

MICHIGAN FARMER

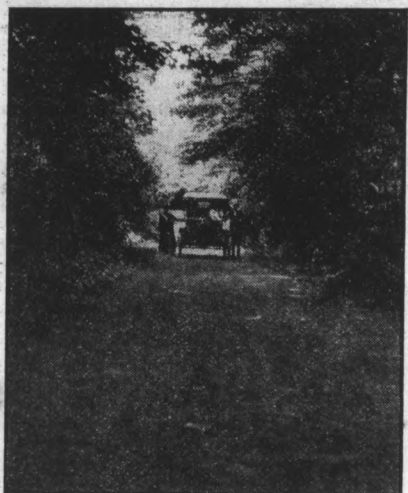
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We Spent Several Days Just Looking Around.

FOR many days we traveled here and there throughout the northeastern counties of the state just to get a general look at her farms, towns, people and the stretches of undeveloped territory.

One can safely prophesy that "greater things" are in store for Michigan agriculture. These unfenced and seemingly boundless fields of cut-over lands and the wide possibilities yet remaining for more intensive farming, insure her a future of agricultural achievement that will be out of all proportion to her present remarkable rural prosperity. The wide range of soils, the favorable climatic conditions and the general excellence of her nearby markets multiply the opportunities for successful general farming and give rare advantages for specialized agriculture of a high order. It is not the purpose of this writing, however, to speculate along these lines, but merely to cite the reader to some facts and figures concerning this district from available records, observations and a general study of agriculture in the state running over a period of nearly twenty years.

Communities Difficult to Compare.

Two reasons prompt us to give publicity to items of general interest on Northeastern Michigan: Large numbers of farm owners, tenants and farm laborers in the southern part of the state are seeking unprejudiced information of the farming advantages of this district. And secondly, there has grown up a general misunderstanding

A Land of Promise

Not Over One-Half of the Good Soil of Northeastern Michigan Has Been Brought Under the Plow. But Settlers are Coming Fast, and the Expansion of Agriculture During the Next Decade Will Be the Big Feature in the State's Development.

of the types of soil prevailing between Saginaw and the Straits.

It is difficult to find a fair basis of comparison in discussing the merits of agricultural communities. The personal equation is such a vital factor in farming that one cannot always judge fairly as to the things he sees, absolutely trustworthy information is sometimes hard to secure, certain conditions do not always mean the same in different localities, and men's judgment—or more correctly speaking, their prejudices—differ so radically that a common ground is often impossible to find.

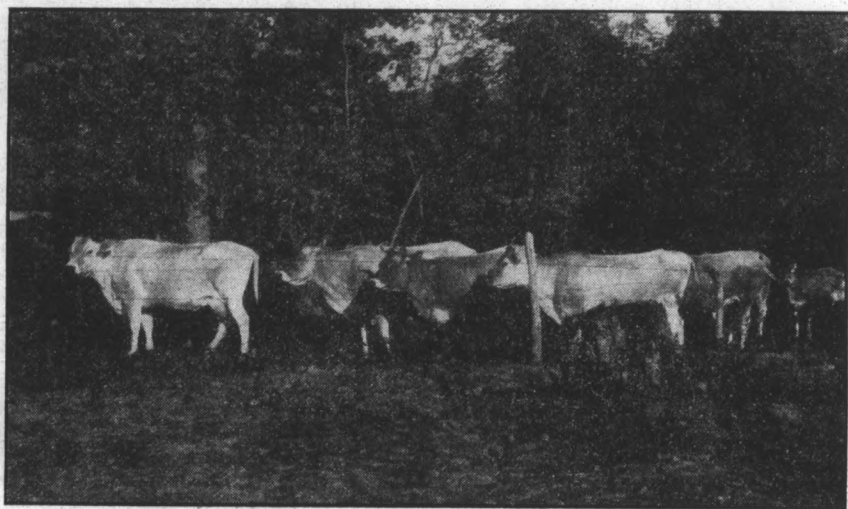
Land Values and Producing Power.

It would seem, however, that a satisfactory comparison between this sec-

teent counties comprising this section of the state, there was at the time of the taking of the last census 1,043,544 acres of improved farm land. The same authority gives the amount of improved farm land in the state at that time at 12,832,078 acres. The average value given the farm land of the whole state was \$32.48 per acre, exclusive of buildings, and of the section under consideration, \$15.20 per acre.

Where to Invest.

It would appear, then, that the improved farm land of the state had a value of \$416,885,893.44 as appraised by the enumerators, while the value of the land in the northeastern counties would aggregate \$15,861,868.80, or in



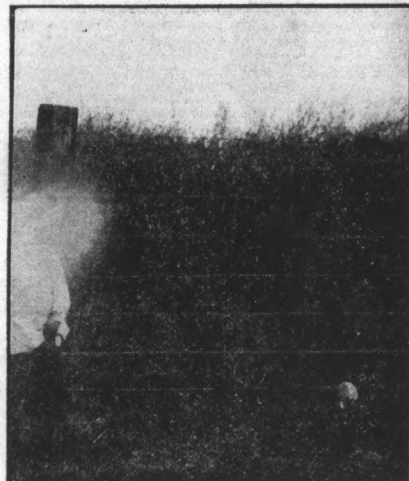
Fertile Lands and Rich Pastures have made Dairying a Leading Industry in Northeastern Michigan. Above is Herd of Ralph Stafford, Otsego Co.

tion and the state as a whole should include a consideration of the current values of the farm land and its producing power. Investment and the probable crop yields are the two factors which largely determine the course of agricultural migration.

Our most reliable source of information on land values and crops produced is to be found in the thirteenth federal decennial census. In the sev-

other words, 3.4 per cent of the total value of used agricultural land in the state at that time was located in these counties.

What the man who is looking for a farm wants to know is the place to make an investment that will give him the maximum producing power. He desires to go where a thousand dollars invested will secure for him a farm the average production of which



A Luxuriant Growth of Sweet Clover in Oscoda County.

will equal or exceed the average production of a thousand dollars worth of land in competing farming communities.

Now as our deductions indicate the value of improved land in northeastern Michigan to be 3.4 per cent of the value of all the improved farm lands of the state, we should expect that 3.4 per cent of the general crops grown in the state would be produced in these counties. Let us therefore compare the production of these counties as given by the above mentioned federal census with the production of the whole state and see what proportion of the 3.4 per cent they were then growing.

The Comparisons Are Flattering.

These comparisons show that these counties produced 5.9 per cent of the corn, 9.4 per cent of the oats, 3.9 per cent of the wheat, 6.9 per cent of the barley, 5.3 per cent of the buckwheat, 5.6 per cent of the rye, 10.4 per cent of the clover seed, 11.2 per cent of dry beans, 32 per cent of the dry peas, 7.8 per cent of the apples, 7 per cent of the plums, 4.5 per cent of the cherries, 5.1 per cent of the pears and 2.5 per cent of the small fruits grown in the state. Besides this section furnished 10.5 per cent of the total number of cattle in the state, 10.1 per cent of the total number of dairy cows, 9.5 per cent of the horses, 6.6 per cent of the swine, 6 per cent of the sheep, 4 per cent of the poultry and 11 per cent of the colonies of bees. Only in

(Continued on page 399).



Alfa-fa Field 100 Miles North of Bay City, 25 Days After First Cutting.—One of the many well-graded Highways through Territory as yet Undeveloped.—Bunch of 75 Hogs on Farm Near Gaylord.

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DETROIT, NOVEMBER 6, 1915

CURRENT COMMENT.

Everywhere economic conditions and business men, as well as statesmen, are speculating on the conditions which will obtain after the European war is over. While these speculations are premature in view of the fact that the probable duration of the war is wholly speculative, the sad and harrowing results of such a conflict while they cannot be realized in their fulness by the people of this country who are so far removed from the scene of their enactment, are not wholly speculative.

Countless thousands will have given up their lives in the conflict, and those dependent upon them will be left destitute. Thousands who survive will be rendered incompetent to earn a livelihood in their accustomed manner. Fortunes great and small will have been dissipated, and established trade will have been entirely ruined or diverted to other channels. New industrial conditions will arise, the significance of which cannot now be foretold or estimated. Already the situation is being studied by many agencies, including the federal trade commission, with a view of preparing the country's business interests with the best available thought and information on the subject.

Farmers, in common with people in all other lines of production, have a vital interest in the problem, but time alone will fully solve the problem. The uncertainty of human calculations has been strikingly illustrated during the past year.

Michigan Farmer readers are generally familiar with the action of the bean growers and dealers in sending a committee to Washington to secure a better definition of the position of the Department of Agriculture relating to the interstate shipment of beans affected with anthracnose. Subsequent to the representations made at Washington by President Orr of the Michigan Bean Jobbers' Association and State Dairy and Food Commissioner Helme, the following definite statement of the Department's position in this matter was issued by the Secretary of Agriculture:

The Department of Agriculture has been requested by many growers and shippers to define its position with respect to the application of the Federal Food and Drugs Act to the transportation in interstate commerce of dry pea or navy, medium, and kidney beans. These requests have been prompted by the action of the Department in recommending seizures of "cull" beans in sacks and of beans in cans which were found upon examination to contain considerable percentages of beans which were wholly

or in part filthy, decomposed or putrid.

Under the Federal Food and Drugs Act, beans, in common with other articles of food, are adulterated if they consist "in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance." "Cull" beans, in the opinion of the Department, usually contain considerable percentages of beans which are wholly or in part filthy or decomposed and are therefore adulterated. The shipment in interstate commerce of such beans for food purposes is prohibited by the Act. No objection is entertained, however, to the interstate shipment of "cull" beans for industrial purposes or for use other than as food for man if they are first treated by grinding or otherwise so as to render them unavailable for use as food for man.

The Department is informed that dry pea or navy, medium, and kidney beans intended for use as food for man are sent customarily by the growers to elevators where the beans are sorted by hand-picking so as to eliminate the beans which are wholly or in part filthy, decomposed, or putrid. It has been represented that in the process of hand-picking nearly all the moldy or musty beans are removed, but that it is not practicable to remove all beans which are slightly decomposed. The Department has not recommended the seizure of dry and mature pea or navy, medium, or kidney beans which have been hand-picked in accordance with good commercial practice.

This ruling should be entirely satisfactory to growers, since it will greatly restrict the market for cull beans and enlarge to a corresponding degree the demand for market grades of this staple Michigan product.

In the interval between the close of this season's farming campaign and the beginning of next season's work many farmers will decide on new locations and will choose new farms upon which to begin or continue their agricultural practice. Our leading article of this week will be instructive and helpful to many, particularly the class of beginners with limited capital for investment. It will point out the essentials which should be looked for in the purchase of new land which has not been improved for agricultural purposes.

Where farms are to be purchased in the older agricultural sections of the state, other considerations should enter into the decision which may profitably be briefly touched upon in this connection. In the purchase of a farm an unusually desirable house, barn, outbuildings or fences may add to the cost of the land out of proportion to the additional opportunity offered for making a high labor income. The buyer should in all cases of this kind carefully consider whether he can afford to pay the price for these luxuries which is represented by the greater valuation of the farm as compared with other farms not possessing these advantages. These things are worth while for any man if he is able to afford them, but they render dividends in pleasure and satisfaction rather than in labor or cash income.

Another question which may well enter into consideration is the fertility of the soil itself as related to the price of the farm. Of course, a soil of maximum fertility and ideal physical condition is most desirable, but generally it will cost much more than a farm lacking in some of these essential requirements, and the question as to whether it will be better to buy only the best land or to buy land in a lower state of fertility and build it up by scientifically correct methods is a question which the prospective purchaser may well debate. School facilities are an important consideration with a large class of purchasers, and this factor should not be overlooked by any. The general character of the neighborhood in relation to its social as well as its industrial life is also a factor worthy of consideration.

There are a great many other factors which should also be considered but the man who begins to make a careful analysis of the situation will be likely to reach a wise decision

when viewed from the light of individual conditions and requirements.

Agricultural Courses in High Schools.

A recent report relating to agricultural courses in high schools in Michigan shows that such courses have been added to the curriculum of seven high schools during the current year, making in all a total of forty-nine high schools in Michigan having regular four-year agricultural courses.

While an important phase of this work is the training of teachers qualified to teach agriculture in the primary schools of the state, yet the work has now been in progress for a sufficient length of time so that some idea may be gained of the general interest taken in it by the high school boys of the state and the result as measured by this influence on their attitude toward agriculture as an occupation.

In an inquiry instituted in five high schools which have been engaged in this work for the longest period of time shows that 50 to 92 per cent of the boys in these schools elect the agricultural course. Fifteen boys in these five schools who did not intend to be farmers have changed their minds and will make farming their life business. In some cases these boys have reached a decision to specialize in some department of agriculture which they will make their chief business. This inquiry also shows that the instruction in agriculture in the high schools has had the effect of creating a respect for the farm and the farmer among the students generally which did not before exist.

The local interest in the work is manifested by the fact that some 16 of the high schools having agricultural courses were employed for the entire year with a view of having them supervise home projects in which the students will engage during the vacation period, to conduct demonstrations and similar work which will have a beneficial influence upon the agriculture of the entire community in which the school is located.

From a small beginning the teaching of agriculture in the high schools of our state has gained very presentable proportions, and we believe the time is not far distant when vocational training of this kind will be found in practically every high school in the state. The high school has been aptly termed "the people's college," and as such should offer to the young people of the country the opportunity for vocational training which the college offers to those who desire to follow the so-called professions.

Reference has been previously made in these columns to the situation obtaining in Illinois with regard to the eradication of the foot-and-mouth disease. During the progress of the litigation which delayed the final eradication of the foot-and-mouth disease in Illinois, public sentiment as expressed by the stockmen of the state, the live stock organizations holding important shows in the state, the business men, bankers and educators, is a matter for general congratulation, inasmuch as it has strongly favored prompt action in the eradication of the disease.

Both the National Dairy Show and the International Live Stock Exposition have been called off on account of the situation, and even the corn growers' and stockmen's convention and the two weeks' course in agriculture announced by the college of agriculture of the University of Illinois have been cancelled to avoid any danger of spreading the infection of foot-and-mouth disease.

In the meantime the courts have dissolved the injunction forbidding the killing of cattle, and the work of erad-

ication will doubtless be rapidly carried to a successful finish. An aroused public sentiment is a wholesome influence in a situation of this kind.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—Fighting has been active in the Balkan theatre of war during the past week. The Austro-German armies continue to be successful in their drive to the south, having already appeared before Kraguyevatz where the Serbian arsenal is situated. The Bulgarians have captured Pirot, the key to Nish, which was occupied a short while ago as the capital of the Serbian government and is an important railroad center. The Austrians are also attacking the Montenegrins along the Drina river to prevent flanking attacks by the well equipped soldiers of that little country. The Anglo-French troops are firmly establishing themselves at the southern end of the Nish railway and have occupied, in Bulgaria, the hills surrounding Strumitsa. The Allied fleets have again bombarded the Bulgarian towns on the Aegean Sea. A Russian army is reported to be on its way across Rumania to oppose the Bulgarians, and a Russian fleet has already attacked Bulgarian towns on the Black Sea. Along the Russian front, conditions are more favorable to the Czar's forces. While the Germans have recovered some territory which the Russians recently took from them along the Styr river, the Slavs are on the offensive in Galicia, and in the northern district the Germans have apparently failed in their effort to take Riga or Dvinsk or even to improve their position. Snow is reported to be falling in that region and the movement of heavy artillery is becoming more difficult. In the western theatre the Germans made gains against the French by a sudden drive along a five-mile front between Neuville and Souchez. About 1,200 yards of French trenches were captured. The battle is still in progress. In the Champagne district four successive German attacks were repulsed by the French and violent artillery engagements in the Vosges are continuing. The Italians are on the offensive while the Allied forces are renewing their activities along the Dardanelles. A new French coalition cabinet has been established with Aristide Briand as premier. Continuous reports of a shortage of food in Germany and Austria are being received.

The struggle in Mexico is now centered about the little border town of Agua Prieta just across from Douglas, New Mexico. Here a garrison of Carranza soldiers are awaiting the attack of Villa and his army, who have just crossed the mountains from the east where they were defeated. The battle will determine the control of the state of Sonora. United States soldiers are entrenched at Douglas to guard against the possibility of damage being done to the residents of that city.

The Russian minister of finance has been authorized by the imperial government to transact on foreign markets credit operations amounting to \$2,750,000,000. The financial system of the government is being reformed.

National.

Several amendments to the Federal Reserve Banking act are being considered by members of the Federal reserve board for submitting to the coming session of Congress.

From unofficial reports it appears that the government at Washington declines in any way to interfere in the internal affairs of China. The present sentiment in that country from reports seems to be more favorable toward the establishment of a monarchical form of government. European countries now at war are anxious for China to remain under her present form of government until the war is over.

The new submarine M-1 of the United States navy, was given a thorough test in Cape Cod bay, and notwithstanding she is the largest submarine yet built in this country, the tests were entirely satisfactory.

