALO CORN GLUTEN FEED has had a distinct advantage in the shape of our guarantees against decline in our price.

With these guarantees on BUFFALO CORN GLUTEN FEED, the dealer has been able to rewrite his price from time to time, and keep current with the declines; and the dairy farmer, who has bought this feed with the same protection, is able to mark down his costs in the same way.

A grain ration with a liberal proportion of BUFFALO CORN GLUTEN FEED can be made up—on account of these guarantees—at a much lower cost than with other concentrated feeds.

FEED UP!

To reduce your cost of production

Corn Products Refining Co.
New York Manufacturers of Chicago
BUFFALO
CORN
GLUTEN FEED



Write to

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

BREEDERS' DIRECTORY

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

Wildwood Farms Angus

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

Our herd is under State and Federal Supervision.

WILDWOOD FARMS ORION, MICHIGAN

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

WOODCOTE ANGUS

Imported Herd Bulls
ELCHO OF HARVESTOUN (45547)
by Jason of Ballinalloch (38048)
EDGARDO OF DALMENY (45501)
by Escort of Harvestoun (38006)
Woodcote Stock Farm, Ionia, Mich.

For Sale Having decided to sell part of my herd of pure bred Aberdeen Angus cattle, consisting of males and females of different ages.
ANDREW P. EITEL, Vermontville, Mich.

Four Guernsey Bulls out of Adv. Reg. dams. One month old to serviceable age. Also two heifer calves three months old. All by prize winning May Rose sire. Special prices if two or more are taken, write or visit.
ST. AUSTELL FARM, PAUL LOVE, Jackson, Mich.

Guernsey Bull Rusto of Smallidge Farm, born Feb. 2nd, 1920. Sire Bonnie of the Ridge, who's dam Trixie of the Ridge holds first place in class EE in Michigan. Granddam Abbie of Riverside is champion of Mich. Dam May Kings Esalia of Eau Claire an A. R. cow.
E. J. SMALLIDGE, Eau Claire, Mich.

GUERNSEYS—Federal Inspected. Headed by only 1 son of Carrie of Hillhurst, champion of A. A. class, 5 bulls under 10 mos. 1 dandy whose dam in class D has given over 50 lbs. milk. No females to spare.
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GUERNSEY BULL CALVES whose sire's dam made 19,460.20 milk, 909.05 fat. Their mother's sire's dam made 15,109.10 milk, 778.80 fat.
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a 6 months old bull (100%) satisfaction for \$100. A nice heifer calf \$150.
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For Sale 2 Registered Guernsey cows & registered bulls ready for service, call or write.
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Facts in BLACK & WHITE

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will increase the production of your grade herd by 100 per cent. It can be done in two generations, and we can supply the bulls.

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A. FLEMING, Lake, Mich.

NOTICE

The Winwood Herd

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

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OUR HERD SIRE Model King Segis Glista

By a 30 lb. son of Lakeside King Segis Alban De Kol. His dam Glista Fenelle 32.37 lbs. Her dam Glista Ernestine 35.96 lbs. His three nearest dams average over 33 lbs and his forty-six nearest tested relatives average over 30 lbs. of butter in seven days. Write for prices on his sons.

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

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Bulls all sold but are now booking orders for our expected fall crop of

Bull Calves
sired by my new herd bull, a grandson of
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My sire's two nearest dams average over 35 lbs. butter and 800 pounds milk in seven days.

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

Segis Pietertje Gilt Edge Ormsby

Born Aug. 9, 1919. Every dam in the first 4 generations has a good 7 day record and each of these, excepting two in the fourth generation has a good yearly record. Three WORLD records. If you want individuality, and breeding, backed by both long and short time records, don't look farther. And he is some bull too. Herd under Government Supervision.

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"Top Notch" Holsteins

Buy a "milk" Bull of Quality from the Breeders of the world's only cow to produce 800 lbs. milk in 7 days, having an 800 lb. daughter.
Our advertised bulls are selling fast.
Here are two good ones:

No. 1. King Vale Colantha De Kol, No. 307701
Born Oct. 11, 1919.

A "TOP NOTCH" individual, backed by fifteen dams who average 30.73 lbs. butter in 7 days.
Price \$175.00 f. o. b. Howell

No. 2. Cornucopia Wayne Segis King, No. 318409
Born Dec. 6, 1919.

His 4 nearest dams average 35.38 lbs. butter in 7 days. Dams, a 2 1/2 lb. cow with a daughter who produced 38.74 lbs. milk and 154 lbs. butter in two consecutive years. Price \$125.00 f. o. b. Howell.

No. 1 Bull about one year old, white.
No. 2 Bull about half year old, red.

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Our herds under U. S. Supervision.

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(In Government Accredited list) offers young registered sons from 134 lb. King Korndyke Sadie Vale bull for \$150 to \$250.

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

Reg. Holsteins For Sale. A few choice cows and heifers. 25-35 St. Johns. **J. R. HICKS, St. Johns, Mich.**

Federal Accredited Herd Bull For Sale
Old enough for service. Dams records, 7 da. milk 467.80, butter 20.55, 305 da. milk 16.15, 3, butter 648. She has 2 A.R. O. daughters. His sire a 24 lb. grandson of Colantha Johanna Lad. Price \$200. Write for particulars. **Vernon Clough, Parma, Mich.**

The Frankenmuth Spotted Poland China Breeders Association
of Frankenmuth Twp., Saginaw County, Mich., will sell at

PUBLIC AUCTION ON DEC. 3rd, 1920

on Alfred Grueber's Farm, two miles east and two miles north of Frankenmuth Junction at 12 o'clock noon. 40 head of Registered Spotted Poland China Hogs, tried and bred, open and bred gilts and a few boars. The tops of 3 herds will be sold at this sale. Catalog will be sent free upon request.

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Choice individuals; shipped to you c. o. d. express paid and guaranteed right or your money refunded. All stock registered in buyer's name.

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ALL THREE are working to a common purpose—to increase the production of Michigan Dairy herds. We believe all three should work together.

We feel sure that no Michigan bull has ever been better equipped for the work.

We have it on high authority that there are none better individually.

His three nearest dams each averaged to produce 100 lbs. butter and 2100 lbs. milk per month for a full lactation period with an average of 3.8% fat.

His dam is one of Michigan's greatest families—three full sisters that have produced over 30 lbs. butter in seven days, two of them producing over 700 lbs. milk, and two of them producing more than 1000 lbs. butter and 21000 lbs. milk in ten months.

His sire is the direct descendant of three generations of 30 lb. cows and two generations of 1200 lb. yearly record cows.

His first three sisters to enter yearly test will each produce more than 800 lbs. butter and 17000 lbs. milk as heifers.

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A son of this great young sire suited to head any herd in Michigan, grade or purebred, can be secured in Genesee County and we want them all to stay in Michigan.

Write us about your herd, tell us what you need and what you feel you can afford to pay and let us help you find just what you want in Genesee County, the center of Michigan's long distance dairy cattle.

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Offers the best selection of young bulls from 8 to 12 months we ever raised; out of dams up to 29.76 for aged cows and over 25 lbs. for 2 yr. olds. Yearly records up to 24000 lbs. milk and 1000 lbs. butter. Sired by our Senior Herd Sire, Maplecrest Application by our Junior Herd Sire, Maplecrest Sir Rag Apple, our Junior Herd Sire, whose dam is a 30 lb. 10 yr. old maternal sister of Dutchland Colantha Denver who made 36 lbs. in 7 days and 135 lbs. butter and 2543 lbs. milk in 1 year. Several carry the blood of both these sires.

They are extra well grown, straight and right. One of these at the head of your herd is bound to increase production.

Send for pedigrees and prices.

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Registered Holstein Bull Born Dec. 19, 1919. Sire a son of King Ona. His dam is a 21 lb. daughter of a 21 lb. cow. Price \$90 delivered your station. Write for pedigree.
EARL PETERS, N. Bradley, Mich.

\$75 gets 6 weeks old gdson of Maple Crest Korn Heng and Flint Heng, Salina 27.09 butter 561.2 milk in 7 days. Call's dam is my best untested cow. Terms, M. L. McLAULIN, Redford, Mich.