The state teachers' convention was held at Saginaw last week. The teachers organization has become so large that it is difficult to adequately care for them in most cities, for which reason a committee was appointed to investigate the possibilities of re-organizing the association.

On January 27-29 the foreign trade league will hold its convention in New Orleans to consider preparations for commercial competition with European countries which is certain to follow the present war. The United States department of commerce will ask Congress at the next session to increase its power so that world-wide campaign in the interest of American made goods can be carried on.

A LAND OF PROMISE.

(Continued from first page).

the instance of small fruit do the counties fall below the quota of 3.4 per cent.

From the point of investment in land, it would seem therefore that land values in northeastern Michigan are low, and that those seeking opportunities for investment in farm homes ought, therefore, to stand a good chance to buy advantageously there.

Settle the Good Land First.

Much has been said and done to promote the agricultural use of the lighter soils to be found in certain sections of the northern counties. We cannot commend too highly investigators who are making an honest effort to discover the greatest agricultural values of these lighter soils, and we are hoping that good will result from the effort; but it appears to us that the problem of greatest importance just now is to reduce the thousands of acres of good cut-over lands in this section of the state to improved farms. After this has been done then will arrive the proper time for changing the "plains" and other light soils to farm lands if such a change is thought advisable.

To give us a comprehensive idea of the comparative areas of heavy and light soils to be found in these counties, a careful study of surface formations of this section of the state as compiled by the state geologist of Michigan in co-operation with the United States geological director and members of the Michigan geological survey, was made. The results put in figures show that the proportion of natural good agricultural soil amounts to about 57 per cent of the total area; in other words, such an examination indicates that there are practically 3,571,200 acres of good tillable land in the northeastern counties, and 2,718,720 acres of lighter soils adapted largely to grazing purposes. This comparison becomes the more pronounced when it is observed that in six counties south of a line running across the state east and west through the city of Saginaw show an average of only 49 per cent of good agricultural land of the same character as that in the northeastern counties.

A Different Viewpoint.

Persons who have traveled through this district extensively but who have not gotten far from the railroad lines, may question these statements, but a little information that seems not to be generally known will show why they have gotten an erroneous opinion of the character of this soil. The Michigan Central Railway from Bay City to Cheboygan covers a line of 166 miles; of this line 132 miles is laid upon light soil and 34 miles upon heavier land. Now, it would be possible to construct a railway connecting these two points and not increase the mileage of track, so that the line would pass through only 28 miles of the lighter soil and 138 miles of the heavier land. Originally this road was laid out to market forest products which purpose moved the men who established the line to adopt its present course instead of going through heavier lands where it would be more difficult and expensive to get the pine logs to the line and to grade for the tracks.

Another example is that of the Detroit & Mackinaw line from Bay City to Alpena. Of the 124 miles of track between these two cities, 99 miles rest on the lighter soils along the lake shore, while 25 miles is over the heavier type of soil. This road could be built four miles shorter than the present route but having 96 miles on heavy soil and 24 miles on light soil. And still another is the Au Sable & Northwestern Railway running into the heart of this territory. The road is 51 miles long and has 39 miles on light soil and 12 miles on heavy soil. The moving of this railroad a mile

or so out of its present course would reverse the amount of mileage on the different types of soil so that only 12 miles would be on the lighter land and 39 miles upon the heavier.

If the travelers could ride over some of the wagon roads connecting the railways, their opinions of the country would change. Already the automobile has done much to correct wrong impressions, and people in other sections are coming to understand that when the agricultural possibilities of the state have been thoroughly developed these counties will contribute its full share toward the general prosperity of the commonwealth.

Waste Land Grows Good Pasture.

The figures given above indicate better than description the wide character of the crops produced and the animals kept upon the farms of this region. Space does not permit general comment upon the conditions of production except a single one. In a former paragraph were mentioned the so-called "plains" and light soils, and it was indicated that men are experimenting to discover the agricultural value of these lands. But at present they have a real value in connection with the production of food for the nation, for few better grazing areas can be found than these very "plains." They furnish valuable grass from early spring to late fall and animals feeding upon this forage are maintained in a high condition of flesh even when no supplementary feeding is provided. Not only this, but these lands are usually well watered, thus completing the requirements of good grazing soil. Inasmuch as grazing land is becoming scarce with the breaking up of western ranges, this land promises not to be a waste but an actual asset to the state's future agricultural operations. On August 19 twenty cars of cattle were delivered in Detroit from points north of Bay City. These animals were marketed directly from the wild pastures in some instances.

Transportation and Marketing Facilities.

The other question that every careful man will investigate is the problem of getting the farm products to market. A study of the map of the United States in connection with this territory will reveal advantages that are accorded few other localities. It lies within easy reach of the large manufacturing and industrial centers of the country, and has several open ports on Lake Huron and Saginaw Bay which are a part of the greatest commercial waterway in the world. Then, too, notwithstanding that large areas of land are not yet developed into farms, the railroad facilities are unusually good. These roads were constructed to remove the valuable forest products of the region, and they remain to provide an outlet for the products of the farm. Besides, in every county wagon roads are being generally improved and some very fine stretches of good gravel and stone roads have been completed. These facilities combine to offer the farmers of this section unusual marketing advantages for a territory that is only partly developed agriculturally.

A Word of Caution.

It is apparent from what has been mentioned in regard to the types of soil over which the railroad lines are laid, that the land varies in character in short distances. This is true and because of it we wish to emphasize the importance of those seeking land in these counties—or in any other counties of Michigan for that matter—to make a very careful examination of every portion of the land under consideration before closing a sale. According to geologists, our soil here was formed largely through the action of great ice fields, which left the surface rocks badly mixed up. While this is a handicap in the selection of land, in that one is never able to judge with certainty what one farm will do



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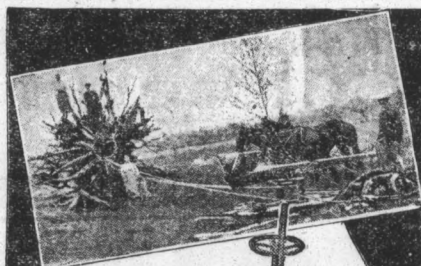
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by noting the crops on an adjoining farm, yet the wide range of soils is partly responsible for the great number of agricultural crops that can be grown to perfection in the state.

If a purchaser is not well informed on farm and soil values, he should get someone who is. A few dollars spent in paying the expenses of such a man will not only insure one against the caprice of unprincipled land sharks but will also give one returns that will net a hundred fold and more. There are both good and poor soils in all the counties. If you are paying the ruling prices for the good soil that is the kind you should get. Notwithstanding the fact that there are reliable real estate men doing business here as elsewhere who are anxious to bring in men who will stay and prosper, a stranger does not always know when he meets this kind, so must constantly be on the defensive.

SELECT THE SEED BEANS NOW.

Unusual weather conditions which prevailed in Michigan this year were so favorable to the development of anthracnose and bacterial bean blight that these fungous diseases have affected to a more than ordinary degree. There are, however, some fields which are fairly free from these diseases, and wherever such exist in any community, bean growers will be wise in securing their seed for next year's planting from such a crop. But in case such seed cannot be secured in the immediate locality, it will be far wiser to secure good beans grown at a distance if this is at all possible, even at a considerably advanced price, than to plant badly infected stock.

A great deal has been said and written with regard to northern grown seed. Some of the seed grown in northern Michigan has given very good results and has produced crops comparatively free from disease. On the other hand, some northern Michigan beans have been quite badly infected by these diseases, and there is much uncertainty in the buying of northern grown seed if from an unknown source.

This matter of clean seed is a proposition in which bean handlers as well as bean growers are vitally interested, and there should be the fullest co-operation between dealers and growers in the introduction of the cleanest possible seed into every bean growing community, provided no comparatively disease-free crops are found in the neighborhood.

Another precaution which it will pay to take on any farm where beans are grown as a cash crop is to select at least sufficient beans before threshing which are free from disease to plant a seed breeding plot. This can be done by carefully examining the pods, as the disease makes its way into the bean through the pod, and if the pods are selected which are free from spots, a very clean sample of seed can be secured.

In view of the unusual prevalence of this fungous disease this year, care should be exercised to avoid infecting the soil intended for next year's crop, and manure made from the feeding of these bean pods of this year's crop should not be applied to such land. If next year's crop is planted on clean soil preferably a clover sod which has not been in beans for some years and good clean seed secured, there is every likelihood that next year's crop may be normal in quality and a considerable loss thus avoided.

The unfavorable experience of this year will undoubtedly cause many farmers to substitute some other crop for beans next season, in which case a reduced acreage will make the crop more profitable than in ordinary years. A better plan would be to exercise every precaution as above indicated to fortify the crop against damage

from these diseases, and grow the usual acreage where beans are made an important factor in the crop rotation.

LILLIE FARMSTEAD NOTES.

Splendid weather! It makes one almost forget the exasperating weather conditions earlier in the season. There has been something doing in this section these fine days. Silage cutters on every hand. This is a section of silos. Nearly every farmer has one, and many have two. And it is a good investment this kind of a year. What would be done with the frosted corn if we had no silos? I am surprised however, to see so much ripened corn. Many are husking and several fields that I have noticed in particular the ears are good and sound. I did not expect so large a per cent of sound corn. It is remarkable, when one takes into consideration the cold season, late fall and killing frost early in October.

No wheat was sown early, as the ground was too wet. But this October sown wheat is coming up and starting nicely. It ought to be much larger to go into winter, but if this weather continues for only a few days it will be in the ripe for winter. The acreage is considerably less than last fall. This means that a larger area must be devoted to spring crops than usual, and all the fall plowing should be done that it is possible to do so as to make the work next spring as light as possible.

We still have another day's work to finish filling the silos. But potato digging is well started. The potatoes planted early were a very fair crop but rotted badly. We have sprinkled them liberally with hydrated lime. It is claimed by some people that lime will prevent their rotting any more. This I do not know, having had no experience, but it will do no harm, costs little to try and is worth knowing something about.

The potatoes planted July 20, after harvesting the peas, are a poor crop, but they are sound and free from scab. Besides, they cook very nicely much better than one would think from being planted so late. I shall save the most of these for seed. How many know that late planted potatoes even real late planted, those that are so late they do not grow to normal size, make the best seed potatoes? They keep the best for late planting, seem to have the most vigor and seem to be better seed in every way than early planted potatoes that are fully ripened before being harvested.

This is my first experience in planting so late as after peas are harvested, and the season has been very unfavorable, yet with all the discouragements the crop had it is worth harvesting and it is good enough so I shall try the same thing again. I believe with an average normal season a profitable crop can be secured.

The frost cut the soy beans in the sweet corn very severely. They were quite badly blown and beat down to the ground by heavy wind and rain storms, and after being frozen they seemed to wilt down much more. The result is that the corn harvester did not get anywhere near all of them. Many were cut by the machine but could not be picked up and elevated and bound with the corn. In one field this matters little as we have plenty of brood sows and fall pigs to pick them up. But on the other field the only value I will get is their manurial value unless I fence the field temporarily and let the sheep gather them. If this fair weather should continue it might be wise to do this. Possibly by the time we got up the temporary fence it will snow or freeze, so we would get but little. We have sufficient idle wire fence and it will cost but little to try.

COLON C. LILLIE.

Fall Work In the Orchard

AFTER the harvesting of the fruit has been done the grower often feels that he is at the end of an accomplishment and therefore needs time for relaxation. Regardless of what the results may be he is right in feeling that he has accomplished something, for he has come to the end of a work that has been a year in preparation. The progressive fruit grower, however, forgoes the period of relaxation really due him and starts immediately in getting the orchard in shape for next season's crop.

The Time to Transplant Trees.

There are many things that a grower can do after harvesting that will greatly assist him in the next year's work, and a great many of these things can be done to better advantage in the fall than at any other time. One of these things is the transplanting of trees. One of the common mistakes in setting an orchard is putting the trees too close together, and when the orchard becomes six and eight years of age, the grower begins to realize it, and he is in a quandary to know what to do. He doesn't care to cut down the trees and often believes that it is impossible to transplant them. However, trees of this age, especially apples and pears, can be readily transplanted if the work is properly done.

A convenient way to transplant trees of this age is to prepare the holes for them in their new location in advance. These holes should be dug deep enough so that the trees will set a little lower than they were. If the soil is hard, it should be loosened up a little bit and if well rotted manure is available a little of it should be put in each hole, care being used to mix it thoroughly with the soil. The tops of the trees should be pruned quite severely, but care should be taken not to cut out too many of the smaller branches which contain the leaf buds. The best way to prune the tree is to cut back the leaders and then thin out the brush in the rest of the tree.

Pruning for Transplanting.

In digging the tree, as much of the root system as possible should be taken up with it, and if possible the earth should be left adhering to the roots. This, however, adds considerable weight to the tree and makes it more difficult to carry it to its new place. The chief thing necessary in digging is to leave enough of the root system so that when the tree is planted in its new place it will have sufficient bottom to anchor it fairly well. Of course, the greater the proportion of the root system that is left in the ground, the more severe the pruning of the top will have to be, as it is necessary to maintain a balance between the roots and the top in order to get the tree to start well in the spring. If the top is too large, the tree will leaf out in spring but will die shortly afterward, after making a feeble attempt at growth. This is because the leaf surface uses up more moisture and plant food than the roots can provide. It is better for good results to have the excess, if any, in favor of the roots. When putting the tree in its new place, care should be taken to firm the earth thoroughly around the roots. Even the most thorough firming is usually not sufficient as there is very likely to be air pockets left when transplanting trees with large root systems. The great advantage in fall planting is that in addition to the best one can do in packing the soil around the roots, the melting snows in spring have a most excellent effect in this way.

Banking the Trees.

One of the chief precautions necessary in the transplanting of trees in the fall is the banking of the trees. The trees in their new place are left

without their usual amount of anchorage against the winter winds. A banking of earth about a foot high around the base of the tree will do much toward holding the tree firm. It is also advisable to go through the permanent orchard to see if any of the trees have shaken loose during the season. If so, they should also be banked. The openings around a loose tree are receptacles for water, the freezing and thawing of which will often cause serious injury to the crown of the tree. Trees in loose soils and in exposed locations should especially be given attention in this respect.

Another thing which, if neglected in the fall, may be the cause of serious injury to the tree is the digging away of the grass around the base of the tree. This grass, if left, affords a splendid harboring place for field mice. The writer has seen several thousand trees in an orchard ruined from the work of these mice. Had the grass around the trees been hoed away in the fall, the mice would have had no harboring place, and would not have taken refuge in the orchard. When the hoeing is done it is well to rake back sufficient earth toward the base of the tree so as not to leave a hollow there.

The Care of Broken Limbs.

Another thing which can be done to advantage in fall is to cut off or brace up the limbs which have broken down from the weight of the fruit, or during the process of harvesting. The cutting off of a large broken limb usually so unbalances the tree that it is never a good looking tree afterward. It also takes away a large amount of bearing surface which could be used by the tree to advantage. If the bark on the under side of the break is not seriously injured, the limb can be raised back into place and braced. Usually a long bolt is best for this purpose. In bolting back a limb it is advisable to counter-sink the holes so that the heads of the bolts will be slightly below the surface of the bark. The advantage of doing this work in the fall is that the exposed surfaces of the break will to a great extent be protected from the weather. The less weathered these surfaces are, the greater the possibility of a good healing over of the wound.

Clean Out the Rubbish.

Before winter sets in, all the brush and rubbish which may have accumulated in the orchard during the season should be burned. Brush piles are excellent hibernating places for a large number of insects which attack fruit trees. They are also harboring places for field mice and rabbits.

The things mentioned herein may seem trivial to many orchardists, but to one who wishes to develop his orchard to the greatest efficiency they are of great importance. The neglect of doing this fall work is very often the cause of serious trouble in the orchard later on. Much of orchard work is done without immediate results, so much of our work of prevention should be done to prevent trouble in future years.

PROTECTING FRUIT TREES.

In protecting young fruit trees from rabbits and mice, the writer uses a "collar" made of roofing paper. Roofing paper is 27 inches wide and I find that this height is sufficient to keep the rabbits from reaching the tree above the "collar." The "collar" should fit tightly against the ground to prevent mice from working under and getting inside. Screen-wire of the proper width can be used in the same manner, but is more costly. Both of these materials can be used for several years, but my experience is that the paper "collar" will outlast the one made of wire cloth. T. Z. RICHEY.



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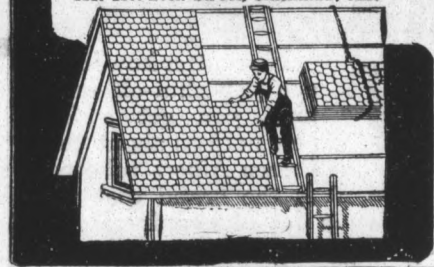
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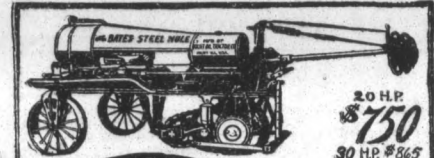
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Dehorning Cattle

THE question is often asked, "When is the best time to dehorn?" It may be said that the work should be done either in the early spring, before the flies and other insects become troublesome, also the warm weather, or else late in the fall after these pests have disappeared. Of course, it should not be too late in the season, as very cold weather is injurious and may cause a cold in the head which will greatly retard the healing process.

The effects of the operation of dehorning vary considerably. We have known large herds of dairy cows to be dehorned and none of the animals fell off in their milk flow for more than a couple of milkings. Again, we have known instances where a majority of the animals would be pretty dull for several days, and, of course, it is true that occasionally an animal will be lost. But this usually happens when a cow is in poor vitality, or when the work is done at an unfavorable season, hence such losses are largely avoidable. The exact loss of flesh or milk due to the excitement, loss of blood and pain cannot be estimated, as very much depends upon the skill of the operator, and perhaps more still upon the temperament of the animal operated upon; nervous, irritable animals suffer a greater setback than quiet, sluggish ones.

Some animals bleed severely. To prevent this, wind a piece of strong twine firmly around the head just below the horn bases so as not to interfere with the operation. Then tighten the twine by drawing together the upper and lower strands midway between the horns and fasten with a knot. Twine put on in this manner presses firmly against the large arteries. In a few hours the twine may be removed, when danger from bleeding will have passed. After dehorning the cattle may be turned into the pasture or corral, but they should not be permitted to rub against any hay or straw stacks until the wounds have healed, as chaff in the openings may cause considerable trouble.

Several different kinds of instruments have been invented with a view to accomplishing the operation with as little pain as possible to the animal. The dehorning saw was among the first to appear. This instrument is still used in many cases, but, while it does the work required of it, it will always seem to be unduly cruel. The clipping dehorners are now employed extensively, as they cut the horns off in a fraction of the time required by the saw, and the pain is reduced to the minimum. The saw, as a rule, makes the neater job; occasionally clippers crush the bones, causing a slow healing. Unless the horns are taken off very close they bleed badly and stubs grow. Care should therefore be exercised to do the job thoroughly. The cut should take about one-sixth of an inch of the skin around the base of the horn and should be slanted, with the natural slope of the head.

If one has a great amount of dehorning to do, he should equip himself with a dehorning chute, in which the animals may be driven, one at a time, and the operation be performed with less labor, and in a much shorter space of time.

It is to be hoped that in time less and less dehorning of the kind we have discussed will need to be done and that the dehorning of the future will be more generally done before the horns have grown to be more than tiny buttons on the head of the calf, at which time they are readily and almost painlessly removed by touching with a stick of caustic potash. The action of this agent when properly used is to destroy the life of the horn in its early stage, rendering the treated animal a smooth headed beast.

Dehorning by potash is done before the calf is ten days old or as soon as the embryo horns can be located on the calf's poll. The hair surrounding the horns should be clipped off and the parts moistened with warm water. When using the potash in the stick form it should be wrapped in paper to protect the hand and an exposed end moistened and rubbed gently on the buttons in turn for about five minutes, or until they become sensitive and red, but not to the extent of bleeding. Care must be taken that the dissolved potash does not run down the side of the head, or the skull may be seriously burned and permanently disfigured. The calf should be kept from getting wet for a few days following treatment so that the dissolved potash will not run down. Treated calves should also be kept separately so that they can not lick each other. The calf will suffer some pain for an hour or two, but no other inconvenience is experienced. If the work is carefully done a scab soon forms, healing follows and the spots become covered with hair from the surrounding parts.

Indiana.

W. F. PURDUE.

FEEDERS' PROBLEMS.

Sweet Clover as a Forage Crop for Hogs.

Will some experienced farmer kindly inform me how sweet clover is, compared with rape, as to feed value for hogs, and will five acres of sweet clover pasture as many hogs as five acres of rape sown upon the same kind of soil? When is the best time to sow the clover, how much do you sow to the acre, and how long after the clover is sown until it can be used for pasture? Is sweet clover like other clover in regards to pasturing? Is it good for more than one year until you are ready to re-seed again?

Gd. Traverse Co.

C. L. P.

We have at hand no authoritative data which affords an accurate comparison of the relative value of sweet clover and rape as a forage for hogs. While sweet clover has been grown to a limited extent as a forage crop in this state, and is gaining favor in many localities, it is doubtful, in the writer's opinion, if it would compare favorably with rape as a green forage for hogs.

Rape is an exceptionally valuable forage plant for hogs, being counted superior by many hog growers, to alfalfa or clover. Of the legumes alfalfa is everywhere considered to be the best green forage crop for hogs. If not pastured too heavily, and the residue not eaten by the hogs, is cut for hay at suitable times, it will produce an abundance of succulent pasture for the hogs from early spring until late fall, of the highest nutritive value.

Sweet clover, in the writer's opinion, would not be so well adapted to this use, for the reason that it is a biennial and will not be available for pasture until some weeks after it is sown the first year, while the succeeding year it makes a very rapid and rank growth which it would be difficult to keep down by pasturing so that it would produce a continuous supply of tender and succulent feed.

Sweet clover is generally sown in the early spring at the rate of ten to fifteen pounds per acre on a firm seed bed. Under favorable conditions it will make a rapid growth, although it is sometimes difficult to get a good stand, owing to uneven germination of the seed. Its most important place in our agriculture would seem to be for use on worn lands which have been depleted of their humus, where it can be very advantageously used as a cover crop for the purpose of adding humus and nitrogen to the soil. On land which will readily grow clover or alfalfa, these legumes should be used as a main dependence and sweet clover sown experimentally if at all.

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Finding the Boarder Cows

DO you keep paying cows? Many farmers think they do, but figures collected with reference to this matter show that "one-third of the cows kept for their milk do not pay for their cost of feeding, and nearly another third just about pay for their keep. It is beyond dispute that a large number of farmers are feeding cows that are kept at either an actual loss or so small a profit as to give very little return. This is due to a lack of information as to the quantity and quality of milk produced by individual cows, and the cost of production.

In a recent community test it was found that many of the individual cows were not returning the cost of the feed. The average yield of milk ranged anywhere from 13.2 to 23.4 pounds per day, while the average yield of butter ranged from 0.7 to 1.33 pounds per day. How did the farmers know? They simply used a Babcock tester and a pair of scales. The test revealed the fact that the herd giving the largest flow of milk was producing 80 per cent more than the one giving the smallest flow, while the herd producing the most butter was giving 90 per cent more than the one yielding the smallest amount of butter. One of the first things our dairy farmers need to do is to make a closer study of the individual animals of their herds and to reject those found unprofitable.

What the Tests Showed.

A test was recently made of the herds of six patrons furnishing milk to a creamery. These patrons had never before kept any record of the milk production of their cows. The individual cows of four herds were tested through one entire period of lactation. At farm "A" the annual yield of milk ranged from 3,792 pounds to 6,203 pounds, and of butter-fat from 147 to 296 pounds. At farm "B" the milk yield ranged from 5,193 to 7,887 pounds, and the butter-fat from 245 to 312 pounds. At farm "C" the milk yield ranged from 4,411 to 8,132 pounds, and the butter-fat from 222 to 336 pounds. At farm "D" the range of milk was from 4,847 to 6,570 pounds, and of butter-fat from 223 to 300 pounds. At farm "A" there were three cows which did not produce milk enough to pay for the feed, and the owner was obliged to give his time and labor gratis. The entire herd of 12 cows gave a profit of only \$75; \$50 of this amount was from three of the cows, while the combined profit from the other nine was only \$25. The 12 cows on farm "C" earned a total profit of \$228, instead of \$75 as on farm "A," but even on this farm there was considerable difference in the cows. The value of the product from the poorest cow was \$37.96, and from the best \$60.72. The best cow gave a profit of about \$31, while the poorest gave a profit of only \$8.

Individual Production.

A record for one year of a herd of 25 cows shows that the annual yield of milk varied in the case of different individuals anywhere from 3,141 to 8,558 pounds, and the annual yield of butter-fat from 165 to 509 pounds. This herd included four registered Jerseys, three Guernseys, four Ayrshires, and the balance were mostly Jersey and Guernsey grades, perhaps better than the average run of farm cows. The best cow gave a profit of \$42.82, above the cost of feed, while the poorest cow gave a loss of \$4.09. The average profit for the whole herd was \$15.50 per cow. Eleven of the 25 cows did not come up to the average, and eight of these gave a profit of less than \$10. Two of the cows were kept at an actual loss, while nearly one-half of them materially reduced the average of the whole herd.

The facts brought out in these studies strongly emphasize the correct-

ness of the old claim that but little profit is derived from a cow that fails to produce at least 5,000 pounds of milk per year, particularly if the milk is sold at a low price. There is also, little profit in a cow that does not produce 200 pounds of butter in a year. No stronger argument in favor of individual and collective testing, and the selection of dairy cows is needed, than such figures as above given.

The Cost of Production.

The average cost of keeping a cow a year has been variously estimated by various authorities in different parts of the country at from \$30 to \$50. If a cow gives just sufficient return to pay for the cost of her keeping, she merely supplies a home market for a part of the farmer's crops, and the value of the manure may be taken to offset the labor of caring for her. As a matter of fact, the manure too often offsets both the labor and the profit. But while this item must be taken into account in estimating the profit, the farmer can not afford to keep cows for their manure. Every dollar's worth of product above that required to cover the cost of keep is just so much clear gain, and the value of a cow increases rapidly with her ability to widen this difference between cost and value of product. Nearly the same capital and practically the same amount of labor are required, whether the return from the herd is large or small. A good small herd is much more profitable than a large poor one.

New York. EARL W. GAGE.

RUTABAGA TOPS FOR SILAGE.

Kindly give me information regarding rutabaga tops for silage. Will they keep if put in on top of corn silage? What is the best method of putting them in the silo, and would the value be as good as beet tops? G. A. R.

Rutabaga tops will make a splendid silage, every bit as valuable as beet tops. Why not? They will keep put in on top of corn silage. Save them, they are worth it.

If you had a slat carrier ensilage cutter you could take out the knives and run them right up. It will not be necessary to cut them. Or you can rig up a half-barrel bucket and elevate by means of a gin pole, as I suggested for beet tops in a recent issue.

SPROUTED WHEAT FOR STOCK FEED.

I have 300 bushels of wheat that got badly sprouted before I could get it in, and I am afraid it will not sell well. I have seven heifers that will freshen about April, which with six cows will give me 13 cows next summer. Do you think it will pay to feed this wheat to them? The other feed will be mixed clover hay and about 15 feet of ensilage in a 12-ft. silo. The wheat runs about 40 quarts to the bushel. T. H. S.

This sprouted wheat will not make good bread; the dough will not rise and be light and airy, it will also have a sweetish flavor. But the actual food value of the wheat is but little, if any, impaired. Many experiments have been made where hogs got the full feeding value of sprouted wheat. It is said to be worth, bushel for bushel, as much as corn for feeding hogs, and it is worth just as much for feeding cows. It is good feed. Better results will be obtained if it is ground before feeding, this is especially true with cattle.

The value of wheat for human food is usually greater than for the lower animals. At the present price of wheat, one could not afford to use it for cow feed, because he could sell it and buy cow feed cheaper, but in this case don't let the miller cut the price too much because it is sprouted. It has practically its full feeding value. Grind it and feed it.



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THERE are special advantages in using a good cream separator during the fall and winter months. The milk from cows long in lactation is hardest to cream, and likewise hardest to separate with an inferior separator.

Moreover, cream and butter prices are highest, so that the waste of gravity setting or a poor separator counts for most.

Then there's the sweet, warm skim-milk for stock feeding, alone worth the cost of a separator in cold weather.

There is surely no reason to delay the purchase of a separator or to continue the use of an inferior one.

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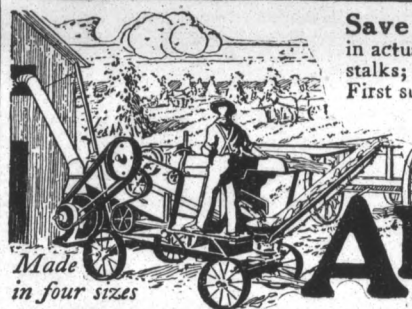
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The Farmer's Interest In the War

By FLOYD W. ROBISON

IT is impossible that anyone throughout the whole country has not been very greatly interested and affected in some way by the tragedy of the nations on European soil during the past year. But aside from our personal preference in the matter and individual sympathies, the farmers as a class have given little thought in the matter, principally because they have not been aware of any appreciable effect of the war upon their business. Other industries of the country have been brought into direct contact with the war. In some instances business has been entirely ruined, due to the closing of a market or to inability to secure the raw materials from which their products have been manufactured. This has not been the case with the farmer and he has been perhaps less appreciative of the effects of this war upon other people's business than he would have been if it had been impressed upon him that to a degree his own business was being affected. He has been aware that the war has stimulated certain markets which have worked to his advantage.

Wheat Held Steady by the War.

For instance, there seems little doubt that the price at which wheat has been maintained during the past year as well as the price at which it is now held is in a measure to be placed with the war in Europe. Of course, there was probably no greater quantity of wheat consumed in the world than previous to the war but in those centers where this life and death struggle is going on so relentlessly, production has in a large degree stopped and consequently the enormous resources of this country in an agricultural way have been drawn upon to make up for this deficit. Not only this, but many of the competitors of this country are at the present time at a decided disadvantage, due to the war.

Russian Grain Cannot be Marketed.

We are all familiar with the fact that the immense grain fields of Russia, which have been heretofore considered the granary of Europe, are now completely closed to the world through the entrance of the Turkish government into the war, which controls the Dardanelles. The only output for the grain of Russia now is over the Trans-Siberia railroad, to Japan and China, and this being but a one track system the output is exceedingly limited. That the Dardanelles holds the key to the grain situation has been shown by the marked fall in the price of grain a short time ago when it was thought that the Dardanelles would be passed by the Allies in time to permit the fall shipments of grain, particularly wheat. In other commodities satisfactory prices have also been maintained.

Meat Prices Firm.

Meats, which perhaps do not reflect the effect of the European conflict so directly, have been fairly firm in the maintenance of price and we understand that the packers in the large centers are filling enormous contracts in meats for consumption on the battle field.

Horses in Demand.

Another market which has grown rapidly since the beginning of the war has been the marketing of live stock, particularly horses. The demand for horses for cavalry and artillery service has been very great and little difficulty has been encountered by farmers in disposing of any suitable stock which they have on hand for the purposes above mentioned.

These things have been noticed and the maintenance of a fair market price for certain farm commodities has been very gratifying to the north-

ern farmer and he particularly has not complained of the war conditions. There is a debit side to the account, however, which, while very noticeable to the farmer in the south, has been a little more elusive but just as far-reaching in the case of the farmer in the northern states.

Declaring Cotton Contraband Hits the South Hard.

Of course, with the declaration that cotton was absolutely contraband it became impossible to forward supplies of this commodity to the countries in central Europe and consequently the market for cotton has been a very sluggish one for over a year. As this product is one of the principal commodities of many of the southern farmers we find the people south of the Ohio river to be quite fully awake to some of the dire consequences of war upon a neutral nation. In the north, however, the effect has been in a more subtle way while just as severe if the farmer realizes it. Still it has been in the nature of an indirect tax and has not been drawn specifically to his attention. First of all, perhaps the most noticeable product has been the embargo placed upon potash.

Potash Not Obtainable.

Since the beginning of the war it has been practically impossible to secure any potash and the price of this product has run to almost fabulous sums without any probability of getting it even then, except in extremely small quantities. The quotations on potash for fertilizing purposes have been upwards of \$250 per ton, but these quotations mean absolutely nothing. They simply are quotations which discourage any requests for shipment because the importers are unable to deliver the material. Farmers have been more noticeable of this shortage than perhaps of any other commodity during the war.

Carbolic Acid Out of the Market.

If they should have occasion to use carbolic acid, as many do at times, they would find that there has been an enormous increase in the cost of this article. There is very little carbolic acid manufactured in this country. We understand that the Edison Company, of New Jersey, manufacture all of the carbolic acid now which is necessary for their own manufacturing purposes, and here and there small quantities are being manufactured, but not enough to influence the market price which is very high.

At the same time products other than carbolic acid, which are used in disinfectants, such as coal tar, creosote oil disinfectants, have increased exceedingly in price and manufacturers of these products have been very appreciably embarrassed in trying to deliver for the old price at which their products have been sold for years, materials which they have been compelled to manufacture on the basis of the increased price for the raw materials. The farmer will find when he goes to the market to buy these products that it will be necessary for him to pay much more, and this is due to the war situation.

Potash is also used in the preparation of standard disinfectants. Such a product as compound solution of cresol, U. S. P., cannot be put upon the market at the present time because there is no potash to be put into it. A substitute containing soda is in all probability just as effective but according to the insecticide act it cannot be marked U. S. P., and consequently the users have been somewhat afraid to try it.

Where Glycerine Comes In.