Reg. Holstein-Friesian Bulls ready for service and priced to sell. Light in color and richly bred.
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Your Choice of 20 high grade young Holstein cows due this fall and winter.
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Herefords Double Disturber bull at head of herd. Offer 52-yr olds, bred, 9 yearling and 5 heifer calves. Fairfax breeding. Bulls any age.
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Hereford bull for sale Woodland 2nd., 495678. Descended from Dale and other first class stock. A good sized bull, a sure breeder and priced to sell. J. C. Thomas, Silver Birch Ranch, West Branch, Mich.

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

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

JERSEY BULLS Ready for service. Lad, Majesty breeding. Meadowland Farm, Waterman & Waterman, Packard Rd., Ann Arbor, Mich.

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

Lillie Farmstead Jerseys 2 R. of M. bull calves, one year old this fall.
O. C. LILLIE, Coopersville, Mich.

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

Jersey bulls for sale: From Marguerite's Premier, a grandson of Pegasus 9th and R. of M. dams. **SMITH & PARKER, R. 4, Howell, Mich.**

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Are Officially Supervised by Michigan Agricultural College. The two year old Daisy Duchons Maid 2.336 lbs. milk, 378 lbs. fat, 4.55 percent average. Rose Mist 8.709 lbs. milk 425 lbs. fat, 4.75 percent average. Fancy Ring 7726 lbs. milk 267 lbs. fat 8 mo's. Peri Duchess 27th 6964 lbs. milk 262 lbs. fat percent 4.21, 2'd calf.

We have other good cows under state supervision, our records are made under every day farm pasture conditions twice a day milking only. We can price you bulls from 2 months to two year olds. Sired by the Great Bulls Lord Burrington 5th. and Green Leaf Master Imp. Your success is our success. Come and see us, or write your wants to

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

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Kirklevington Lad, by Imp. Hartford Welfare. In service bulls, for sale.

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Imp. Lorne, Imp. Newton champion and Sterling Supreme in Service. We offer for quick sale: Five Scotch Bulls, best of breeding. Three whites at \$1000 each. One roan at \$500, one red at \$400. No females for sale. Public sale Chicago Oct. 28th.

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Breeders of
American Polled Shorthorn Cattle

For Sale two splendid bulls now ready for service. And two younger ones that will be ready for light service Jan. 15th. We also are offering at this time a few bred cows and heifers. Herd headed by Victor Sultan and Sultan's Gift. Prices very reasonable, write your wants. **Geo. E. Burdick, Mgr., Goldwater, Mich.**

Maplewood Shorthorns

Two bull calves of good milking dams and sired by our herd bull, Maplewood Jeweller, both calves are splendid individuals. **Harter & Easton, Jenison, Mich.**

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

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

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

Milking Shorthorn 3 mos. heifer calf \$125 bred heifers and serviceable bulls at farmers' prices. Central Mich. Shorthorn Asso. Oscar Skinner Sec. Gowen, Mich.

Red Polled cattle for sale bulls from 4 to 18 mos. also cows with calves by side and heifers.
G. A. CALHOON, Bronson, Mich.

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

Reg. Red Polled Bull calves for sale, from 3 mos. to 1 year old, sired by Famous Charming grand son of Charming 19th International Grand Champion.
WESTBROOK BROS., Ionia, Mich.

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Quality Berkshires

2 BOARS, 4 SOWS. May farrow. Littermates, sired by Prince of Rudgate (236191) and out of Hilltop Model 2nd. (290816)

All of these pigs are good, growthy individuals that should be in the hands of some Berkshire breeder or farmer where they will have a chance to make good. Write or visit farm.

WILLIAM ROBERTS

Lone Pine Road, Birmingham, Mich.

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

Fine Registered Berkshires pigs for sale, prolific, large litters.
O. H. WHITNEY, Merrill, Mich.

Brookwater Duroc Jerseys

BOARS—Ready for Service

Big type, large bone and rugged with plenty of quality. This is your chance to buy high class individuals at reasonable prices.

Open Gilts
of choice breeding and right type. Panama Special, The Principal 4th, Orion Cherry King, and Great Orion families. Now is the time to buy before the demand takes all of the good ones.

Write us for Prices and Pedigrees
Mail orders a Specialty. Satisfaction guaranteed.

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ANN ARBOR, MICHIGAN

H. W. Mumford, Owner J. B. Andrews, Mgr.

DUROC JERSEY SWINE

for sale, 2 yr. old herd boars, yearling boars and boar pigs, also bred sows and gilts. Write for pedigrees and prices. Come and see them.

THOS. UNDERHILL & SON, Salem, Mich.



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

Phillips Bros., Riga, Mich.

For Sale Duroc Jerseys of the big heavy boned type.
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Duroc sows and gilts bred to Walts King 29499 who has sired more 1st and 2nd prize pigs at the State Fair in last 2 years than any other Duroc boar. Everyone will be a money maker for the buyer. Cat. and price list.

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DUROCS spring boars. A few gilts bred for Sept. farrow at bargain prices.
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Duroc Boars ready for service. Sired by Jack's Cherry Orion King number 169259 son of the \$10,000.00 Champion Jacks Orion King 2nd fall large type and heavy bone out of good sows.

THE JENNINGS FARMS, Bailey, Mich.

Duroc Jerseys Boars Boars of the large heavy boned type at reasonable prices. Write or better come and see
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Michigan Farm Durocs. Service boars and open gilts for sale at \$40 and \$50. These are real hogs. Satisfaction guaranteed.
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Write Me at once I have just what you want heavy bone registered Duroc Jersey boars ready for service.
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Duroc Jerseys Boars sired by Ed's Defender Col. and Thora Apple Col. The 2nd one yearling Boar by Orion's Fancy King.
FREY BROS., Caledonia, Mich.

Duroc Jersey boars from 6 mo. to 1 yr. old. Young sows old enough to breed for spring litters all in good condition and at fair prices. Safe delivery guaranteed.
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Carey U. Edmonds, Hastings, Mich.

DUROC JERSEYS Boars and gilts by Mich. Pathfinder.
E. D. HEYDENBERG, Wayland, Mich.

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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.
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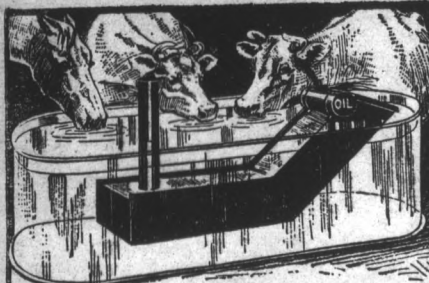
SPECIAL prices on Fall, Winter and Spring boars during October.
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Big Type Chester Whites Spring boars sired by Wildwood Jr. 2nd. Hill's Big Bone, Col. Wykoff, Smith's Giant and Champion X Jr. and out of good big dams. Cholera immune and satisfaction guaranteed. Also fall pigs, either sex, not related.
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O. I. C's choice spring pigs either sex. Booking orders for fall pigs. We register free and ship O. O. D.
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O. I. C's Eight young boars and spring pigs for June shipment.
OLOVER LEAF STOCK FARM, Monroe, Mich.

O. I. C's 2 March boars \$40 each. Fall pigs by O. O. Big Callaway.
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Greatest improvement ever made in tank heaters. Fits any tank. Burns from 14 to 16 hours on one gallon of kerosene. Any child can operate it with safety; no sparks, ashes or smoke. The heating chamber is entirely under water; no heat wasted. Guaranteed. Saves feed—pays for itself repeatedly.

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Made of heavy galvanized iron—large capacity (70 gal.) drinking trough on outside where hogs can reach it; oil burner directly under trough—guaranteed not to freeze. Keeps water warm for 2c per day. An abundance of fresh, clean water at right temperature. Keeps hogs healthy—fatten faster on the same feed.



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The tank heater with the Improved Burner. Different from others. New Features. No sparks, no smoke, no ashes, no danger from fire, no heat wasted. All heating space under water. Compact, convenient and easily handled. Keeps water at even temperature in coldest weather. Made of heavy steel. All seams welded. Fits any wood, steel or concrete tank. Pays for itself first year. Don't buy until you get the facts and price of the ACME. It's Guaranteed.