We have not depended upon European countries necessarily for the production of glycerine, although a great deal of it, we understand, has been

imported. Glycerine is a commodity which should be produced in large quantities in this country. What is being produced is going into the manufacture of explosives and consequently the price of explosives for blasting purposes in this country, for blasting stumps, etc., will be considerably increased.

Paris Green, Etc.

The price of insecticides, such as Paris green, has risen very rapidly. One of the constituents of Paris green which is so important as a war material at the present time, of course, is copper. Copper can scarcely be had at any price, due to the demand for war materials. Consequently Paris green which is produced from sulphate of copper, has reached a price almost prohibitive to the manufacturer of Paris green. Farmers have been aware of the market price of Paris green in the last several years and it is difficult to persuade them to pay a higher price for this commodity, and if the manufacturer wishes to hold this trade he holds it at a loss. If he charges a higher price, then he loses the trade and his business will have to be built all over again.

Sulphuric acid is used extensively in the manufacture of various products which, in their finished state, come into the hands of the farmer. Sulphuric acid is not produced in sufficient quantities to meet the country's demands, due to the great amount which has been removed for the manufacture of explosives.

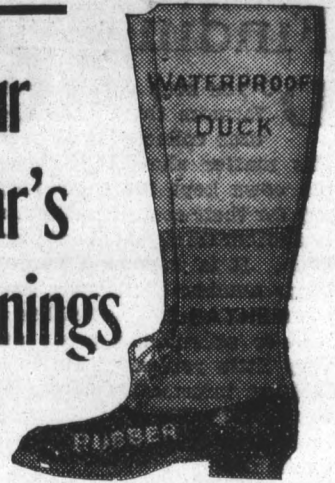
Sugar Beet Seed Comes from the War Zone Also.

There is still one other commodity which brings the farmer of the north more intimately in touch with the situation abroad and that is the difficulty in obtaining sugar beet seed. Heretofore all of the beet seed, or practically all of it used in the sugar beet centers has been sent from Germany. Great difficulty has been experienced in the last year in getting its shipment through. With just what success the beet companies have attained in this regard we are not at present familiar, but these, for instance, may serve to remind us that even though we are a great distance removed from the actual scene of the war there are a great many ways in which this war is affecting us here in a neutral country, that the farmer who has heretofore considered himself perhaps the most independent of any business man of the country is in reality affected in many ways, and many more than he has in any way imagined. There is a debit and a credit side to this proposition, even looking at it from a financial point of view and while the credit side may loom up in one instance, a careful inquiry into the cost of materials will show an astounding debit entry as well.

PEAT AS A STOCK FOOD.

Some interesting uses are being made of peat in the United States. It is manufactured into a fertilizer and employed as a fertilizer filler, according to the United States Geological Survey; it is also used for making paper, stock food, and mud baths. In German and Austria peat baths are well-established institutions, and during the last few years such baths have been tried in some of the sanitariums of the middle west and found beneficial in certain cases. As food for live stock, however, peat seems to have found its most curious use, inasmuch as the kind of peat used is thousands of years old; and although it may still be classed as vegetable in character, it is only a step removed from low-grade coal. As a stock food it is used in a mixture containing molasses. The results are stated to have been very satisfactory in practice, the peat acting as a tonic and corrective.

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PUBLISHED WEEKLY. *JOURNAL*
ESTABLISHED 1843.

The **FARM BOY**
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SCIENTIFIC and
MECHANICAL

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

The Skodykes Engage In Apple Growing

By HOPE LONG DE FORD.

SO many failures had attended the agricultural efforts of the somewhat unfortunate Skodykes, that it was no wonder that they were eagerly looking about for some new field of enterprise, and naturally they listened with a growing hope while the institute dealt with the subject of *Renewing Old Orchards*, for back of their farm house lay an old neglected orchard and beyond it a young one. So marvelous were the accounts of what various orchardists were doing, so explicit the directions given, that it was small wonder that the two looked deep into one another's eyes and exclaimed in unison, "We must spray: Let us spray."

"Pray what for?" queried the youngest son, who was with them.

"Apples!" exclaimed Skodyke, with emotion. "Pray and spray."

The first work to be done was to get the trees trimmed up. So literally had he followed the text to trim up the

trees that in a few days a tangled mass of huge limbs with their twisted twigs lay many feet deep over the old orchard, and the trees stood like rows of inverted paint brushes—thirty, even forty feet tall, trimmed slick and clean to the uppermost branches. As he trimmed he estimated, one man had gathered thirty bushels of Northern Spies from one tree. One man reported selling his at three dollars per box of fancies. Ninety dollars per tree; and fifty trees, computed he, and the result made his head swim. In fact, it swam so badly, either from that cause or his great elevation, that he clutched a limb that was not there, and fell yelling to the earth. Luckily for him the brush broke the violence of his descent though it scratched viciously.

However, Skodyke was undaunted and went on sawing hopefully.

The subject of grafting was studied exhaustively. Scions had been secured and one cool day in spring the couple began to compound grafting wax. The ingredients in proper proportion were placed in a kettle and a raging fire roared up the chimney. Mr. Skodyke went to the barn until Mrs. Skodyke should call him when the wax was ready to cool and pull and shape for use. Mrs. Skodyke went into the dining-room to rest awhile and let her mind wander delightedly among the aircastles she was building on the apple harvest. So absorbed was she in delicious anticipation, that she did not at once notice that a pungent blue smoke was drifting in from the kitchen. When she roused to note the fact she flew with alarm to the stove where the boiling yellow mass in the kettle was running over on the sides of the kettle and top of the stove, and

a purple smoke was rising in clouds. In a great fright she flew to the door and screamed for help, and looking back at the stove she saw flames burst from the top. She then rose to the emergency and heroically seizing the lifter of the kettle while flames swept up into her face and hair, blazing drops of the glue-like mixture beaded her pathway on the kitchen floor, as she blindly sought the sink, and landing the kettle safely, she began fighting the fire on the stove. During this time she had screamed "Fire" and "Help" as often as she could get the breath to. At least it occurred to Skodyke that, though his usually happy wife sometimes sang when she did the dinner dishes, somehow there was rather more of the grand opera effect than she commonly affected, and he drew near to listen when his nostrils were greeted with the smell of the burning wax, rosin, oil and what not. Alarmed, he entered, and as he

WORLD EVENTS IN PICTURES



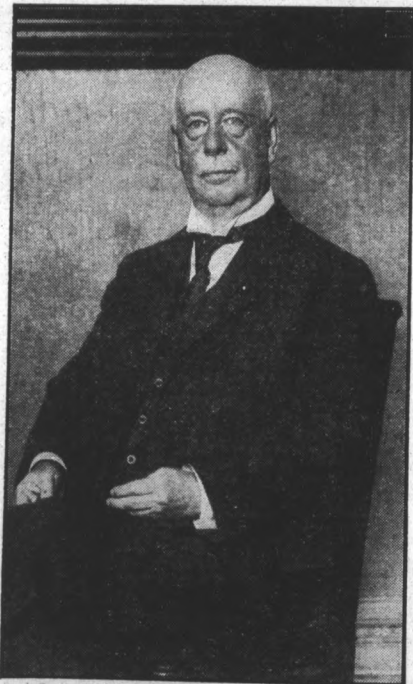
Russian Nurses Tour Germany to Gather Crippled Russian Prisoners to Exchange for Crippled Germans.



Sheepskin Sleeping Bags are in Urgent Demand by the Allied Troops for Use in Cold Weather.



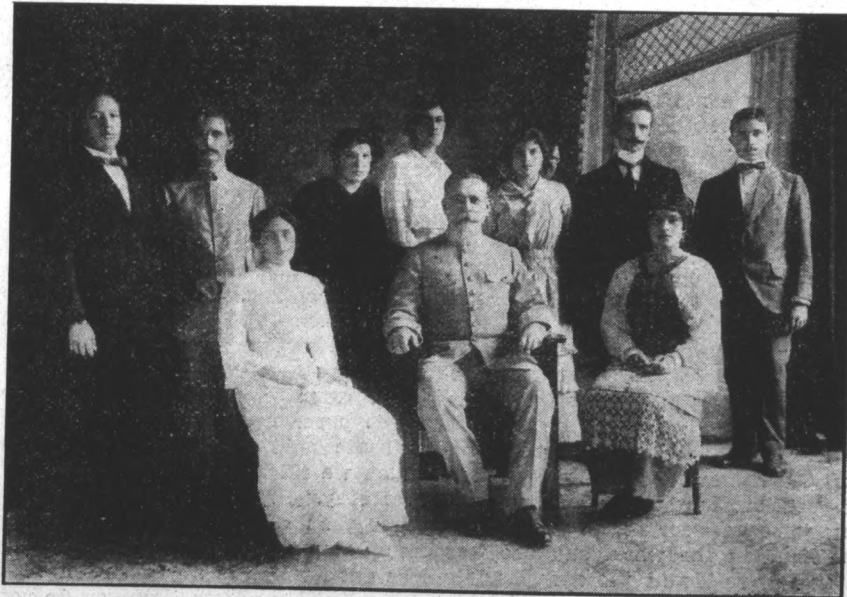
President Wilson Leaving the Voting Booth at Princeton where he Cast his Ballot for Woman's Suffrage.



Charles S. Mellen who Testifies to Monopolization of Transportation in New England by New Haven R. R.



Florence Fleming Noyes as she Appeared in Monster Suffrage Parade in New York City.



President Carranza of Mexico, who has Received Foreign Recognition as the First Chief of Mexico, and his Staff of Secretaries.

crossed to the stove to his wife's aid, his boots clung to the floor in a most uncommon way.

Skodyke was not long in dashing a pailful of water over the red hot stove. A loud report followed and scalding steam filled the air and hot black water flooded the floor, but the fire was safely out. But what hours of work stretched ahead of them. For the stove and the floor were smeared with the wax, which was just at its most adhesive state. But Skodyke kindly lent his aid, beginning the task of cleaning up by scraping a large lump of it up on a wide knife, he found it stuck to the blade. When he used a spoon to scrape the knife it stuck to the spoon. He tried to poke it off with his fingers and half of it adhered, but alas: it was still hot enough to burn, and with child-like simplicity he stuck his fingers in his mouth, and though it burned his tongue cruelly he grimly clinched his jaws to keep back a howl of pain, and when he would have spoken a moment later his false teeth were securely glued together.

Coughing violently from the strangling steam and smoke, Mrs. Skodyke had watched his attempt and saw the set look on his face, and though her husband was not a profane man she realized how dangerously near temptation was, so she said in a low sweet tone, "Wait, Dear," and would have tripped lightly to the pantry had it not been so difficult to lift her feet from the floor. But by taking long steps she accomplished the trip and returned with a saucer of lard. "See, we will cover our hands and knives with this and it won't stick."

Just at this point Skodyke was ejecting his teeth and his wife cried in alarm.

"Go to the door; go to the door, if the smoke makes you sick."

But Skodyke explained as plainly as he could with his toothless jaws, and his wife amiably put his teeth to soak in a tin cup.

The reader can imagine far better than the writer is able to describe how faithfully the two had labored, for when the sun went down and the early birds were saying good night, the kitchen was open to traffic and the stove was clean.

Skodyke was cleaning his teeth with a bit of emery paper and a tooth pick, and Mrs. Skodyke was filling the big lamp, sighing wearily.

"Well," she said reflectively, "experience is a dear teacher," but she added, "We'll forget about this when we are picking apples."

And then as she looked wistfully out to the orchard through which a marvelous sunset was glowing, "If we can only make something on the farm pay."

The real work of grafting went on without disaster or incident. When the time came round for spraying they began making the lime-sulphur. Neither had any idea of what the work was or how the material should look when ready to apply. But directions were followed and though it looked very doubtful, they dipped out of the huge kettle in which it had been cooked a mixture that looked like hot egg nogg or thin custard, and which should be smelled to be appreciated.

Loaded on a low wheeled wagon with a barrel full of the solution and other barrels for possible emergencies, in one of which was a shining new spray pump that seemed to them a marvel of force, a few feet of rubber hose ending in one long nozzle.

Mr. Skodyke occupied the driver's seat and his wife stood directly behind the barrel of warm lime-sulphur, for the scarcity of help made it necessary sometimes for her to take an active hand in the work, and she was going to preside at the pump, while Skodyke was to manage the horses and the rod.

All being in readiness Mr. Skodyke

gave the horses an inspiring command to move on, which they did with a sudden jerk. A great splashing and screaming behind him caused him to reverse as suddenly as he had started, and Mrs. Skodyke screeched, "Wait, for the love of mercy, this stuff sloshes. Look at me."

And he beheld her drenched from chin to toe in the warm steaming golden liquid. This necessitated a change of raiment, but when they proceeded the barrel was covered closely. They drove up under a tall Belle Flower tree and looked heavenward, where the few remaining branches tossed in the March wind against a cloudy sky, and decided that it would be necessary to get a board and lay on one of the barrels to stand on in order to make the spray reach the top. Accordingly he climbed up and taking careful aim, as with a rifle at an eagle, waited while Mrs. Skodyke pumped up a pressure. Skodyke waited and Mrs. Skodyke pumped until the pump handle would no longer move. At last out of breath, she gasped, "Did you open that stop-cock?" Skodyke lowered his weapon and turned a thumbscrew, and the pent up fluid began business with a great hissing like the steam escaping from a locomotive.

The astonished horses took alarm and leaped for safety. The Skodykes struck the ground without fatality, and the maddened horses circled around the orchard. But the heroic Skodyke captured them. It seemed little short of a miracle, that the barrels rode safely around the circle.

At the next attempt the horses were securely tethered to the trunk of the tree.

A sort of success seemed to come, inasmuch as the pump worked nicely

and the horses became accustomed to their load and the only drawback was, that the spray would not reach the tops of the trees and that the wind was very disagreeable. But since Skodyke was a man who did not turn back when once he set his "shoulders to the plow," and when his wife suggested that conditions did not seem to be right, he observed firmly:

"We can't wait for conditions."

Only once did his resolution falter, and that was when once the nozzle clogged and while he was looking after it, Mrs. Skodyke began to pump absent mindedly. The liquid struck him in the forehead and trickled down his face.

"Well, I swan," he said, not liking to use a stronger word, "If I did not have so much money in this old outfit, I'd give the job up." But again the picture of an abundant harvest came to them, urging them on to still greater endeavors.

Blossoming time brought a fairly good show of bloom and other operations engaged the attention of the fruit-growers. But one warm afternoon in early summer they walked out in the orchard and gazed long and searchingly into tall limbs. No fruit was discovered. But Mrs. Skodyke always resourceful, thought of her opera glasses and went to fetch them, but even that medium failed to reveal the hoped for fruit.

"If I only had a good telescope," sighed Skodyke.

But even a good telescope would not reveal what was not there.

"Well," said Mrs. Skodyke consolingly, "Even if there was a heavy crop how could we get them without a flying machine? So perhaps it is all for the best."

Sleeping Out of Doors

By F. H. SWEET.

THE present tendency toward outdoor sleeping and living has gone beyond a fad. It has come to stay, because it means better health and more zest in life.

Everywhere are sleeping porches being built, not only for semi-invalids, but for persons in good health. Camps are not uncommon, even in winter, and sleeping tents for sleeping are to be seen in many a dooryard. From New England to Florida I have noticed many new houses built with sleeping porches. Dining outdoors is indulged in by many, but outdoor sleeping is vastly more important. The dining is more of a fad, a luxury.

It may be that people will look at you askance if they find you sleep outdoors both winter and summer; and though you may hastily explain that you are not tuberculous, a few of them will still fail to understand that you can really enjoy it, that it is a great luxury of your life, making a new man of you and enabling you to enjoy life as never before. The reason why a man feels like a fighting cock after a night's sleep out of doors, and why he has the vigor to do more and better work all day is simple enough. The time when the body is rebuilt is at night, during sleep, and the more oxygen a person breathes the better the work of recreation is done. This is the true or constructive reason. The explanations commonly given are merely negative or incidental.

For example, people say, "Outdoor air is purer because it is freer from carbonic acid gas—the poison with which we fill closed rooms simply by breathing." Again, "Country air is purer than city air because there is less decaying household matter, and less dust, which is always laden with germs." These facts, however, do not explain the wonderful increase in efficiency and the joy of living that comes

even to a city man who neglects exercise but sleeps outdoors.

The chief reason why the practice does not spread faster even than it does is a vague notion that there must be some sort of hardship connected with it. This is a fallacy. You do not have to accustom yourself to bear intense cold. You are just as warm and cosy under your blankets and comforters as you would be indoors. Only the nostrils need be exposed on very cold nights. All who have tried it agree that the colder the weather the sounder you sleep and the better you feel the next day.

Sleeping indoors with the windows open is far ahead of using the closed room, but not so refreshing as outside sleep. Experience indicates that one is more apt to catch cold by the open window than by outdoor sleeping, but either is less dangerous than the sealing of one's self in the house with all openings to the outside world closed.

In the summer season the great drawback to outdoor living in America is mosquitoes, and for that reason it may be a long time before we shall live outdoors to the extent that the English do, for they have practically no mosquitoes there and it is light enough to pursue outdoor hobbies until ten o'clock at night for six months or more.

It costs about \$50 to wire screen a veranda large enough for a family of four. The three grades of wire netting varies in cost according to grade. Copper wire is the only rustless and permanent kind, although just now it is four or five times as expensive as the ordinary screening.

The cost of an outfit for winter sleeping in cold countries is about \$30 to \$50, including cot and mattress, but if it saves you \$200 in doctor bills and adds immeasurably to your happiness, you cannot afford to do without it. The main item is three down com-

forters which give you a maximum warmth with a minimum of weight, so that the limbs never feel oppressed. Then you need a woolen blanket the width of your bed and twice its length, because this is to enclose the comforters and protect the feet from exposure.

Most houses, of course, have been built without any thought of outside sleeping, but there is usually a veranda that can be adapted to it at little or no cost. Let me urge you not to go to a lot of expense until you have had some experience, because outdoor sleeping is full of surprises. For example, when we began we estimated that it would cost us \$150 to fix our veranda properly, for we thought we should have to enclose part of it with copper screens and, in order to get some privacy, rig up a system of sail cloth which could be lowered in the daytime so as to be inconspicuous. We couldn't afford this for a rented house in which we were spending our last year, and we finally found makeshifts that were perfectly satisfactory and never cost a cent.

The privacy problem solved itself, for we were far enough back from the road and sheltered by trees, but far more serious was protection from wind, rain and snow. A veranda will always shield you on one side, often two, and if the house walls protect you from the north and west winds you are in luck. The best plan, ordinarily, is to build a wooden partition five feet high on the other two sides. This is high enough for privacy and a windbreak, and not too high to prevent a free circulation of air. Above that comes your fly screens and, if you own the house, you can afford to put up some canvas to be used only on those rare occasions when the rain or snow would otherwise drive right through the fly screens. It is best to have these canvas flaps fixed so that you can roll them up from below when you need them. When not in use they drop down in a compact and reasonably neat roll just below the level of the fly screens.

But if you can't afford this, perhaps you will be willing to put up with such a makeshift as we used. We simply put a tall porch chair at each end of the cot and stretched a long piece of cushion in each chair will hold a long piece of mosquito netting over cot and all. A cushion in each chair will hold down the netting enough at the ends to keep it from sagging too much in the middle. It is something of an acrobatic feat to get in, and the contraption has to be taken indoors every day for decency's sake—but then.

These same chairs protect in winter from wind, rain and snow, for we put them at the windy corner and covered with old blankets.

You will need some sort of sleeping bag or garment with a hood, so that the sides can be drawn close about the face, and tied. This may take the form of a woolen union suit, under which the usual night dress may be worn.

Every year more houses are built with a thought to outdoor sleeping. This is the ideal way. Then you need have no bother of carrying a lot of things in and out every day, or upstairs and down. Also you can have the sleeping apartment on the second floor where it belongs. Women are nervous about sleeping on the first floor, because of burglars and because dogs sometimes go nosing about in the night and startle a person.

Even in big cities it is possible to get the main benefits of outdoor sleeping at a very small cost. A certain physician uses this device in tenement work in one of the large cities. There is a sort of bag that goes round the neck and keeps the outside air from getting into the room or affecting the body below the neck. With a little ingenuity something of the sort could be made for country homes where other conveniences are not possible to provide.

Land O' Nod Stories.

By HOWARD T. KNAPP.

The Language of the Ants.

THE ants certainly must be great workers, to build such a fine, long road as this," said Billy Be By Bo Bum looking with new interest at the swarms of busy insects hurrying along the broad highway that led to the ants' underground city.

"There is no mistake about that," replied Tinker Teedle Tee, who, you remember, was taking Billy to visit the Queen of Antland. "There's not a lazy bone in an ant's body. From early morning until late at night they are hard at work, either building roads, gathering food, caring for their children or enlarging their city.

"And the most wonderful part of it all is that they do their work without being told. No one directs their labors and there is no boss over them to see that they do their work right. Each ant has its own task to perform and goes ahead and does it without paying any attention to what the others are doing, and no ant would ever think of shirking work. Of course, an ant will often start a job that is too big or hard to be accomplished alone, and then it will ask some of its friends to help it. But there is no one who makes the others pitch in and help the first ant, they help of their own accord, just as you would lend a hand to a friend that asked you."

"How do the ants ask for help when they can't talk?" demanded Billy.

"Who told you they couldn't talk?"

"Well, I never heard an ant make a sound of any kind, and if they haven't any voice they surely couldn't talk, could they?"

"Of course, Billy Boy, the ants do not speak the same language as you," replied the merry little elf. "In fact, you were right when you said that they have no voice at all."

"Then how can they talk?" persisted Billy.

Instead of answering his question, Tinker called Billy's attention to two ants that had stopped at one side of the road. The one that was home-ward bound had dropped its load and stood facing the other, gently waving the long, hair-like antennae or feelers that grew out from its head. Then the other waved its feelers back and forth a few times, the first ant picked

up its load again, and they both went on their way.

"What were those fellows doing, Billy Boy?" asked Tinker as they resumed their walk.

"I'm sure I don't know," replied Billy, "but the way they waved their feelers they looked for all the world like a pair of deaf and dumb men talking with their hands."

"That's exactly what they were doing, talking," replied the elf, nodding his head so hard that the weeny copper kettle he wore for a hat bounced up and down at a great rate.

"Talking? I didn't hear them make a sound."

"Of course not," Tinker answered. "They were using the sign language which is the only one they know. An ant talks and smells and feels with those antennae or 'feelers,' as you call them. Just how they communicate with each other is a mystery that has never been solved. All we know is that it is by means of their antennae, which are truly wonderful organs and an ant would be in a sorry plight indeed if anything happened to its 'feelers.' For the ants have very poor eyesight, in fact, many are nearly blind, so they depend almost entirely on their sense of smell and feeling to guide them through life and these senses are both centered in those hair-like antennae."

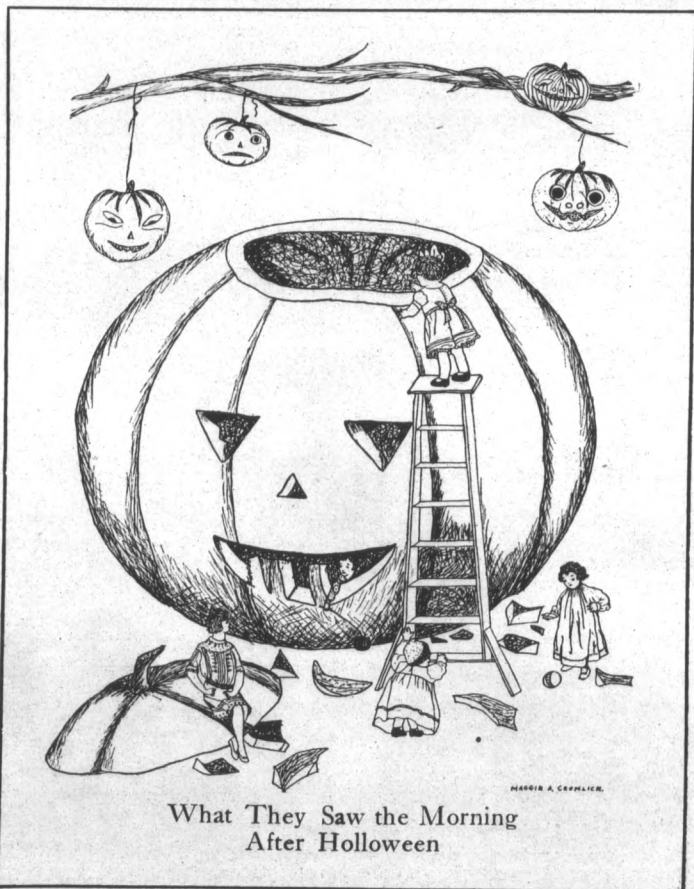
"Dear me, I had no idea those feelers were of any use," said Billy. "I always imagined they were a kind of ornament, the same as a cat's whiskers."

"Well, even a cat's whiskers are useful," replied the elf, "but I haven't time to tell you about that now, for if we are to get to Antland before the gate is closed for the night, we must hurry."

AS I USED TO FEEL.

BY CHAS. H. MEIERS.

"Thanksgiving time is here again, And mother is baking pies. While doing so, I hope she won't Forget about my size. I know that I have grown a lot Since last year; so, you see, She'd better roast two turkeys And bake lots of pies for me."



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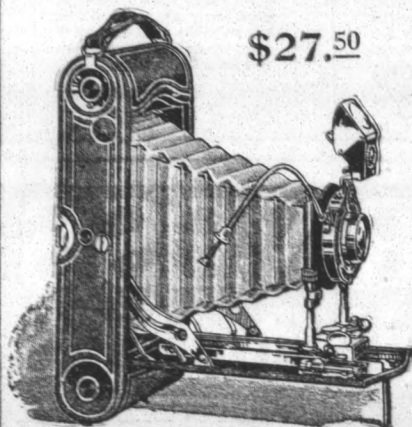
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Making Rural Life Attractive

By MARC N. GOODNOW.

THE unattractiveness of rural life is, to a very large extent, the measure of the farm-to-city movement. Where life is alluring, there the country boys and girls prefer to remain; where it is all drudgery and shadow they do not hesitate to move. But a most effective way of preventing this drift toward the cities has been found; it is making rural life more attractive and more satisfying than it has ever been before. That weapon is organized play. In more than one instance social recreation has been the means of regenerating an entire countryside and giving its residents an entirely new outlook upon life, to say nothing of a greater willingness to remain in the open country and perform a service from which the city dweller is shut out. More than one community, in fact, has come to believe that play is a necessity, not merely a luxury, for children and that it is a law of the child's growth. But play is even more than that. It is a matter of social welfare and the development of community spirit.

Under the auspices and direction of the county secretaries of the Young Men's Christian Associations, country children have been taught to play a variety of new and interesting games; country school athletics have been organized and inter-county meets held, sometimes on the county basis. Great field days have been remarkably successful in interesting adults as well as children; play festivals have interested whole townships, with hundreds of visitors, many of whom have tested their strength and skill at the various games and contests. The commercial and professional elements have been kept out successfully and the day made one of real play, for and by the people.

In its broad program of activities the association has been able to instill into rural dwellers a real "democracy of play"—the common advantage and benefit of all ages and sizes for the sake of winning a prize. The demand for well-directed play and for a new standard of athletics in the country school has been met by the county secretaries, many of whom have gone from school house to school house instructing the teacher in many of the folk games and pastimes which were long ago forgotten in the craze for competitive sports. The "star" system of athletics has been effectually abolished in the belief that the ability to play together as children is the seed from which will sprout the ability to work together as men and women. And the ability to co-operate with one another is the great pressing need in the country today.

Fifteen thousand boys and girls took some active part in the different county athletic or play programs in the fourteen organized counties in Michigan last year. Many of the activities in that state were conducted by the boys and girls themselves. One group of boys living nine miles from the nearest town put on a play festival at a farm on Independence Day and evening and had an audience of more than two hundred farmers and their wives. A glance at some of the activities conducted by associations in different parts of the country gives a small idea at least, of the great variety of things that are now interesting farm boys and girls and keeping them in the open country, where a large majority of them are best fitted to remain and become successful.

In Ionia county relay races were run from three or four nearby towns to a central town as a common terminus. One hundred and twenty-five boys participated this year and hundreds were out to watch and cheer.

One day's program at the Clinton

County Fair was given over to the association. The children from every public school in the county were invited. There was play and sport for everyone. Certain objectionable concessions were eliminated from the entire affair just because they could not be tolerated on the day that all the just-growing-up people were coming.

At Hillsdale College, Monday is a holiday instead of Saturday. One Monday the county secretary sent twenty-five men whom he had previously trained to visit the schools of the county and teach the children of each school a half dozen new and fascinating games. In many a district there real games were almost a thing of the past. One year every foot ball man played by the high schools of Eaton county was under the direction of the physical committee of the Eaton County Y. M. C. A.

In West Benton, Eaton county, five miles from any town or railroad, is another Y. M. C. A. group that has been organized four years. This last year they gave a banquet to 225 people of the neighborhood, cut a field of corn for a farmer who was ill and unable to hire, had a wood-bee for an aged couple, made a Thanksgiving contributions of provisions to their pastor and are now buying a \$300 piano to donate to the local church.

Nine of the group followed the example of their group president and have united with the church. All this has accompanied their bi-weekly meetings for Bible study, physical, social and educational activities.

Two hundred and twenty-five boys in groups for Bible study and these other activities was the record in Oakland county this last year. More leaders had been developed than the secretary is now able to use.

The social effects, of course, are far-reaching. Acquaintances formed at such times are followed up by correspondence and visits and very often become lifelong friendships. The names of those who excel in sports or other activities become household words throughout the county. That fact is a great stimulant to self-respect and ambition. The rural leaders in each community become known, be they boys or girls, men or women, and these are often brought together for organizing efforts in worthy enterprises for the common good.

Through well-directed groups organized for Bible study and through quiet personal work on the part of a secretary or one of his volunteer workers, the country boys in association counties are led to the discovery that religion is a "man's job" and that it is essential to a well-rounded life; and they come to a frank and normal religious experience which profoundly changes their outlook on life and gives them a new efficiency.

From the various play activities now being conducted for boys to the agricultural contests is but a short step and many boys and girls take it. Contests are promoted in corn-growing, bean, potato, tomato, and seed culture, and in poultry and chicken raising. More than five hundred boys and seventy-seven girls participated in such contests in Michigan alone last year. Dozens of boys whose fathers have never averaged more than thirty or forty bushels of corn to the acre managed to double the crop on their experimental plots. And all of these boys were under fifteen years of age, too. Some of them never had been interested in farm work before, but now they are preparing for the agricultural course at the Michigan Agricultural College and are looking forward to a life in what they rightly consider a dignified profession. Government and state experts who have found it almost impossible to gain a

hearing with the farmer himself or topics that have thrown a new light on farming, have decided to abandon the man to his own ways and concentrate all their efforts on training and aiding the son for better farming.

It is no exaggeration to say that country life under this new regime is a hundred times more interesting and attractive than it has ever been before. In ninety counties which have thus far been organized in twenty-four states and provinces of North America the drudgery of an isolated farm existence has been greatly reduced. Out of the movement has come the brightening of the farm home, a lifting of the load for both young people and old, and a new inspiration. It is, in fact, making more and better farmers by keeping those best fitted by nature and training for agricultural work on the farm, by putting them in touch with improved methods, and by bringing into their lives those human elements of their nature which have so long been absent—friends, social intercourse, wholesome recreation, and the spirit of service.

Some "Pye"

By AUNT QUILLA.

IT may interest some who are smelling Thanksgiving afar off to know that our colonial ancestors were not particularly partial to our present day favorite—the pumpkin pie.

Indeed, it seems that they even made a jest of the "pompion"—as the pumpkin was called—and were rebuked for their levity by an old writer who speaks of it as "a fruit which the Lord fed His people with till corn and cattle increased." It is said that it and the "squash"—which we have shortened to "squash"—grew in vast plenty.

In an old recipe for "pompion pye" only a half pound of pumpkin was allowed. To this was added thyme, rosemary, parsley, sweet marjoram, cinnamon, nutmeg, pepper and six cloves. No milk is mentioned. These ingredients were to be mixed with ten beaten eggs, to which was added sugar to taste, after which the compound was to be "fried" and let stand until cold.

At this juncture appears the crust which was to be filled with a layer of the mixture and a layer of apples and currants, the apples to be sliced "round-ways." Before the crust was closed a generous allowance of "sweet butter" was to be added and the "pye" baked. After baking, six yolks of eggs and some white wine were to be added by cutting the "lid" and stirring all together.

As for the potato, in early colonial days its cultivation was rare. Even as late as 1763 a crop of eight bushels was considered large. In fact, too large because, "if a man ate them every day he could not live beyond seven years."

Moreover the potato was under the ban because it was not mentioned in the Bible, and when Parson Jonathan Hubbard, of Sheffield, raised twenty bushels in one year he came very near being dealt with by his church for his "wicked hardihood."

However, certain housewives seemed to have regarded it with some favor for in an old book called "The Accomplished Cook," is found this recipe for "potato pye:"

First the potato was to be boiled and blanched. (Whether one or many is not stated). It was then to be seasoned with nutmeg, cinnamon and pepper, mixed with eringo roots, dates, lemons and mace. This mixture was to be covered with butter, sugar and grape verjuice. Lastly the pastry was to be made and iced with rosewater and sugar after which it is supposed to have bloomed forth as a finished pie.

Who will make these pies for Thanksgiving and who will eat them?

Tessie's Thanksgiving

BY M. PELTON WHITE.

TESSIE TERRYL lived in the poor quarter of the city where Thanksgiving Day doesn't often bring turkey, cranberry sauce, pumpkin pie and all the other goodies that go to make up a jolly Thanksgiving dinner.