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Made of galvanized iron. Three different styles to choose from. All guaranteed not to freeze. Live Farmer Agents Wanted. Write today.
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ALL SIZES AND STYLES
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at proportionately Low Prices. Above price for 2 H.P. is for engine complete on skids ready to use. From Pittsburgh add \$6. Quick shipment. Write or wire for Big New Engine Catalog FREE.
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TRADE MARK REG. U.S. PAT. OFF.
Will reduce Inflamed, Strained, Swollen Tendons, Ligaments, or Muscles. Stops the lameness and pain from a Splint, Side Bone or Bone Spavin. No blister, no hair gone and horse can be used. \$2.50 a bottle at druggists or delivered. Describe your case for special instructions and interesting horse Book 2 R Free. **ABSORBINE, JR.**, the antiseptic liniment for manking, reduces Strained, Torn Ligaments, Swollen Glands, Veins or Muscles; Heals Cuts, Sores, Ulcers, Allays pain. Price \$1.25 a bottle as delivered. Book "Evidence" free. **W. F. YOUNG, INC., 258 Temple Street, Springfield, Mass.**



MINERAL HEAVE COMPOUND
CURES HEAVES
I will condition a Horse or Cow in twelve days.
Put flesh on its bones. Give it life and vigor. Can add 50% to looks and value. Satisfaction guaranteed or no pay. Send postal for free offer.
P. M. FAUST, BRYN MAWR, PA.

Veterinary.

CONDUCTED BY DR. W. C. FAIR.

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

Indigestion.—Have a young cow that was always well up to two months ago. Since then she has occasionally had sick spells. Bowels were costive; I changed her feed. Her throat appeared to be sore, but in a week she was well. She has no fever and is giving about four quarts of milk a day. Our local veterinary is treating her; he believes she has eaten some infected food. I have been milking her since July 10, 1919. E. E. L., Mendon, Mich.—Her bowels should be regulated by feeding food that has a laxative tendency. Of course, a little salt added will increase her thirst, consequently she will drink more water and this will loosen her bowels; besides, she should have walking exercise. Mix equal parts of ginger, gentian, red cinchona, bicarbonate of soda, powdered sulphate of iron and salt together and give her a tablespoonful or two at a dose two or three times a day in feed.

Nasal Catarrh.—My flock of fifty sheep are troubled with snuffles and I would like a sure cure for this ailment. E. E. H., Williamston, Mich.—Treatment usually consists in removing the cause, but as we have had no cold damp weather you had better increase their grain ration, also give them equal parts of sulphur, salt and sulphate of iron. A teaspoonful is dose enough for three or four sheep; medicine should be given twice a day.

Worms.—We have a cat that is troubled with worms; the long slim variety. Cat is about twelve months old. J. B. V. H., Hamilton, Mich.—For every pound the cat weighs give one grain of powdered areca nut in sweet milk three times a week, or until the cat is well. If the bowels are costive give castor oil.

Vertigo—Stomach Stagers.—I have a twelve-year-old mare that occasionally falls down. Preceding these attacks she is rather dull and drowsy. It is now more than two years since she had the first attack; this summer the attacks seem to be more frequent, but don't last any longer. N. H., Alto, Mich.—A case of this kind will not be benefited much by giving drugs; however, if the bowels are kept open and active, and if the collar fits properly she may not be bothered much with dizziness. Give her one dram of potassium iodide in feed or in drinking water three times a day.

Enlarged Throat.—Have a cow with large bunch in throat, which makes breathing somewhat difficult. What is the remedy? E. L. W., Howell, Mich.—Clip off hair and apply one part red iodine of mercury and six parts lard once a week.

Garget—Infected Udder.—Our four-year-old cow is troubled with garget and three of the four quarters seem to be infected or diseased. C. F. F., Metamora, Mich.—Give her half ounce of fluid extract of poke at a dose three times a day, apply iodine ointment to caked portion of udder once a day. If her bowels are costive give epsom salts to open them.

Lame Calf.—I have a five-month-old calf that has been lame for the past two months in left fore leg, no particular heat or swelling. H. C., Gregory, Mich.—It is considered bad practice to either treat or prescribe a remedy for lameness, until you have located the lameness. Hand-rub leg.

Imperfect Udder.—I have a heifer that came fresh on June 2. She gives very little milk from forequarters. She has shown no symptoms of sickness, but the fore part of udder swelled before she came fresh. Do you believe she will be all right when she freshens again? E. O., Rock, Mich.—It might help her some if the udder was gently hand-rubbed twice a day, but waiting twelve months is too long for uncertain results; therefore, I advise you to dispose of her for beef.

Difficult Breathing.—We have a pig that breathes with difficulty, making a wheezing noise and seems unable to open its mouth wide enough to eat carrots and other solid food. Can you suggest a cause and remedy? O. W. P., Muskegon, Mich.—Rub throat with camphorated oil twice a day.

Feed Every 3rd Hog FREE

Save feed and get your hogs ready for market in less time. Prove at our risk that you can save fully one third your feed, making it possible to feed every third hog free by feeding

Milkoline At 2c a Gallon

Milkoline has a base of pasteurized and sterilized, modified Buttermilk. It is guaranteed not to contain any sulphuric acid or anything of an injurious nature to hogs or poultry.

Aids Digestion: Thousands of the most successful hog raisers from New York to California during the past seven years have proved that Milkoline helps and assists digestion, tending to insure perfect assimilation of feed. It helps tone up the system so that hogs are less subject to disease, and practically insures gains of 2½ pounds per head per day.

University Tested Professor W. B. Combs while Ass't. Prof. of Dairy Husbandry at Missouri University conducted a scientific test on Milkoline and found that Milkoline fed hogs put on more weight and showed \$2.57% more profit than hogs not fed Milkoline. W. H. Graham a successful feeder of Middletown, Mo., said \$30 worth of Milkoline made him an extra profit of \$420. Lee Jackson of Wappingers Falls, N. Y., says Milkoline fixed up a bunch of shoats in fine style and is great for brood sows.

Can't Spoil: Milkoline is guaranteed not to rot, sour or mould. It will keep indefinitely in any climate. Flies do not come near it. It is always uniform, and is guaranteed to make you money or it doesn't cost you anything.

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2c a Gallon Milkoline comes in condensed form, and you do the diluting on your own farm. When fed as directed Milkoline mixture (one part Milkoline to 50 parts water or swill) costs only 2c a gallon. Full feeding directions free. It is shipped in convenient kegs and barrels which we supply free. The prices are as follows: 5 gal. \$7.50; 10 gal. \$12.50; 15 gal. \$16.50; 22 gal. \$22.00; 55 gal. \$49.50. It pays to buy in barrel lots because you save 60c a gal. over the 5 gal. quantities.

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You are safe in ordering any quantity of Milkoline today. Feed one half the shipment to your hogs and poultry in a thirty day test, then if you aren't entirely satisfied return the unused portions at our expense and we'll immediately refund every cent you paid us. We are so confident that you will find Milkoline the best money maker on the farm that the S. W. Boulevard Bank of Kansas City substantiates this offer. You are the sole judge. Send money order, or check, to us or our nearest dealer and we will ship immediately. Our booklet, "How to Hustle Heavy Hogs to Market" will be sent free on request—your name on a card will do.

Saginaw, Mich.

HOGS

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

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

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Coral, Mich.

For Sale O. I. C. Swine. Strictly Big Type with good quality. Have a few good boars and gilts left of same type and blood lines. That won't for us at Ohio and Michigan State Fairs. Priced very cheap. Write us before you buy.
NEWMAN'S STOCK FARM,
R. 1, MARLETTE, MICH.

O. I. C's. One last fall boar wgt. 425, two last fall gilts, bred lots of spring pigs and this fall pigs either sex, good growthy stock ½ mile west of Depot. Ott's. Phone 124. Otto B. Schulze, Nashville, Mich.

O. I. C's June and July boars and open gilts. Recorded and express paid for next 30 days each one a guaranteed feeder. F. C. Burgess, R. 3, Mason, Mich.

O. I. C. Serviceable boars. A few extra good boars at farmers' prices.
H. W. MANN, Danville, Mich.

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

Closing out sale of big type Poland China hogs, which represents the work of 25 years of constructive breeding. Everything goes, including our three great herd boars, "Mich. Buster," by "Giant Buster," "A Giant" "Butler's Big Bob." Two of the best yearling prospects in Michigan great length, big bone, come get your pick. Jno. C. Butler, Portland, Mich.

Large type Poland China's spring boars ready to sire. Everything immune from Cholera.
A. A. FELDKAMP, R. No. 2, Manchester, Mich.