But, my, oh my, don't imagine for a tiny little speck of a second that Tessie was sad or unhappy on that account. She was as merry and light-hearted as any little eight-year-old lassie can be.

All the live-long day she laughed and romped and played with her brothers and sisters and did some other things, too. It's about the "other things" that I want to tell you.

Down at the mission where Tessie went to school the teacher said a great deal about Plymouth Rock and the Pilgrims who landed there. She told how much the first Thanksgiving Day meant to these early settlers. It didn't take Tessie very long to see that she herself was a very fortunate child and had a very great deal to be thankful for.

There were no Indians to be afraid of. All the little Terrylys were rosy and round and not the least bit sick as the poor Pilgrims were a long time ago. Besides, they had plenty to eat—there was meal and potatoes and a big soup bone in the cupboard—and they were in no danger of being cold as there were still two sacks of fuel by the kitchen door. Yes, indeed, Tessie and the other Terrylys had lots and lots more to be thankful for than did the people who first celebrated Thanksgiving Day.

And then, just the morning before the glorious holiday, the little girl heard her father say that he'd precious little to be thankful for and her mother seemed to agree with him.

Poor Tessie, she couldn't understand it at all. It made her very uncomfortable to have her father and mother so downhearted and she looked quite sober for the rest of the morning. Then an idea—a perfectly splendid idea—popped into her head and for the rest of the day she was as busy as busy can be.

Very early the next morning she heard her father say: "Well, I'm thankful someone has found time to darn my socks. I need to change as I got my feet wet yesterday."

"Tessie mended them," his wife replied. "I've been so busy with that extra washing that I've had to let everything go."

Tessie smiled to herself and a little bit later she smiled again. It was when her brother Tom thanked her for putting a new thumb on his mitten. She laughed happily when her little sister Mamie gave her a great big kiss because she was so thankful for the paper dolls Tessie had cut out for her.

"I am so thankful I can leave the children in your care, dear, and not feel worried," said Mrs. Terry as she started out the door with a basket of freshly ironed clothes that belonged to the rich people on the hill.

Tessie's face fairly beamed and the baby brother she was rocking gurgled and cooed. He was always happy when she held him.

"Oh, I am so glad, oh, I am so glad," sang the little girl that night while she was washing the supper dishes.

"What makes you glad?" asked her father.

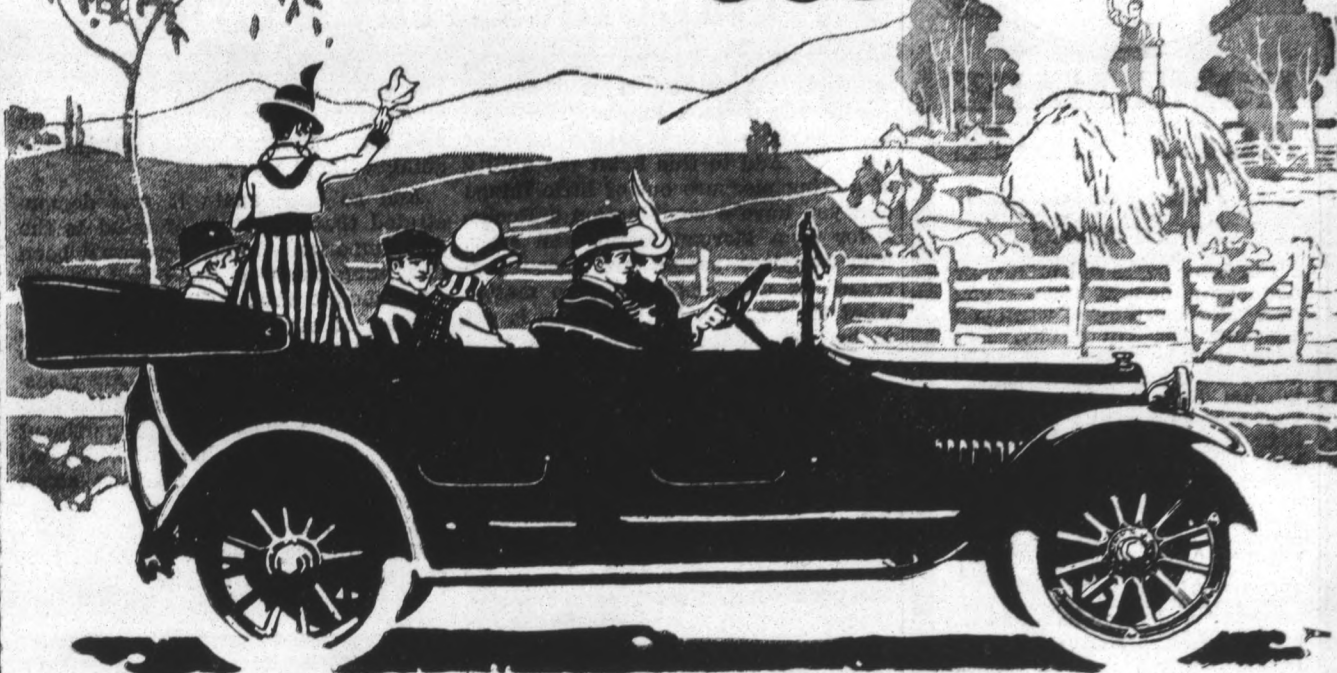
Tessie slyly told him how everybody in the Terry family had been thankful for something on Thanksgiving Day.

"But what are you thankful for?"

"Why, father, can't you see?" Mrs. Terry put her arm about her little daughter and drew her close. "Tessie is thankful because she has made every one of us happy today."

"Well," said Mr. Terry slowly, "after all, that is the very best way to make one's self truly happy."

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Woman and Her Needs At Home and Elsewhere

Happiness In Trifles

I BELIEVE it was Dr. Johnson who said, "It is worth a thousand pounds a week to have the habit of looking on the bright side of things." Add to this habit the ability of getting pleasure out of little things and you have a combination a Rockefeller or a Morgan might well envy. The happiest people are those possessed of this disposition, no matter what their estate, for happiness is not in any way dependent upon outward conditions, but upon the state of mind.

Of course, that last remark is trite, and you are already yawning. But it has just been so forcibly impressed upon me by the one woman who, apparently, would be least likely to be happy, that I can't help remarking upon it. Of all the women I know, she has had least cause to be happy for the past year. Just before the war, that war which has hurt everybody in the civilized world, directly or indirectly, her husband gave up a good position and moved to a strange city to start a new business. Of course, new businesses demand capital and capital ducked for cover when the war opened. Also old business languished, and men were let out, and the business to languish most was steel, the one thing this particular man knew. There was no work for the men who were known in the town to which he moved, so a stranger like himself had no show whatever. There were three little girls to feed and buy shoes for, and things couldn't have been much blacker.

For a year the friends of the family back here at home have worried about them and for them. We have pitied their homesick and heartsick condition and have been almost reduced to tears considering their hard lot. Last week the little woman and the three girls came back home for a short visit and we discovered that it was a good thing we had done the worrying. If we hadn't, there would have been none done, for the ones most interested just accepted the inevitable, shelved the disagreeable, and hoped for brighter days.

"Of course, things haven't been easy," said the little woman, "but we've got along, and it's been fine experience. You know I believe we need every experience that comes to us or we wouldn't get it, and this has taught us a lot. We found we could do without lots of things we used to think necessities. We cut out desserts, and the children were lots healthier, and we ate stews until we got stewed out, and I baked all the bread all winter long. Some things weren't pleasant, but so many nice things happened that they counterbalanced all the disagreeable things.

"I never saw so many beautiful birds in my life as came in our yard this spring. The dearest little wren built her nest right on the back porch. And the children have been so good and said so many funny little things that kept us laughing all the time, they more than made up for any worries we might have had over the way shoes wear out. Then we're so pleasantly located, right in the middle of an old farm our subdivision is, and the lots all have old fruit trees and no end of berry bushes. We aren't far from a lake, and the air is fresh and the change has been fine for us, though you folks up here all seem to think it is a change for the worse. To be

sure, I haven't had any new clothes, but the war can't last forever, and when it does stop business will boom and then I'll have all the things I'm going without now."

And so once again it was demonstrated that the state of mind is the only important thing. Here we'd been imagining them in the direst straits, and thought what a pity they had the burden of supporting three children, and that they had no pleasure of any sort, and they had been making pleasure out of what we considered the burden, and the visit of an impertinent wren. They were happy, while we were quite miserable thinking about them.

And so the old, old truth was justified once more, "Out of the heart proceedeth the issues of life."

DEBORAH.

PROTECT THE GARDEN AGAINST WINTER WEATHER.

At this season many inquiries come to the United States Department of Agriculture regarding the protection of garden plants and shrubs during the winter. Such flowers as peonies and hollyhocks will come up again the following year if they are properly protected during the winter, while others, like cannas and dahlias, which are more accustomed to warm climes, must have their roots or bulbs dug up and stored in a cellar. The department's specialists give the following suggestions for "putting the garden to bed."

Hardy Perennials:—Cover hardy perennials, such as peonies, larkspur, hollyhocks, columbines, iris, platycodons, and perennial poppies, with a good coating of manure or other litter to a depth of three or four inches. In more southern localities this will hold the frost in the ground and keep the plant from alternately freezing and thawing; in more northern regions the manure will protect the plant from freezing to a depth that will cut off its water supply.

Cannas and Dahlias:—As soon as the tops of cannas, dahlias, gladiolus, caladiums and similar plants are killed by frost, dig up the roots or bulbs and store them in a cellar where the temperature will remain at 55 degrees, and should never go below 50 or above 60 degrees. Do not shake any more earth from the clumps of cannas and dahlias than is necessary in removing them from the ground. Place the plants on racks or in slat boxes so the air may circulate freely through them. No frost must reach the roots nor must they become too warm or dry.

Hydrangeas:—Hydrangeas (semi-erectaceous), in the south will last through the winter out-of-doors, if properly cared for. The tops should be protected with straw or brush. This may be held in place about the bushes with a little manure or stones. The flower buds of the hydrangea form in the fall, and this cover will keep them from winter-killing while shielding the bush from winds and sun. In the north, hydrangeas must be taken up, planted in tubs and placed in the cellar. This is generally true of latitudes north of Philadelphia.

The shrub known as brugmansia, also called thorn apple, should be treated as is the hydrangea, but they

are not hardy nearly so far north.

As a rule, shrubs should not be trimmed in the fall. This process is timely immediately after the blooming period, if this is in the spring, as in the case of the snowball. If the shrubs bloom in the fall, as do some hydrangeas, the rose of Sharon, and some lilacs, they should not be cut directly after blooming, but in the spring of the following year. Lilacs, snowballs, and mock orange should be let alone during the winter, being neither trimmed nor covered with straw and manure.

Roses:—Almost all kinds of roses are hardy in the vicinities of Washington, D. C., and St. Louis and to the south of a line drawn between these points. From Washington northward local conditions influence the successful cultivation of certain varieties. Some roses, as the briar and rugosa, need no protection, but other varieties, such as the hybrid-perpetuals, teas, and hybrid-teas, need special care, particularly north of the fortieth parallel. Teas and hybrid teas hardly succeed in Chicago, although the hybrid-perpetuals grow as far north as Canada. All these classes do well on Long Island and in Boston near the sea when proper care is given them. These varieties in the vicinity of Washington need merely a little manure on the ground to prevent alternate freezing and thawing. Farther north, however, they should be treated as follows:

Cut the tops to within 30 inches of the ground. Cover the roots with coarse manure or leaves or similar litter. Hold this in place by evergreen boughs which also acts as a protection. Brush from deciduous trees or shrubs may be substituted for the evergreen boughs except in the most northern regions.

Mounds of earth about six or eight inches in height should be drawn about the base of the rose bushes to keep them from mice. As an added protection against mice, permit the ground to freeze slightly before winter protection is supplied. In fact, roses should not be protected until after the first light freeze, which may be expected in Washington, D. C., about the first of December, but earlier farther north.

Climbing Roses:—In the latitude of Philadelphia and farther south climbing roses usually need no protection during the winter unless they are a particularly tender variety. Farther north these roses need protection similar to that given to the tea and hybrid tea roses. Where it is possible to do so, remove climbing roses from their supports, and cover the branches with a little dirt. A little fall trimming might be desirable to lessen the space occupied by the branches on the ground. Such side branches as are not to be needed for next season's blooming may be cut off. Such cutting off and shortening of the ends as would otherwise be done in the spring, may be done in the fall before covering, merely for convenience.

MAGAZINE GUESSING CONTEST.

BY RAY J. HURNESTON.

A great deal of entertainment may be derived from the following guessing contest, the answers being the names of well-known magazines:

Questions: 1, A little dog is what? 2, The American girls seeks what? 3, Who do we set the bull dog on? 4, What did the prisoner want? 5, What paper does the camper take? 6,

Where does one go to spend 10 cents? 7, The farmer claims to be what? 8, Who needs an auto most? 9, What is war to the poor people? 10, Who is noted for his big bean crops? 11, The bachelor desire most to be what? 12, What do we all read? 13, Thomas Edison is what? 14, What does the little man who marries a large woman need? 15, What is John Bull's favorite drink? 16, What does the lawyer want to be? 17, What does everyone try to enjoy?

Answers:—1, The Youth's Companion. 2, The American Boy. 3, The Bookman. 4, Farm and Home (or Farm and Fireside). 5, Comfort. 6, Harper's Bazaar. 7, Independent. 8, The Inland Farmer. 9, The Menace. 10, The Michigan Farmer. 11, The Woman's Home Companion. 12, Current Topics. 13, The Scientific American, (or The Popular Mechanic). 14, Grit. 15, Punch. 16, Judge. 17, Life.

NEW EDUCATIONAL EXHIBIT.

BY HILDA RICHMOND.

Most people in the little city were used to the conventional educational exhibit, but they were treated to a new one by the principal of the high school as soon as the long vacation began. Rather, the exhibition began a little ahead of that day in June when the promotions and failures were announced, though the head of the high school could not give much time to it until June.

As soon as the school closed the teacher took charge of a dozen or more vacant lots which he had rented and proceeded with his own hands to put them into vegetables. He had planted a few things before, but his work kept him from getting much profit from the early vegetables. His selection included such things as could be sold before September, as far as possible, though potatoes and sweet corn and tomatoes were given a share of his attention. Then he personally cultivated and marketed his crops quite as if that were his only occupation in life, getting pleasure and profit from the hard work.

In that town a dentist advertised for an office girl at three dollars per week and received 35 replies in two days, while his wife running an advertisement at the same time for a girl to help with the housework, received no answer in four weeks. Likewise, the young men of the town were anxious for "snaps" in vacation, and unwilling to get down to hard work. There were 50 applicants for a place to get board and lodging for waiting table at a summer resort and not one for a stout boy helper on a big farm. The spirit of the place was not conducive to "dirty work," so called.

Now from time immemorial public school teachers have talked of the dignity of labor and the worth of honest toil, but that principal did more by his vacation work than had been done in that town for years past to call attention to the dignity of labor. It was an educational exhibit that was worth more than all the medals won at prize shows for years. At once the young people seemed ashamed of themselves for allowing their parents to support them because the right kind of job was not forthcoming. One young lady teacher took service in a family where light housework was all that had to be done, not because she wanted light work but because her health would not permit heavy tasks, and she found at the end of vacation that the change of employment had benefited her in health as well as in purse—benefited her a great deal more than the task of addressing envelopes at three dollars per week she had given up to take the household task. Several young men went to work on farms and were highly spoken of by their employers, and one teacher went out painting and paper-

hanging for his vacation work. All at once the old idea that people "look down upon" educated people who work with their hands at honest toil was laid aside by a number of people and the town took a step forward.

And the best of it all was that the principal took up the work, not as a public example, but modestly, unassumingly and carefully, as he did his other tasks. He wanted to put in a pleasant and profitable vacation after his long confinement in the school room, so he took up gardening and realized his fondest expectations in the way of pleasure and profit. And in addition he has been made to feel that he did his community a real educational service quite as vital as his good work in the class room, while furnishing an educational exhibit of the combination of brain and brawn in his garden. And this latter unsalaried occupation will probably do more good in the end than all the work done in the class room, according to many fathers and mothers in the town.

Will Mrs. Fred Wells, of Mulberry, Ind., please send correct address. A letter so addressed to her has been returned.

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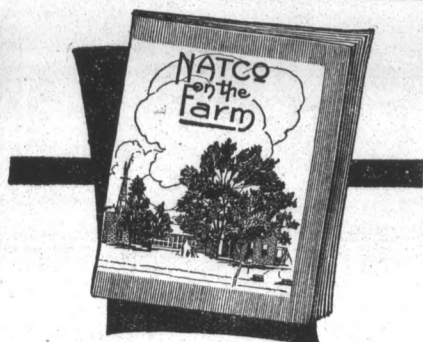
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Michigan's Pioneer Credit Union

Dr. W. O. Hedrick Head of the Economics Department of the Michigan Agricultural College Describes in the Article Below the Success Attending the First Year's Business of Michigan's Pioneer Credit Society.