Poland Chinas

Spring boars and gilts from the Sr. Champion boar at the State Fair at Detroit this year also Grand Champion at West Mich. Fair at Grand Rapids weighing 1025 lbs.
If you want something that will give you satisfaction let us sell you a boar or gilt.

ALLEN BROS., Paw Paw, Mich.

L. S. P. C.

Everything sold previously ad. 25 spring pigs placed on the bargain counter for mo. of Sept. pairs or trios not akin.
H. O. SWARTZ, Shoolcraft, Mich.

Big Type Poland Chinas

Our herd is representative of the best in Big Types. Choice boars for sale now. Wesley Hile, R. 6, Ionia, Mich.

Poland China Special pig sired by Hovers' Giant 1227½ and from our best sows are the best we ever offered. Write for particulars.
DORUS HOVER, Akron, Mich.

6 boar pigs best I have raised in my 15 years of breeding sired by Big Bob Mastodon a son of the world's champion. Price \$50 and 50 fall pigs send orders now.
O. E. GARNANT, Eaton Rapids, Mich.

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

My! Oh My! What An Opportunity
We are now offering a few choice big type Poland China Boars, from Big Smooth Jones, one of the breeds best sires, from dams by such noted sires as Grand Master, Hillcrest Wonder, Mastodon Wonder and Hillcrest Bob.
You can't get better breeding. Individually they will please you. Price \$50.00.
HILLCREST FARM, Kalamazoo, Mich.

L. T. P. C.

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

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

Big Type P. O. a few first class, 200 lb. boars left also some fall boar pigs good enough to head any herd. Come and see or write.
E. R. LEONARD, R. 3, St. Louis, Mich.

BARGAINS on Big type spring and summer Poland China Pigs also yearling Shorthorn bulls, bull and heifer calves.
Robert Neve, Pierson, Mich.

L. T. P. C. Spring boars and gilts now ready to ship. Something good at a right price.
W. J. HAGELSHAW, Augusta, Mich.

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

HAMPSHIRE spring boars and fall pigs at a bargain, book your order now for bred gilts.
JOHN W. SNYDER, R. 4, St. Johns, Mich.

SHEEP.

Delaine Rams B. & O. type, having size, quality, best of breeding, priced to sell, write.
S. H. SANDERS, R. 2, Ashtabula, O.

WHITTUM FARM SHROPSHIRE
A fine lot of imported and house bred yearling ewes and rams for sale. A fine chance to start a new flock or improve the old one call at the farm or write for just what you want.
C. H. WHITTUM, Eaton Rapids, Mich.

FOR SALE 35 Registered Shropshire yearling rams and ram lambs. Also some choice Duroc Jersey boars and gilts.
CLIFFORD MIDDLETON, Clayton, Mich.

SHROPSHIRE Yearling and Lamb rams sired by Imp. Harry No. 163 for sale. Also a few ewes.
ARTHUR DODDS, Lapeer, Michigan

Shropshire Rams lambs, yearlings and one 2 yrs. old, priced right.
CARL TOPLIFF, Eaton Rapids, Mich.

Shropshires Yearling and rams, with quality, from imported stock.
W. B. McQUILLAN, R. 7, Howell, Mich.

Shropshires yearling rams. Ewes of all ages. Priced right.
W. B. KELLY, Ypsilanti, Mich.

Shropshire Rams yearling or lambs for sale.
ARMSTRONG BROS., R. 3, Fowlerville, Mich.

Wool-Mutton Shropshire Rams. Good strong individuals, royally bred, priced right. A. H. FOSTER, Allegan, Mich.

Registered Shrops' Rams and ewes all ages for sale. with size and quality.
F. Mousey, R. 6, Ithaca, Mich.

Registered Shropshire Ewes and rams. Jno. Grieve, R. 3, Fowlerville, Mich.

SHROPSHIRE Yearling rams, right in price and quality.
W. E. MORRISH, R. 5, Flint, Mich.

Reg. Hampshire Down ram lambs, one registered Berkshire pig. M. G. Mosher & Sons, Osseo, Mich.

For Sale Oxford ram lambs registered and delivered \$25.00. Guaranteed.
GEO. T. ABBOTT, Palm, Mich.

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O. M. YORK, Millington, Mich.

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BAY MARE
For Sale, sound and right in every way, weight about 550 lbs. Must be sold at once come and see her or write **L. J. Hamlin,** 496 Huribut Ave., Detroit, Mich.

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

LATEST MARKET REPORTS

GRAIN QUOTATIONS

November 23, 1920.

Wheat.

Detroit.—Cash No. 2 red \$2; December \$1.91; March \$1.89; No. 2 white and No. 2 mixed \$1.98.

Chicago.—No. 1 hard \$1.68½@1.72½ per bushel; December \$1.68; March \$1.63½.

Corn.

Detroit.—Cash No. 3 yellow, new 87c; No. 4 yellow, new 83c.

Chicago.—No. 2 mixed 71@72c; No. 3 yellow 67@68c.

Oats.

Detroit.—Cash No. 2 white 56c; No. 3 white 54½c; No. 4 white 52½c.

Chicago.—No. 2 white 47½@49¼c; No. 3 white 45½@46½c.

Beans.

Detroit.—Immediate and prompt are lower at \$4.30@4.40 per cwt.

Chicago.—Market steady. Hand-picked beans choice to fancy \$4.75@5; red kidney beans \$9@9.50 per cwt.

New York.—Market continues dull. Choice pea \$5.75; do medium \$5.75@6; red kidney \$10.50@11 per cwt.

Rye.

Detroit.—Cash No. 2 rye \$1.55.

Seeds.

Detroit.—Prime red clover \$11.25; December \$11.50; alsike \$15.50; timothy \$3.40.

Toledo.—Prime red clover, cash and December \$11.65; alsike \$15.15; timothy \$3.30.

WHEAT

The condition of the new winter wheat crop is relatively high, probably around 90, compared with 85.2 last year. There are a few sections in Kansas where more moisture would be beneficial. Canadian wheat continues to be sold to come into the United States but business is greatly hampered by the fact that Canadian growers own practically all of the wheat in store at Fort William and Fort Arthur, around 15,000,000 bushels; and refuse to sell, holding for higher prices. As a result Duluth sold back to Canada 100,000 bushels of wheat recently brought from there. Canadian flour which was recently offered at \$1.50@2 per barrel under domestic at Chicago is now around the same price to 50c per barrel premium. The foreign demand for cash wheat has been very brisk at times with the continent the best buyer. A move is under way whereby the Germans will be given \$250,000,000 to \$750,000,000 held for them by the alien enemy property custodian in this country and it is expected that an immense export demand will be reported for grains and hog products if this plan is carried into effect. The flour demand has shown some tendency to increase but buyers are still cautious.

CORN

The decline in corn has been almost continuous for 75 days during which period the December has dropped around \$1 per bushel and the price has been more than cut in half. Even the most hardened speculators are commencing to complain about the persistent decline, admitting that the entire prosperity of the country depends on stabilizing prices. At week's close there was a disposition to turn to the constructive side of the market and a sharp upward swing may come at any time. The one great feat that the break has done is to solidify the farmers' organizations such as nothing else could have done. The holding tendency on the part of producers continues. The movement of new corn has increased rapidly and the bulk of the arrivals at Chicago are now from the 1920 crop. Very little grain is grading below No. 4, with a fair sprinkling of the No. 2 grades, something most unusual at this season of the year. Cash corn premiums have eased off around three cents the past week, with the industries the best buyers.

FEEDS

Although mill feeds are practically unchanged for the week, cottonseed meal and linseed meal declined, reflecting the lack of confidence among cattle producers as their financial difficulties. Fresh declines in feed grains are offsetting any seasonal increase in demand for feedstuffs. Latest quotations per ton (100-lb bags) in carlots are:

Chicago.—Bran \$37; standard middlings \$40; flour middlings \$42; cottonseed meal, 41 per cent \$48; cottonseed meal, 36 per cent \$42; gluten feed \$45; hominy feed \$42; old process oil meal \$61; tankage \$80@90. Detroit.—Bran \$43; standard middlings \$45; flour middlings \$54; coarse corn meal \$44; cracked corn \$47; chop \$32.

SEEDS

The declines affecting all commodities caused clover seed prices to reach new low prices. In the absence of consumptive demand and with speculative buying restricted by business liquidation and tight money all other factors are ignored.