IRON RIVER in Iron county is far more famous as an ore producing center than as a place with agricultural possibilities. It is near here that the famous Chapin mine—for many years the single largest ore producer of any mine ever discovered—is located. The neighborhood itself is a part of the great Menominee ore range and Iron river together with its twin, the city of Stambaugh, are on the western fringe of this vast mineral deposit. The mineral interest is indeed so predominant that one frequently is told in talking with residents of the region that the most profitable crop raised by this or that farmer is the royalty that he has received on the mineral rights of his farm. Nevertheless, real agriculture has secured a firm foothold in Iron county and a day's ride in the vicinity of Iron river shows many farms newly cut from the woods with new buildings and with hopeful owners. The county was one of the first in the state to secure a county agent and it is to the effort of this agent, Mr. R. G. Hoopin-garner, that much of the praise for the successful Credit Union, located in Iron river, is to be given.

How the Order Started.

"The situation here was such with regard to live stock—the lack of animals was so complete," Mr. Hoopin-garner told me, "that even the beginning of a supply could not be made without co-operative effort on the part of farmers." From circumstances of this sort the Iron River Mutual Live Stock Association came into existence in March, 1914. The plan of organization was shaped into form by Mr. Isaac Byers, a farmer of large means in the neighborhood, widely experienced in co-operative undertakings and who, as president, has continued to serve the movement until the present time. The association was incorporated under the Agricultural Co-operative Association act of 1912 with a capital stock of \$3,000 divided into shares of \$10 each. At the beginning its membership consisted of only eight persons, equally divided between townspeople and farmers. Before the end of the year, this number had increased to thirty, still balanced fairly evenly between farmers and townspeople. Several carloads of cattle have been brought to Iron River by the association and distributed out at cost to farmer members. The balance sheet from the association's accounts of April 1, 1915, showed \$2,969.78 of disbursements and receipts as representative of the business of the organization for the first year.

The Members Seem Satisfied.

The organization is essentially that of a credit union. The first carload of cattle which it brought to Iron river was paid for through borrowing the money from a bank upon the credit of the association. The individual members of the association who subsequently became the owners of these animals did so by giving their personal notes to the association for their purchases. The association in turn endorsed and sold these notes to the bank, thus redeeming its loan from the bank which had been originally made. The writer visited a number of the farmer purchasers of these cattle and was invariably told by each of them that as individuals the banks would have given them no credit. He as an individual could have borrowed

nothing from the bank—or, as usually stated, "the bank did not know me." On the other hand, his note became readily acceptable to the bank when endorsed by the association in which he and his fellow farmers were combined.

The exact plan of operation of this association—how it procured its consignments of cattle, how they were distributed upon arrival at Iron river, the handling of the funds, the securities against loss which were taken—all deserve description if space and time permitted. But the vital feature of the association—the scheme just described made use of by farmers having no money and no bank credit for getting the means to make purchases of cattle—is the big thing in this undertaking.

Advantages Over the European Societies.

It must be observed in closing that the credit union plant in the Iron River Association is an improvement so far as the needs of American farmers are concerned over the credit union plans made use of in European countries since in our association the co-operating members are limited in their liability. The far famed credit unions in European countries require

the pledging of each member's entire resources in supporting the liabilities of his Union while in the Iron River Union, the farmer, like the stockholder in any other corporation, is only liable to the extent of his holdings of shares.

The association is amply secured against losses from the farmer purchasers of cattle since it retains through a contract the ownership of the animals until they are paid for. The movement furthermore is in no way philanthropic in character since in order to procure working capital the association guarantees to each stockholder six per cent returns upon his investment. The amount required in order to make good this guarantee is looked upon as so much necessary expense which, like other costs, must be borne by the purchasers of the animals.

Wider Application Possible.

It has seemed to the writer that this form of organization might have particular usefulness in this state to the farmers, outside the newer regions, in promoting the ownership of pedigreed stock. As is well known, the banks of Michigan give little or no direct aid to the ownership of pedigreed animals. On the other hand, many farmers desire to become improved stock raisers of some sort or another and the scheme which has been described would solve the difficulty of getting the start. Of course, since this is only an improved type of the new universally used credit union, it could also be used for many other purposes. A mere vote of the board of directors could turn the funds of the association into the buying of fertilizers, the building of creameries, the putting up of silos or into any one or another of the customary needs which are so common to farmers.

The Farmer's Pack of Apples

THE farmer's pack of apples cannot be depended upon. It is almost pure gambling to buy such without inspection. In most instances the packing is done with good intentions no doubt, but with little packing knowledge. Many good dealers have practically quit handling apples put up by the average grower.

The Dealer's Position.

The above is a boiled-down statement of one of the three or four large apple dealers of Detroit. This dealer did not declare himself in this manner because of any antipathy toward the grower of this fruit, but he did it in defense of his trade. He sells to the better class of retailers and he keeps them supplied throughout the year. These retailers have a demand for only good apples. If perchance inferior stock is sent them, they are obliged to return it because customers must not even get a suggestion that any goods of low quality are kept in their stores. As a result of this existing and exacting condition, the dealer referred to is obliged to handle only such goods as he can guarantee.

When he obtains his supply of apples from a reliable source all that is necessary for him to do is to take the barrels from storage and deliver them to his customers. On the other hand, he must repack fruit that is of questionable quality. To cover the cost of repacking where it is necessary to protect his reputation, he must buy at a much lower price.

The Remedy is Apparent.

Now if this practice of eliminating the farmer's pack from the best apple trade is common—which we believe is becoming more and more the case each year—what does it mean to the ordinary growers? Does it mean that they will be divorced from the best markets, and instead of getting fancy prices for their fancy stock be obliged to sell to the more ordinary markets where price and not quality is the

main consideration in making sales? That appears to be the probable outcome and if it comes to pass the farmer will then receive about enough for his fruit to pay the actual expense of producing and marketing.

Is there any remedy for this situation? The dealer referred to was quick to state that he would accept shipments from any farmer, providing he could be absolutely assured that the fruit was standard packed. He was confident, too, that the same position would be taken by other dealers. If this be true, the remedy for the situation would appear to lie in packing this fruit according to present trade standards.

The Packer's Guide.

Now this does not mean that any grower is to pack his best apples and stamp the barrel as "Standard Fancy," for it is altogether possible that the grower may not have a single apple that would be so classed by the trade. Instead of using his own product as a standard, the grower should learn the definition of different grades before undertaking to sort the apples at all. Knowing definitely what the trade wants when it asks for "Standard Fancy" apples, he can intelligently determine to what class the different specimens belong. It is only by having these generally accepted trade standards as a guide that the producer will be able to meet the higher demands required by wide-awake dealers who are patronizing the best markets and who as a consequence are in a position to pay premium prices.

Why the Local Packers.

In this connection it will be argued that modern agriculture is making such rigid demands for intelligence along so many lines that to keep posted upon the changing requirements of the trade in farm products would be beyond the capacity of the average person. And because of this apparent super-human demand the grower is

willing to dispose of his apples at a low quotation rather than to trouble with the preparation of the fruit for the better trade.

This attitude held by a large number of apple growers has developed in many sections a class of local buyers who purchase the fruit in bulk, grade it according to trade requirements, pack and ship to those who can use the different grades to the best advantage. These local buyers guarantee their shipments to the big dealers, and soon have a reputation established which usually begets fancy quotations. By careful dealing these buyers in time work up a highly profitable trade, inasmuch as they can purchase the stock at a low figure and sell a considerable portion of it at a very fancy price.

With a reasonable amount of fruit, the grower can save the margin of profit that goes to these local men. It will necessitate, of course, his becoming informed of the trade requirements. This knowledge, however, is becoming more available to the grower. Besides the aid of the press, books and bulletins, schools for giving instruction in packing with actual demonstrations as an important part of the program, are now more common. If growers can avail themselves of these opportunities to learn, they are quite certain to reap financial benefit, providing they use their knowledge honestly and persist in doing so year after year.

Where this individual plan is not feasible, there remains what is generally considered by most students of marketing to be the best plan of all—the system of grading and packing through a co-operative organization. Notwithstanding the many failures, the fact remains that the principle of co-operation is sound, and when properly applied by practical business men it succeeds. If growers of apples are able to unite in a practical co-operative organization and secure the services of professional men to handle their fruit, they will be able not only to put their best grades upon the best market and obtain for it the highest ruling price, but they can do this at the minimum of expense. The dealer who made the statement noted above has dealt with growers' co-operative organizations and he declares that it is his opinion that necessity will ultimately force producers to organize generally. He believes that discrimination against the product as put up by the ordinary individual will be a big factor in forcing this united effort. And a closely related force in this social movement will be the economy in selling and handling in carload lots, which can be done by these mutual associations where it would be impossible by individuals acting separately.

Future marketings will show a wider distinction between good and poor grading of products. The margin of profit over and above cost of distribution may be large on good grades but so small on the poor grades that it will make shipment to market unprofitable. This will incline thoughtful growers to grade upon the farm or near the point of production, and then it will be necessary to utilize the poor grades in some inexpensive manner. It may be possible for the individual to meet these conditions himself, but if not able or willing to cope with them alone the only hope seems to be in the organization of a co-operative society that will pool the entire crop of the community and handle it as a single unit.

Crop and Market Notes.

Michigan.

Cheboygan Co., Oct. 26.—Yield of wheat 15 to 30 bushels; oats 40 to 70 bushels; clover seed one to two bushels. Corn and beans one-third of a crop. Potatoes half a crop. More fall grains sown than usual. Not much feeding stock on hand. Apples and pears half a crop. Wheat 95c; pota-

toes 50c; apples 60@75c; butter 30c; eggs 25c.

Eaton Co., Oct. 23.—Wheat averaged 25 to 30 bushels per acre; oats 60 to 65 bushels. Potatoes badly rotted. Beans are of fair quality. Corn was affected by frost before reaching maturity. Not as much wheat sown this fall as last. The country is well stocked with hogs, and there are also quite a number of cattle and sheep. Fruit quite scarce. Wheat \$1.05; beans \$3; oats 32c; corn 70c; potatoes 60c; butter 18@22c; eggs 28c; hogs live \$7.75; lambs \$5@7.50; cattle \$5@7.

Mecosta Co., Oct. 25.—Weather favorable for fall work. Potatoes about 60 per cent of an average crop. Corn is soft and will not harden up. Beans hurt by blight and frost, and are about half a crop. Not as much fall seeding as usual. Potatoes 45c; beans \$3.25; eggs 24c; butter-fat 29c.

Sanilac Co., Oct. 22.—Early potatoes rotted; later ones blighted early and did not develop, making the crop a total failure. Beans about 25 per cent of a normal crop. Grain threshing is about done. Oats yielded 35 bushels; wheat 20 bushels; barley 40 bushels. Corn crop good and silos all filled. Very little produce going to market. Timothy hay \$12; eggs 24c; creamery butter 26c; oats 33c; beans \$3.15; lambs \$7.50. Horses are cheap.

Tuscola Co., Oct. 25.—Wheat yielded 10 to 25 bushels; oats 40 to 50 bushels per acre. Very little clover seed. Corn all cut, about half a crop and a lot of soft corn. Potatoes almost a failure. Beans very poor and a number of fields not harvested. Very little wheat sown, the ground being too wet. Sugar beets a fair crop, and the factory has begun operations. About the usual amount of feeding stock. Apples scarce. Wheat 97c; oats 33c; beans \$3; eggs 26c; butter 24c; potatoes 80c.

New York.

Genesee Co., Oct. 27.—Wheat yielded 25 to 50 bushels; oats 50 to 90 bushels. Potatoes decaying badly where not sprayed. Beans rusted badly and were hard to secure. Corn is good. A large acreage of wheat sown. A few farmers have secured feeding stock. A fair yield of apples and pears. Wheat \$1; potatoes 70c; oats 35c; beans \$3@3.50; loose hay \$12@14; hogs \$6@6.50; lambs \$7.50@8.50; fowls 12c; eggs 32c; butter-fat 31c; good apples \$1 per bushel.

New Jersey.

Monmouth Co., Oct. 25.—Wheat and oats yielded well. Potatoes all gathered and are a fair crop. Corn good. About the usual amount of fall grain sown. Hogs are the only feeding stock kept, and there is about the usual number. Apples and pears are good yield. Wheat \$1; potatoes 50@55c; apples 50c@1.

Ohio.

Carroll Co., Oct. 25.—Farmers have most of their corn cut, and there is a great deal of soft corn. Lots of potatoes to dig yet; the crop is very poor, some rotting and late ones being blighted. Winter apples being picked, not as big a crop as last year. Wheat looks very good. Sheep scarce and high in price. Butter 24c; eggs 24c.

Hancock Co., Oct. 25.—Corn cutting about finished and most of it very good, though some fodder spoiled by frost. Wheat yielding 20 to 50 bushels; oats 40 to 75 bushels per acre. Potatoes keeping well. Pastures are good and spring seeding of clover is extra good. Many cattle are being brought in from the west. Apples a good yield and of fine quality. Wheat \$1.08; corn 90c per cwt; oats 31c per bushel; rye 70c; potatoes 80c; apples 50c; fowls 11c; butter 25c; eggs 27c.

Paulding Co., Oct. 23.—Wheat and pastures looking well. Farmers putting up the second crop of timothy and some cutting spring seeded clover. Acreage of wheat sown is small. Corn a good crop and ready to husk. The usual quantity of live stock being fed. Potatoes are rotting badly. Sugar beets are a good crop. Some apples and about all picked. Wheat \$1.10; oats 32c; potatoes 75c; apples 55c; chickens 11c; geese 10c; butter 25c; eggs 30c.

Shelby Co., Oct. 25.—Corn all cut and a fair crop. Wheat yielded from 10 to 20 bushels per acre. Late potatoes a very poor crop. About half the usual acreage of wheat sown. Clover seed a poor crop. Not a great deal of live stock on hand to feed. Apples plentiful. Wheat \$1.05; oats 32c; potatoes 50c; butter-fat 25½c; eggs 28c.

Wisconsin.

Jackson Co., Oct. 25.—Fine autumn weather. Threshing not all done owing to wet weather earlier. Small grain good but injured some in stack. Corn and beans a failure with few exceptions. Early potatoes good; late potatoes rotted badly on heavy soil. Less grain sown than expected, owing to late threshing. Hogs going to market in poor condition; other stock is looking well and pastures are good. Apples good. Very little grain being marketed. Rye 90c; oats 33c; potatoes 40c; butter-fat 28c.

WINCHESTER

CARTRIDGES

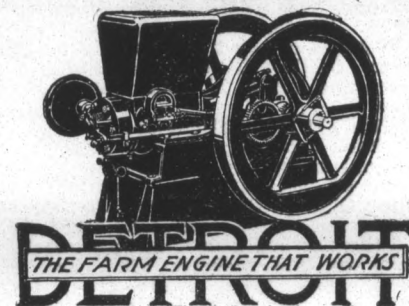
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Markets.

SUSPENSION OF THE WEEKLY WEATHER FORECAST.

The weekly weather forecast of October 25, 1915, was the last regular weekly weather forecast issued until the beginning of the crop season of 1916.—C. F. Schneider, Sec. Director.

GRAINS AND SEEDS.

November 2, 1915.

Wheat.—Fluctuations characterized wheat marketing the past week. Record-breaking receipts in the north-western states and in Canada was the club used by the bears, while the bulls held prices up by reason of extensive European buying. Despite the heavy delivery the United States visible supply increased less than two million bushels during the week. To be able to maintain the price level when wheat is coming forward so rapidly gives dealers as well as farmers increased confidence in the stability of the trade. In the winter wheat sections farmers are more conservative in their selling and this assists in keeping values up. One year ago No. 2 red wheat was quoted locally at \$1.14 per bu. Last week's quotations are:

	Red.	White.	Dec.
Wednesday	1.11	1.08	1.13
Thursday	1.11	1.08	1.13
Friday	1.13 1/2	1.10 1/2	1.15 1/2
Saturday	1.12 1/2	1.09 1/2	1.14 1/2
Monday	1.12 1/2	1.09 1/2	1.14 1/2
Tuesday	1.13 1/2	1.10 1/2	1.15 1/2

Chicago.—December wheat \$1.04 1/2; May \$1.05 1/2.

Corn.—During the week corn values fell off a cent. Excellent weather has aided farmers in securing the crop. The trade is being supported, however, by export transactions. Visible supply decreased 686,000 bushels. One year ago No. 3 corn was quoted at 76 1/2c per bu. Prices for last week are:

	No. 3	No. 3
	Mixed.	Yellow.
Wednesday	67 1/2	68 1/2
Thursday	67 1/2	68 1/2
Friday	67 1/2	68 1/2
Saturday	67	68
Monday	67	68
Tuesday	67 1/2	68 1/2

Chicago December corn 59.5c; May 60.6c per bushel.

Oats.—With values advancing in Canada and persistent buying in the east, the general oat trade has a firm tone. Local trading, however, is quiet. A year ago standard oats were quoted at 50c per bushel. Last week's prices were:

	Standard.	No. 3
		White.
Wednesday	40	38 1/2
Thursday	39 1/2	38
Friday	40 1/2	39 1/2
Saturday	41	39
Monday	41	39
Tuesday	41	39

Chicago.—December oats 39.2c per bushel; May 39.5c.