BEANS

Although the market is dull, with buyers following the hand to mouth policy in their purchases, prices have held during the week reasonably well in view of the sharp declines in other farm products. The ruling price at the close of the week per 100-lb sack f. o. b. Michigan shipping points, was \$4.60, a decline of ten cents for the week.

HAY

High freight costs serve to prop up hay prices to consumers, although the producers are getting but small returns. Values are high compared with corn, oats and by-product feeds and show but little change, although a weakening tendency is noticeable.

Detroit.—No. 1 timothy \$29@30; standard \$28@29; light mixed \$28@29; No. 2 timothy \$27@28; No. 1 mixed \$26@27; No. 1 clover \$26@27; rye straw \$14.50@15; wheat and oat straw at \$13.50@14.

BUTTER

Scarcity of finer grades kept eastern butter markets firm with prices practically unchanged, but eastern buyers have ample stocks and did little buying at Chicago, making that market weak. The general undertone is ner-

vous. Prices are high compared to many other products, no one is anxious to stock up for distant requirements, and foreign producers continue to offer butter in our markets. Storage holdings on November 1, as shown in the final report, were 101,726,000 lbs, a decrease of 12,650,000 lbs. during October, whereas last year the corresponding decrease was about 21,300,000 lbs. Storage stocks are moving slowly and operators are complaining of losses. Prices on 92 score butter on November 19 as quoted by the bureau of markets, were: Chicago 61c; New York 65c; Boston 61c; Philadelphia 65c per pound.

EGGS AND POULTRY

Egg markets continue to show surprising strength in view of the weakness of numerous other foods. Prices generally were higher the past week, Chicago reaching a new altitude for the season. While the supply of eggs is inadequate, the price looks top-heavy and a reaction would occasion no surprise. Poultry prices were irregular, Thanksgiving trade not bringing uniform strength. Detroit.—Eggs, fresh candled 72@73c. Live poultry, spring chickens 26@27c; Leghorns 20@22c; hens 24@25c; small hens 18c; roosters 18; geese 25c; ducks 30@32c; turkeys 37@38c.

CHEESE

Cheese distributing markets were steady to firm the past week. The slight price advances did not reflect to the full extent the sharp advance in country markets. Demand was limited, and buyers continue to economize on storage space by purchasing in small lots. There is almost no trading in a wholesale way. Fresh cheese is none too plentiful but prices hold firm largely because there is but little pushing of sales. Storage holdings decreased about 6,000,000 pounds during October compared with a decrease of about

10,000,000 pounds last year. The total remaining on November 1 was about two-thirds as large as last year.

POTATOES

Potato buyers continue to operate cautiously and the market continues rather nervous. Prices f. o. b. northern shipping points declined to \$1.75@2 per 100 lbs sacked. Most midwestern markets are steady, but Chicago declined slightly. Shipments from the northern producing sections are falling off. Chicago.—Northern whites \$1.90@2 per cwt. Cleveland.—Ohio and New York round whites, No. 1 \$3.60@3.75 per 150-lb sack; Michigan round whites \$3.50@3.75. Detroit.—Michigan \$3.50@3.75 per 100-lb sack.

APPLES

Cold storage holdings of apples on November 1 were 3,256,355 barrels, as compared with 3,108,246 on the same date last year, and 2,914,828 barrels two years ago. Boxed apple holdings were 2,716,734 boxes, compared with 2,244,245 last year and 2,512,541 in 1918. Shipments of both barreled and boxed apples as well as receipts at eastern country shipping points are falling off. Values are steady to slightly higher. Baldwins A-2½ are still at \$4.25 per barrel at New York shipping points, but range slightly higher in consuming markets at \$4.50@6.

ONIONS

Shipping point prices for onions are a shade lower at \$1.20@1.35. Consuming markets are irregular at \$1.25@1.75 but most of them show advances. Shipments are declining.

CABBAGE

Cabbage prices practically steady at country points but consuming markets in the east are \$4 per ton lower. Shipments are falling off.

DETROIT CITY MARKET

These markets are well supplied with produce, but trading is very slow on most offerings. Poultry moved fairly well except turkeys which were slow sellers at 45 cents per pound live weight. Geese and ducks moved fast at 32c with the prices ranging from 23c to 32c a pound. No pork or veal were offered. Carrots moved very well but the majority of vegetables were slower movers. An abundance of kale was offered but the demand was very light for this green. Most potatoes sold at \$1.30@1.45 with most sales at \$1.40.

FEEDERS DON'T GET FULL DECLINE.

The big run of stock furnished feeder buyers an opportunity but the full amount of the decline was not passed on to them. The spread between prices for steers taken for slaughter, and prices for feeders in the yard traders' hands was not as wide as it should have been. However, enough country buyers were attracted by the lower prices to start the trend upward again.

PROVISION MARKETS DECLINE.

In line with all other speculative commodity markets, prices for cured hog products declined during the past week. Lower prices for hogs also tended to lower provision values and lower prices upon these tended in turn to bring fresh declines in hogs.

Reports of total storage holdings for November 1 show a big decline in lard stocks to 47,795,000 pounds compared with 109,258,000 pounds a month ago and 66,936,000 pounds on November 1, 1919. Since Chicago stocks also declined during the first half of November it is safe to infer that the total remaining supply is comparatively small. Stocks of frozen, salted and pickled pork also declined materially during October.

The pool of banks to provide \$25,000,000 for carrying cattle loans which are now being called is rapidly taking shape but it remains to be seen how much it will influence market values.

Production of buckwheat is estimated at 14,321,000 bushels, compared with 15,532,000 bushels forecast last month and 16,301,000 bushels produced last year.

Live Stock Market Service

Markets for November 24.

DETROIT

Cattle.

Market dull but steady.

Best heavy steers	10.00
Best handy wt bu steers	7.50@ 8.50
Mixed steers and heifers	7.00@ 7.25
Handy light butchers	6.00@ 6.50
Light butchers	4.00@ 5.50
Best cows	6.25@ 7.00
Butcher cows	5.00@ 6.00
Common cows	3.75@ 4.00
Canners	3.00@ 3.50
Choice bulls	6.50@ 6.75
Bologna bulls	5.75@ 6.25
Stock bulls	4.00@ 5.50
Feeders	7.00@ 9.00
Stockers	4.00@ 6.75
Milkers and springers	65@ 100

Veal Calves.

Market very dull.

Best	13.00
Others	4.00@10.00

Hogs.

Market steady.

Mixed hogs	\$10.00
Pigs and Yorkers	10.25

Sheep and Lambs.

Best lambs	\$10.25@10.50
Fair lambs	8.00@ 9.50
Light to common	4.00@ 7.25
Fair to good sheep	3.50@ 4.00
Culls and common	1.00@ 3.00

CHICAGO

Hogs.

Estimated receipts today are 23,000; holdover 14,356. Market 10@15c lower. Bulk of sales \$9.60@9.90; tops at \$10; heavy 250 lbs up medium, good and choice \$9.60@10; medium 200 to 250 lbs medium, good and choice \$9.75@10; light 150 to 200 lbs common, medium, good and choice \$9.50@9.90; light lights 130 to 150 lbs common, medium, good and choice at \$9.50@9.90; heavy packing sows 250 lbs up smooth \$9.10@9.50; packing sows 200 lbs up rough \$8.90@9.10; pigs 130 lbs down, medium, good and choice \$9.25@10.25.

Cattle.

Estimated receipts today are 10,000. Fat natives are 25@50c higher; others slow. Steady to strong; calves 50c lower. 11.50.

Beef steers, medium and heavy weight 1100 lbs up choice and price \$15.75@18; do medium and good \$9.75@15.75; do common \$8@9.75; light weight 1100 lbs up choice and prime \$15.75@17.65; do common and medium \$7.25@12.35; butcher cattle heifers, common, medium, good and choice \$4.50@12.50; cows common, medium good and choice \$4.50@10.50; bulls, bologna and beef \$4.50@9.40; canners and cutters cows and heifers \$3.25@4.50; do canner steers at \$3.75@5.50; veal calves; light and handyweight medium, good and choice \$12.50@13.75; feeder steers common, medium, good and choice at \$7.50@10.75; stocker steers, common, medium, good and choice \$4.25@8.75; stocker cows and heifers, common, medium, good and choice \$4@7; western range cattle beef steers, medium, good and choice \$8.50@12.25; do cows and heifers medium, good and choice \$5.25@9.50.

Sheep and Lambs.

Estimated receipts 14,000. Market steady. Lambs 84 lbs down, medium, good, choice and prime at \$10@11.25; do culls and common at \$7.50@9.50; spring lambs medium, good, choice and prime \$7.75@9; ewes, medium, good and choice at \$4@4.65; ewes cull and common \$2@3.50; breeding ewes full mouths to yearlings \$4.50@6.50; yearling wethers medium, good and choice \$10@10.50.

BUFFALO

Cattle.

This market is very slow. Prices sagged 25@50c on Monday and there has been no recovery. Prime steers and shipping steers \$12.50@13.50; butchers \$8.50@12; yearlings \$13.50@14; heifers \$5.50@10; cows \$8@8.75; bulls \$5@8.75; stockers and feeders \$5.50@8.50; fresh cows and springers 50c@1.20. Calves \$1 lower at \$4@16.

Hogs.

Prices have declined to the pre-war level. Pigs and lights bring \$11@11.50; others \$10.50@10.75.

Sheep and Lambs.

Everything except yearlings are slow. Best lambs brought \$10.75@11.50.

WOOL

The business depression which is especially severe in the textile trade continues to hold the wool market in check. Buying remains limited to actual requirements for immediate use. Wool stocks are large as the reduced consumption during the last six months has added to the present available supply. With so much of this year's clip still in growers' hands, the new clip approaching and American buyers at Australian sales, the outlook does not encourage belief in much higher prices, although the market must be near the bottom. At the latest Australian sales lower prices were enforced. At London's latest auctions fine wools were in demand but coarse grades were lower and many were withdrawn. Quotations remain mostly nominal.

STATE FARM BUREAU MARKET REPORT.

Farmers are not selling wheat. In one week it reached the lowest in four years, declining 24 cents a bushel. The millers find no demand for flour. Corn declined 10 cents, no demand whatever, either for new or old. Large crops would warrant still lower figures although western reports say farmers are building cribs to hold corn, their only salvation. Very little oats now moving to elevators. They are cheapest feed farmers can now use, as elevators report only paying one cent per pound for the commodity, which six months ago was four cents per pound. The rye market declined 14 cents. Many consignments of clover arriving at seed department. Due to low market many consignors are giving instructions to hold. The demand from northern counties is becoming brisk. There is a bumper crop of White Blossom sweet clover, with market dull. Little change in timothy. Soy beans looking better as demand increases.

STATE ASSOCIATION OF FARMERS' CLUBS MEETS AT LANSING.

The annual meeting of the Michigan State Association of Farmers' Clubs will be held in the Capitol Building, Lansing, on Tuesday and Wednesday, December 7-8.

Every Farmers' Club is asked to send at least two delegates to this meeting and all persons interested in agriculture are asked to attend if possible, as a program of interest and instructiveness is being planned by the executive board.—Mrs. I. R. JOHNSON, Secretary.

TO VISITORS AT INTERNATIONAL.

We have recently been advised by the management of the International Live Stock Exposition at Chicago that the Chicago Association of Commerce will maintain a rooming bureau throughout the entire period of the show. Anyone in need of a room may, upon arrival at Chicago, telephone the hotel information bureau of the Chicago Association of Commerce, Main 4808. The service of the bureau is absolutely free.

RECENT HOLSTEIN SALES.

Central Michigan Sale.

FOLLOWING the Jackson sale, reported last week, came the Central Michigan Breeders' Third Annual Sale, October 20, at East Lansing, which included too many consignments that were poorly fitted. In fact, only a few animals in the sale gave evidence of any extra feed and care to put them in shape. This is a great mistake on the part of contributors to a public sale, for the extra feed and care necessary to put cattle in proper condition will bring greater returns on the investment than anything else in connection with the public sale.

Fifty-eight animals brought \$11,960, an average of \$206.20 per head. Thirteen animals sold for \$300 or more, and the top price, \$450, was paid for a ten-months-old bull calf from a thirty-pound dam. This calf was in the consignment of C. A. Daniels & Son, and was purchased by J. B. McCallum, of Hart, Michigan. Mr. McCallum was the heaviest buyer, taking eleven head for \$2,575. Colver Farms, Colver, Pennsylvania, were the only out of the state buyers, taking six head at \$1,455.

Shiawassee County Sale.

The Shiawassee County Breeders' Sale at Owosso, October 21, was a satisfactory sale and a larger crowd was in attendance. This was the first consignment sale ever attempted in Shiawassee county, and breeders should be complimented upon the quality and

condition of the offerings. Every animal was in good condition and well trimmed and groomed and if the breeders keep up the pace they set in their first sale, they will have one of the best sales in the state.

Prices were not high, but were fairly satisfactory, considering existing conditions, and only a few of the animals offered had much immediate official record backing.

The top price was \$1,000 for the thirty-one-pound cow, Rosie Mercedes Butter Boy, consigned by H. A. Smith of Wixom, Michigan. She was purchased by the G. L. Spillane & Son Company, of Clio, Michigan, and will probably be put on yearly work with the rest of their herd.

J. E. McWilliams, superintendent of the Detroit Creamery Company, at their Mount Clemens plant, bought four fine ones for \$1,870; M. J. Roche, of Pinckney, took five, and James B. Jones, of Romeo, and Floyd Pierson, of Flint, each took home four. Baldwin & Nowlin, of Bennington, Michigan, were the heaviest purchasers, with eight head at \$2,265.

Twenty head in this sale sold for \$300 or over, and the entire number, eighty head, brought \$19,290, an average of \$241.12 per head.

RAMSDELL'S POLAND CHINA SALE.

AT Hanover, Michigan, November 10, Barney Ramsdell sold twenty Poland China hogs for an average of more than \$92. The entire sale offering made an average of better than \$80. Everything passed off without a slip. The hogs were in good condition, possessed popular blood lines and the sale was one of the best conducted ones held this year. Colonel Billy Waffle, of Coldwater, looked like a "million dollars" in the box, while Colonel Jim Post, not related to the Outpost, and Colonel John Hoffman certainly kept the crowd on their toes. Every hog in the sale was double-immuned and a certificate went with the sale. The following twenty animals sold for:

No. 2, sow, to W. E. Livingston, \$140.
No. 3, sow, to Thomas Tryon, \$65.
No. 4, sow, to George Church, \$118.
No. 5, sow, to James Mygrant, \$115.
No. 8, boar, to Howard Kerr, \$78.
No. 9, boar, to George McKibbin, \$67.50.
No. 11, gilt, to Bert Sanderson, \$97.50.
No. 13, gilt, to Levi Kesserling, \$80.
No. 15, gilt, to F. E. Haynes, \$227.
No. 00, gilt, to Ralph Butler, \$127.50.
No. 16, boar, to Fred Baker, \$67.50.
No. 17, gilt, to A. D. Gregory, \$110.
No. 18, gilt, to I. K. Maystead, \$68.
No. 19, gilt, to Wm. Reynolds, \$102.50.
No. 20, gilt, to I. K. Maystead, \$69.
No. 22, gilt, to Jesse Fogg, \$91.
No. 21, boar, to Harry Kelly, \$60.
No. 14, boar, to Wm. Reynolds, \$61.
No. 10, gilt, to I. K. Maystead, \$59.
No. 12, gilt, to I. K. Maystead, \$52.50.

AGRICULTURAL NEWS.

Notwithstanding the efforts being made to increase foreign trade, the federal reserve banks reports show a further decline in export demand, for American products, and lack of new orders. This is due, the banks say, to the fact that the fall in prices of many commodities in foreign as well as domestic markets, with the attendant financial strain abroad, has reduced buying power and caused a slackening in demand.

If the statement given out by the institute of American meat packers is correct, there was a decline in wholesale prices of beef and pork during October. The statement says the "selling prices of carcass beef throughout the country showed an average decline of thirteen per cent at the end of October, as compared with the first week in September. Fresh pork declined heavily. In the domestic trade from October 2 to October 26, the wholesale prices of light pork loins declined about twenty-one per cent. During this time pork shoulders declined ten per cent, and smoked hams and standard bacon fell slightly less than ten per cent."

The nineteenth annual chrysanthemum show of the department of agriculture, last week, was a delight to flower lovers. A dozen or more new varieties of chrysanthemums were named during the show, among them being the "Lambert Jones," "Hedweg M. Slater," "Mrs. John G. Slater," "Francis G. Williamson," and "Dorothy Gorges."

E. E. R.

REINFORCING FARM MANURE.

THE field was covered with twelve loads of stall manure per acre, reinforced with 300 pounds per acre of sixteen per cent acid phosphate, except a check strip thirty feet wide across the field, which received the manure but no acid phosphate.

One average row across the field gave 860 pounds of ensilage corn. This row when husked out gave six baskets of corn, from which half a bushel of choice seed ears were selected, and about one-third of a bushel of soft corn.

Row in check strip receiving the manure but no acid phosphate gave 740 pounds of ensilage corn; but when husked gave only four and a quarter baskets of ears, from which only seven seed ears were selected, and one full basket of soft corn.

The difference, therefore, between the gross weight of the corn as cut does not represent the true value of the crop furnished by the acid phosphate. The difference per row of one hundred and twenty pounds for the acid phosphate would equal 2,376 pounds per acre. The acid phosphate at \$32 per ton, cost \$4.80 per acre, and the value of the ensilage produced, at \$8.00 per ton, would be \$9.50, leaving a balance in favor of the acid phosphate of \$4.70. This, however, would be increased by the greater value of the ensilage from the fertilized corn.

Or, to reckon it in baskets of corn—one and three-fourths baskets per row, or thirty baskets per acre, could have been picked off and still leave the value of the fertilizer corn equal to the corn in the check strip. Giving the thirty baskets a value of \$15, and subtracting the \$4.80, we have \$11.20 net profit from the use of phosphate, less labor to apply. Even this does not show the entire gain, as the fertility added by the phosphate which the corn did not use, will increase the growth of the rye and vetch crop following the corn, enough probably to pay the entire fertilizer bill.

Results in this particular case are 154 tons of ensilage, containing 1,994 baskets of ears, less the ten rows husked for the purpose of securing the above figures; all from 20.15 acres of land which a few years ago would raise six bushels of rye per acre. Next spring, figures can be given on the number of pounds of beef produced by this ensilage, fed with sufficient protein feed to make a balanced ration.

Charlevoix Co. B. E. WATERMAN.

SHORTHORNS SELL WELL.

At the recent Shorthorn sale at Chicago the firm of Prescott & Sons, of Michigan, sold thirty-nine head of cattle for a total of \$41,000. One cow brought \$3,500, and a number of others sold at prices around \$2,500.

COMING LIVE STOCK SALES.

Poland China.—December 3, Alfred Grueber, Frankenmuth, Michigan.

Only \$2 DOWN ONE YEAR TO PAY

Boys the New Butterfly Jr. No. 254
Light running, easy cleaning,
close skimming, durable.
NEW BUTTERFLY Separators are
lifetime against defects in material and work-
manship. Made also in four larger sizes up to
No. 8 shown here; sold on
30 DAYS' FREE TRIAL
and on a plan whereby they save their own cost
and more by what they save. Postal brings Free
Catalog Folder. Buy from the manufacturer
and save money!
ALBAUGH-DOVER CO., 2165 Marshall St., Chicago



VETCH Separator

—FOR—

Separating
Vetch
from
Wheat
Rye
or Oats

The Sinclair Scott Co.
Baltimore, Md.

Big Four Stock Salt

(Medicated)

Agents Wanted

We want an agent in every county in Michigan and surrounding states for this wonderful tonic, conditioner and worm expeller for run down or worm infested cattle, horses, hogs or sheep. Write for our proposition.
Eastman Salt Products Co.
Saginaw, Mich.

Mr. POULTRY FARMER:

We make a specialty of White Henner Eggs and have created a profitable market for your eggs the year around. We pay the highest premium for your Henner Whites—We remit same day shipments arrive. Ship Often—Ship by Express

GEO. R. ELDRIDGE CO.

494-18th Street, Detroit, Mich.

Remember! We guarantee you satisfaction with every shipment

Holmes, Stuve Co., 445 Riopelle St.

Commission Merchants. Dressed Beef, Hogs, calves, Poultry, Live & Dressed, Provisions, etc. Correspondence Solicited. Ref. Wayne County & Home Savings Bank, Bradstreet, Detroit, Mich. Cad. 2887

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

Cotton Seed Meal

\$30.00 per ton, sacks included. Instant shipment.
GEORGE W. YOUNG CO., Owosso, Mich.

Farms and Farm Lands For Sale

Attention Farmers!

If you want to sell or exchange, your farm for Detroit city property, write to us for quick results.

J. F. Hintz Real Estate Co.,

786 Milwaukee Ave., E. Detroit, Michigan.
Phone Melrose 281.

Members of the "Detroit Board of Commerce" and "Detroit Real Estate Brokers Association."

City Owner to Sell

40-Acre Michigan Farm for

\$1,250 with horse, cow and calf, wagon, harness, potatoes, oats, hay, just off Dixie Highway, on improved road, 1 1/2 mi. RR. town; loamy tillage, large pasture, woodlot; finely situated house, southern exposure, barn, etc.; only \$600 cash, balance easy terms. Details this and farm fully equipped for \$3,000 page 80 Strout's Big Illustrated Catalog Farm Bargains Michigan, Illinois, Indiana, Wisconsin and 25 other states. Copy free. STROUT FARM AGENCY, 814 BC Ford Bldg., Detroit, Mich.

Own a farm near Detroit, the automobile center of the world. Where land will double in value, 60 minutes to city, hard surface and state roads city people pay cash at your door for your products. Farmers making money selling milk, neighbor purchased farm 5 years ago with grain, fruit and cows paid for it and sold last winter for twice what paid. Had auction \$7000. A few fine farms good buildings, \$125 per acre for quick sale. J. W. SALLARD, Romeo, Mich.

FARMS FOR SALE IN NEW YORK STATE

All kinds of farms at bargain prices. "Go East Young Man" to the land of big values for low prices. "A Satisfied Customer" is our motto. Write for our catalog. Go direct to our headquarters for advice and correct information.
H. M. BOWEN, Cooperstown, N. Y. Farm Settlement Department.

Farms Here is a partial description of one of the many I have listed: 80 acres, slightly rolling, clay loam soil, good house, basement barn, silo, windmill, woven wire fences, about 350 fruit trees, 6 acres pasture, 5 acres sugar bush, very productive soil. Near school, 3 1/2 miles from town. Only \$6500. \$1500 down will buy it. Write or phone for full particulars.
G. C. Adams, The Farm Implement Man, Olivet, Mich.

BARGAIN for quick sale. A-1 80 A. some timber, spring brook, 4 1/2 m. Hastings, 60 r. St. tr. line, fine new modern 8r. bungalow bath, running water, shady lawn, good barn, other farm bldgs., also fine 80 A. with 19 A. timber near by, equipment if desired. Write WILL TREGO, R. 3, Hastings, Mich.

180 Acres Waukesha Twp. splendid maple soil, level, 150 a. tillable, 20 a. good timber; splendid house; new barn 64x36 another 36x40, cement stave silo 12x40, good fences, windmill and gas engine; 50 a. clover seeding. Great bargain at \$135.00 per acre, Oscar E. Burnham, 507 Bank Bldg., Kalamazoo, Mich.

FARM BARGAIN

120 acres in Midland County. Good soil large house and barn, silo stone road to Bay City and Saginaw. Requires \$3,500.00 cash. Write EDWARD HESSE 580 Gratiot Avenue, Detroit, Michigan.

**ALWAYS
RELIABLE**

**SURE IN
RESULTS**

Gombault's CAUSTIC BALSAM

THE ACCEPTED VETERINARY AND HUMAN REMEDY

A RELIABLE, safe and active blister and counter irritant--is used successfully by the very best stockmen everywhere. The very fact that it is both "reliable and safe" for anyone to use is of particular interest especially to those who are not veterinarians or within reach of one; and when you consider that many of the veterinary surgeons are buying and using it, you can well believe it is a valuable and reliable veterinary and household remedy.

NOT ONLY SEE WHAT OTHERS SAY, BUT SATISFY YOURSELF BY TRYING IT

CAUSTIC BALSAM AS A HUMAN REMEDY IS Penetrating—Soothing—Healing

It is generally true that an external remedy that is good for the animal is also good for the human body, and Gombault's Caustic Balsam is no exception to this rule. In fact, we sincerely believe that there is no liniment or external remedy on the market that is as good or as safe and reliable to apply to the human body as Caustic Balsam. We can safely recommend it in all cases where an external application could benefit. It is also cheaper according to cost, because it requires very little and that little is effective.

A Safe and Reliable Germ Killer
Caustic Balsam, applied at once to any bruise or flesh wound, as soon as it stops bleeding and is thoroughly washed, will prevent blood poison and cause it to heal at once with scarcely any soreness. Persistent, thorough use will cure many old or chronic ailments, and it can always be used on any case that requires an external application, with perfect safety, and good results.

Veterinary surgeons use Caustic Balsam. Many recommend it. Why? Because it is a safe remedy for their customers to use and it brings satisfactory results.

Never Failed To Do Its Work

I am in the saw mill business and keep from twenty to thirty head of stock all the time. I have been using your Gombault's Caustic Balsam for the last ten years and I have tried it for every known lameness and it has never failed to do the work yet. I have cured many and never take them from the wagon. I have tried it on oxen's necks with good results. Hoping this will be some benefit to some stock owner.

Clarence J. Henley, Maplesville, Ala.

Information on special cases freely given. The accepted Human and Veterinary Remedy of the World.

Sure Cure For Rattle Snake Bites

Have used Gombault's Caustic Balsam for years and wouldn't be without it. It will not only do what is claimed for it, but it is also a sure cure for rattle snake bites, if taken in time. We have saved two horses and one cow with it. Thought you might want to put this in your list of cures, as so many use Caustic Balsam. It might save them a horse or cow some time if they knew about it.

S. H. Felt, Hartford, Michigan

Caustic Balsam will absolutely remove all poisonous secretions and create a healthy action.

Caustic Balsam Does More Than Claimed for it.

Enclosed please find draft for which send me one dozen bottles of Gombault's Caustic Balsam. I have been using your Caustic Balsam for four or five years and it does more than you claim for it. A neighbor, Mr. Seegar, had a horse with a bad case of swellings. He could not sell the animal for \$25.00. I advised him to use your Caustic Balsam and he did so, curing the horse, and has since refused \$100.00 for her. My niece had her knee badly injured by falling from a wagon. The doctors failed to effect a cure and she began using Caustic Balsam. She is now practically well. I have also known it to cure neuralgia and stop tooth-ache. It is one of the finest medicines for man and beast.

H. D. Sweazy, Beecher City, Ill.

Does Away With Firing

TO WHOM IT MAY CONCERN:

I have made many fine cures with Gombault's Caustic Balsam. I have cured bowed tendons, capped hock, splints, ringbone, sidebone, shoe boil, quitters, poll-evil, fistula of withers and many other long standing cases. It is either a mild blister or a fine counter irritant; does away with firing.

E. L. Seltzer, Shelltown, Md.

Caustic Balsam Does More Than Guaranteed

I have used Caustic Balsam for the last seven years and found it just as it was recommended, and even more, because it will cure where other medicine fails and I can prove it. I can certainly recommend it.

J. T. Sullivan, Chebanse, Ill.

Twenty Years Success With Caustic Balsam

After using Gombault's Caustic Balsam for twenty years I can say it has never failed to do all you recommend it to do. While it seems high to one that has never tried it, once a customer always one. I have used it for twenty years and use no other but it.

W.A. McCauley, Malone, Tex.

Good For Any Cut or Bruise

I recommend your Caustic Balsam for any kind of rusty nail or barb wire cut and has also cured bad cases of blood poisoning. I am a veterinarian and surgeon and I recommend to any man this Caustic Balsam as a cure of what I said.

F. Max Scheibe, V.S., Dulce, N. Mex.

CAREFUL FARMERS

USE CAUSTIC BALSAM

A Safe and Reliable Antiseptic

Do you turn your horses out for the winter? If so, we want to call your attention to a very important matter. Horses which have been used steadily at work, either on the farm or road, have quite likely had some strains whereby lameness or enlargements have been caused. Or perhaps new life is needed to be infused into their legs. Gombault's Caustic Balsam, applied as per directions just as you are turning the horses out, will be of great benefit; and this is the time when it can be used very successfully. One great advantage in using this remedy is that after it is applied it needs no care or attention, but does its work well and at a time when the horse is having a rest. Of course, it can be used with equal success while horses are in the stable, but many people in turning their horses out would use Caustic Balsam if they were reminded of it, and this article is given as a reminder.

Found Nothing That Equals Caustic Balsam

Kindly permit me to express my deep appreciation of Gombault's Caustic Balsam. I have cured sprains, ringbone, strained tendons, swellings, poll-evil with it in fine shape and do not see how a better liniment could be manufactured. I have used many things for removing puffs from horses but have never found any that would equal Caustic Balsam. I also had a cow that had lump jaw. I used Caustic Balsam and cured it.

John H. Wallgren, Logan, Kansas

Bunches on horses or any other livestock are unsightly.

Caustic Balsam Prevents Blood Poison

We have used Caustic Balsam for several years and have found it to be unequalled for horses or people. My husband ran a rusty nail in his hand and blood poison set in. We used two applications of Caustic Balsam and the swelling and fever left his hand and arm and it healed up without any more bother. It is also as efficient for snake bites and we would not think of being without it.

L. H. Globe, Forest Grove, Mont.

Caustic Balsam is good for that sore feeling after baseball or football games.

A Splendid Human Remedy

I think your Caustic Balsam a splendid human remedy. We use it for cuts, burns, sores, swellings, sore throat and lameness and find it very beneficial. We expect to keep it on hand ready for any emergency.

Mrs. Robt. B. Newton, Columbus, Miss.

The world's greatest and surest veterinary and human remedy. Has imitators, but no competitors.

Worth Its Weight In Gold

I have used Gombault's Caustic Balsam for my own horses and for others, and it has never failed yet. My little girl had rheumatism for a long time. Nothing did her any good until we used Caustic Balsam and she is all right. My wife had throat trouble and used Caustic Balsam with great results. It is worth its weight in gold.

Dr. Ira Le Dunlap, V.S., Rochester, Pa.

Gombault's Caustic Balsam As a Liniment for the Human Body has no Equal

A Liniment that benefits; it kills pain. A home remedy for the Human Family

ALL TESTS prove the wonderful efficiency of Gombault's Caustic Balsam in relieving human ailments, such as Rheumatism, Neuralgia, Sprains, Sore Throat, Sore Lungs, Chest Cold, Backache, Lumbago, Diphtheria, all Stiff Joints. It is penetrating, soothing and healing, and for Old Sores, Bruises or Wounds, Felons, External Tumors, Cancers, Boils, Corns or Bunions Caustic Balsam has no equal. It removes the soreness and strengthens the muscles—in fact aids all troubles where an external application is necessary. We would distinctly say to all who buy it that it does not contain a particle of poisonous substance, and therefore no harm can possibly result from its use.

THIS GREAT REMEDY literally works wonders! It removes bunches on horses and other livestock, thereby increasing the value of the animal fully 50 percent. A successful treatment for Curb, Splint, Sweney, Capped Hock, Strained Tendons, Founder, Windpuffs, all Skin Diseases or Parasites, Thrush, Diphtheria, Pink Eye, and Lameness from Spavin, Ringbone, and other Bony Tumors; also all obstructions in circulation, and imparts new life and vigor. It is a peerless remedy for all Throat and Bronchial Troubles.

WHY! Because Caustic Balsam can be applied by anyone with safety, will do its work well and in no way injure the horse, while other blisters need daily attention and care and then are liable to leave a blemish.

If you have a lame or unsound horse, YOU CAN WELL AFFORD TO TRY A REMEDY THAT IS SO HIGHLY RECOMMENDED.

Information on special cases freely given on request.

It is FAR SUPERIOR, MORE ECONOMICAL, and a PERFECTLY SAFE, RELIABLE and PROMPT Remedy to use as compared with any other remedy used for like purposes.

The demand is produced strictly by its merits.

**IT SUPERSEDES ALL CAUTERY OR FIRING
IMPOSSIBLE TO PRODUCE ANY SCAR OR BLEMISH**

IT IS THE SAFEST AND BEST BLISTER



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