Rye.—This cereal declined one cent with cash No. 2 now quoted at \$1.02.

Barley.—Steady with malting grades at Milwaukee quoted at 56@63c per bu., and at Chicago at 53@62c per bu.

Peas.—Market firm and higher with supply light. Some export demand is reported. New crop has advanced to \$2.35@2.50, sacks included at Chicago.

Beans.—The local market is a little weaker on beans, with immediate and prompt shipment quoted at \$3.30 and November at \$3.20. At Chicago the market holds firm because of small stocks. Pea beans, hand-picked, good to choice \$3.80@4; common to fair \$3.50@3.75; red kidney \$3.50@4. At Greenville elevators are bidding on a \$2.80 basis. Growers feel that this price is too low considering the conditions of supply and demand.

Clover Seed.—Steady, with quality running poor. Prime spot \$12.25 per bu; March \$12; prime alsike \$10.20. At Toledo prime cash \$12.35; March \$12.30; prime alsike \$10.25.

Timothy Seed.—Prime spot steady at \$3.60 per bushel.

DAIRY AND POULTRY PRODUCTS.

Butter.—Best creamery is 1/2c higher than last week. Demand is good. Offerings moderate. Extra creamery 28c; firsts 26 1/2c; dairy 21c; packing stock 19c.

Elgin.—Light offerings have brought an advance of 1/2c, but market at the advance is easy. The price, based on sales, is 28c.

Chicago.—Higher prices prevail but market is easy. Buyers' wants easily supplied. Extra creamery 28c; extra firsts 27@27 1/2c; firsts 25@26 1/2c; extra dairies 27c; packing 19 1/2@20 1/2c.

Eggs.—Cooler weather has added

strength to market and caused an increase in price of 2 1/2c. Current receipts are quoted at 27c.

Chicago.—Fresh stock is firm at higher prices. Refrigerator goods are now easy. Firsts 27@27 1/2c; ordinary firsts 26@26 1/2c; miscellaneous lots, cases included 20@27c; refrigerator Aprils 22 3/4@23 1/4c.

Poultry.—Moderate receipts keep market firm. Prices of all kinds are higher. Turkeys 14@15c; spring turkeys 19@20c; fowls 9@15c, according to quality; spring chickens 13@15c; ducks 14@15c; geese 13@13 1/2c.

Chicago.—Trade good and receipts liberal. Prices unchanged. Turkeys 10@14c; spring turkeys 20c; fowls 10@12 1/2c; springs 13c; ducks 12@13 1/2c; geese 10@14c.

FRUITS AND VEGETABLES.

Apples.—Market shows strength at an advance for higher grades. Fancy \$3@3.50 a bbl; common \$1.25@1.50. At Chicago market is well supplied. Not much change in prices. No. 1 Greenings \$2.50@2.75; Jonathans No. 1, \$3; McIntosh \$2.75@3; Wageners \$2.25@2.75; Spies \$2.50@3.25.

Potatoes.—Demand is good. Nearly all business is in Minnesota stock. Minnesotas quoted at 65@70c; Michigan 60@65c per bu. At Chicago the market is quiet and prices slightly lower. Michigans are not quoted. Prices range from 43@50c. At Greenville 35@40c per bu. offered, with few moving at those prices.

GRAND RAPIDS.

Fresh eggs continue scarce and high, with quotation at 30c to farmers. Butter market is steady. White pea beans still around \$3. The potato situation has not changed materially, with prices on this market in a small way around 60@65c, while outside loading stations are quoting at 40c. Loose hay in loads is worth \$12@16. Grain prices at mills as follows: No. 2 red wheat \$1.05; oats 37c; corn 70c; rye 85@90c; buckwheat 75c.

DETROIT EASTERN MARKET.

The poorer grades of apples moved slowly on the Eastern Market Tuesday morning. Good fruit had a better sale. Prices ranged from 50c@1.50 per bu; potatoes 60@95c, according to quality; onions 60@85c; cabbage 35@45c; butter 35c; chickens \$1.25 per pair; loose hay a little slow with quotations at \$18@22 per ton.

LIVE STOCK MARKETS.

Buffalo.

November 1, 1915.

(Special Report of Dunning and Stevens, New York Central Stock Yards, Buffalo, N. Y.)

Receipts of stock here today as follows: Cattle 245 cars; hogs 140 d. d.; sheep and lambs 75 d. d.; calves 1300 head.

With 254 loads of cattle on our market here today, the strictly prime cattle sold at steady to a shade higher prices on the best ones. Two loads of prime Ohio cattle sold for \$9.50. Some of the best Canadians sold for \$8.75, but the market was a strong quarter lower on the medium kind, and in some cases more. There are a few loads of heavy cattle left over unsold, but they are not of the best quality. The stocker trade was good on the best kind, but the common kind sold a shade lower. Do not look for much change in prices for next few weeks.

We had a liberal supply of hogs again today, about 140 double decks, and considering the supply and the quality of the offerings, we had a very satisfactory trade, bulk of the handy weights selling at \$7.85, with a few selected lots at \$7.90, and something on the medium and heavy order up to \$8, a few at \$8.10. Pigs and lights sold at \$7.75 generally. Roughs were rather dull sale and choice kinds sold around \$6.75; stags \$5.50@6. Everything sold that was yarded in time for trade and looks like we should have a decent market the next few days, but would not encourage buying anything to sell too high.

Lamb market was active today, the price being 25c lower than the close of last week. All sold and we look for shade higher prices balance of week.

We quote: Lambs \$8.80@8.90; cull to fair \$7@8.75; yearlings \$6.75@7.50; bucks \$4@5.25; handy ewes \$5.75@6; heavy ewes \$5.50@5.75; wethers \$6.25@6.50; cull sheep \$3.50@5; veals, good to choice \$11@11.25; common to fair \$8.50@10.50; heavy calves \$6@9.

Chicago.

November 1, 1915.

October 25, 1915.

Receipts today. 17,000 22,000 21,000
Same day 1914. 21,982 35,777 29,583
Last week. 51,316 94,444 74,015
Same wk 1914. 48,566 137,923 156,173
Only 836 cattle, 134 hogs and no

sheep were shipped from here last week, comparing with 18,953 cattle, 23,593 hogs and 50,207 sheep shipped out in the same time last year. Hogs received averaged only 204 lbs. Cattle were steady to stronger today, hogs about 5c higher and sheep and lambs active and steady. Prime hogs sold at \$7.70, and part of a load that averaged 210 lbs. brought \$7.75.

Cattle prices developed a further weakness during the past week, with larger offerings of common and middle kinds than could be disposed of readily, and the rank and file sold lower. The bulk of the steers sold at \$7.40@9.75, and the decreased offerings of prime little yearlings enabled sellers of these to make better terms with buyers, a \$10.60 top being a dime higher than recent tops. Interior to fair grass steers went at \$4.50@6.50, warmed-up steers at \$6.60@7.45, medium to good handy steers at \$7.50@8.95, and good to choice corn-fed lots at \$9@10.25, but very few went over \$10, aside from yearlings. An exceptional prime lot of steers that averaged 1515 lbs. brought \$10.25. The best class of yearlings sold at \$10@10.60, top being paid for 31 fancy Angus yearling steers and heifers that averaged 866 lbs. Choice heavy steers were bought as low as \$9.50, and really heavy cattle were discriminated against more than ever. Good yearlings sold at \$9 and upward, and yearlings sold all the way down to \$7.25@8.25 for common to fair kinds. Cows and heifers of the butcher class type, in common with steers valued at \$9 and upward, were active and higher during the first half of the week, but sold off later, declines being pronounced, with a poor demand. Ordinary to prime cows and heifers sold at \$4.35@9.50, the best cows going at \$7@7.15, and only a few prime yearling heifers went over \$8.50. Cutters sold at \$4.10@4.60, canners at \$3@4 and bulls at \$4@7.50. Calves of the light-weight vealer class sold frequently at \$9.50@11, with sales down to \$4@3.50 for common to good heavy weights.

Hogs opened last week with a small advance in prices, top being \$8, but rapid declines took place on subsequent days, with packers insisting upon lower values, notwithstanding the much smaller receipts. Prices ruled the lowest seen in two months, with the bulk of the transactions covering a range of about 70c per 100 lbs. As light weights comprised the larger part of the daily runs, their decline in prices was more marked than that in the heavier hogs. The packers acted in a very independent manner and left many hogs unsold at the close of trading hours daily. The average quality of the receipts was apt to be poor, including a large number of light mixed offerings, and the declines carried the underweight light hogs to very low levels, many going at \$7 and under. At the week's close heavy packing hogs sold at \$6.25@6.80, heavy shipping hogs at \$6.85@7.55, selected butchers at \$7.30@7.65, stags at \$6.50@7.10 and pigs at \$4.25@7.

Lambs and sheep opened last week at uneven prices, with an unexpectedly large Monday supply for these times, one firm having 13 cars of range lambs, but on other days good advances took place under much smaller offerings. Prime lambs sold up to \$9.25, and there was a very good representation of fat native lambs, with some big consignments of range Idaho, Wyoming, Montana and Washington lambs. Demand was keenest for prime lambs weighing from 65@75 lbs., and was poorest for offerings weighing upward of 85 lbs., with bulky offerings selling to poor advantage, especially when weighty. The week's receipts of yearlings, sheep and lambs were meager, and the supply of fat flocks was greatly inadequate. Sheep prices changed little with wethers selling at \$5.75@6.50, ewes at \$3@5.80 and bucks and stags at \$4.25@5. Lambs declined after the early advances, closing at \$6.50@8.85, while heavy lambs of all grades sold at \$7.25@8.65; yearlings sold at \$6@7.50.

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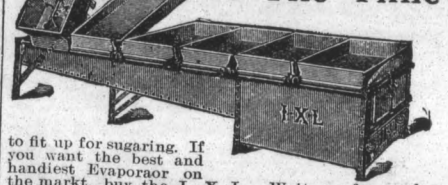
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Some very Choice young bulls from one to twenty months old sired by Our Junior Herd Sire. From large Producing Dams. Prices Reasonable.

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WE CAN SELL STOCKERS and feeders, also feeding lambs, consign hereto us, or if you are in the market for feeding stock write or wire us. **HARPSTER COMMISSION COMPANY,** Toledo Union Stock Yards, Toledo, Ohio

HAY OUR NEW LOCATION—
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FRUIT Growers, we want your entire crop. Highest market prices. Write for stencil. **THE E. L. Richmond Co., Detroit, Mich.**

FARMERS—We are paying from eight to eleven cents above the highest official Detroit Market quotation for your eggs shipped direct to us by express. Write us for information. It will pay you. **American Butter & Cheese Co., Detroit, Mich.**

Farms Wanted

40 or 50 acres with stock, tools and crops preferred, in Oakland, Macomb or Livingston County, or near. Also small farm, 10 to 20 acres within 50 miles of Detroit. Send full particulars.

L. Johns, Manager, Farm Department.
Walter C. Piper, Holden Building, Detroit.

THIS IS THE FIRST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

October 28, 1915.
Cattle.

Receipts 2576. There was a good fair run in all departments at the local yards but nearly everything was late in arriving, especially so on the Grand Trunk on Wednesday, it being about 4:30 before their stock was yarded. The cattle trade continues dull and prices are no higher than they were a week ago; the quality was again common and there was hardly a steer in the yards good enough to bring over \$7.25@7.50 per cwt. Again the farmers cut a big figure in the trade, and a large number were bought by them and shipped back for feeding purposes. The milk cow trade was a trifle better than last week, good ones bringing \$85. The close was steady but no higher. Best heavy steers \$7.50@8; best handy weight butcher steers \$6.50@7.25; mixed steers and heifers \$5.50@6.25; handy light butchers \$5@5.50; light butchers \$4.50@5; best cows \$5@5.75; butcher cows \$4.50@5; common cows \$4@4.25; canners \$2.50@3.75; best heavy bulls \$5.50@5.75; bologna bulls \$5@5.50; stock bulls \$4@4.75; feeders \$6@7; stockers \$5@6; milkers and springers \$4@8.50.

Haley & M. sold Applebaum 4 cows av 1055 at \$4.50; to Hammond, S. & Co. 1 do wgh 860 at \$3; to Kamman 4 butchers av 667 at \$5.35; to Schumaker 34 feeders av 714 at \$6.35, 4 stockers av 637 at \$6.35; to Schlischer 1 cow wgh 410 at \$4.50, 2 do av 660 at \$5.50, 2 do av 1040 at \$4.80; to Mich. B. Co. 38 butchers av 690, \$5.50; to Hoffend 6 do av 657 at \$4.75, 3 do av 673 at \$5; to Kamman B. Co. 29 steers av 1030 at \$6.65; to Newton B. Co. 20 butchers av 1057 at \$5; to Hammond, S. & Co. 22 do av 1016 at \$6.90, 18 do av 916 at \$5.90; to Schnader 17 steers av 960 at \$7; to Breitenbeck 2 cows av 995 at \$4.50; to Bray 2 stockers av 790 at \$6.25; to Schneider 12 do av 623 at \$6; to Hammond, S. & Co. 2 bulls av 1240 at \$5.40; to Thompson Bros. 5 cows av 934 at \$4, 3 do av 1070 at \$5.25, 17 steers av 770 at \$6.25, 5 cows av 1000 at \$4.15; to Newton B. Co. 18 butchers av 746 at \$5.30; to Rice 32 stockers av 650 at \$5.40; to Sullivan P. Co. 10 butchers av 827 at \$5.25; to Reardon 4 stockers av 662 at \$5.35; to Clark 12 do av 627 at \$5.50.

Reason & S. sold Bresnahan 6 cows av 916 at \$3.75; to Rattkowsky 5 butchers av 744 at \$4.65; to Hammond, S. & Co. 1 bull wgh 1040 at \$5; to Thompson Bros. 6 steers av 1070 at \$7.35, 5 butchers av 756 at \$5.40, 3 steers av 993 at \$7, 1 cow wgh 1010 at \$5, 15 butchers av 632 at \$5.40, 2 cows av 1100 at \$5.80; to Bresnahan 5 do av 1100 at \$5, 2 canners av 915 at \$3.75; to Thompson Bros. 1 heifer wgh 840 at \$5.75; to Feldman 2 bulls av 1265 at \$5.50; to Bresnahan 2 cows av 1075 at \$5, 1 do wgh 1060 at \$3.75.

Veal Calves.

Receipts 512. The veal calf trade was about 50c higher than last week but heavy grades were very dull. We quote: Best \$10@11; others \$7@9.50.

Bishop, B. & H. sold Hammond, S. & Co. 6 av 155 at \$10.50, 2 av 125 at \$8, 5 av 155 at \$10.50, 2 av 135 at \$8, 7 av 120 at \$8.50, 2 av 140 at \$9, 2 av 200 at \$10; to Newton B. Co. 9 av 165 at \$10.75, 3 av 200 at \$11; to Sullivan P. Co. 3 av 140 at \$8.50, 25 av 160 at \$10; to McGuire 10 av 169 at \$10.75; to Thompson Bros. 2 av 150 at \$11; to Nagle P. Co. 15 av 150 at \$10, 5 av 150 at \$10.50, 8 av 145 at \$10, 2 av 185 at \$11, 3 av 175 at \$9, 3 av 145 at \$10.50.

Sheep and Lambs.

Receipts 7856. The sheep and lamb trade opened up on Wednesday 15c higher tops selling at \$8.90. Thursday's prices were steady and tops went at \$8.85@8.90; the trade was fairly active. Best lambs \$8.50@8.75; fair lambs \$8@8.25; light to common lambs \$6@7.50; fair to good sheep \$4.50@5.50; culls and common \$3@3.50.

Haley & M. sold Nagle P. Co. 24 sheep av 120 at \$5, 5 lambs av 60 at \$8, 3 sheep av 160 at \$5.25, 2 do av 115 at \$5.50; to Armour & Co. 53 lambs av 80 at \$8.90, 172 do av 85 at \$8.90, 70 do av 75 at \$8.90, 23 sheep av 110 at \$5.50, 98 lambs av 75 at \$8.90, 64 do av 70 at \$8.90; to Costello 62 do av 50 at \$7.50; to Nagle P. Co. 24 sheep av 115 at \$5.

Hogs.

Receipts 5055. In the hog department nothing was doing up to noon, but prospects are that they will be fully 10@15c lower here than on Wednesday, or as follows: Mixed yorkers \$6.85@7.15; pigs \$6@6.50.



Mr. Sidney R. Feil, Pres't The Feil Mfg. Co.

A 60 Days' Test Offer For You

More than half a million farmers and stockmen have already accepted my liberal offer to rid their stock of worms. I have shipped thousands of tons of SAL-VET on my TRY-BEFORE-YOU-PAY Plan and have received thousands of grateful letters from men who saw with their own eyes the great benefits their farm animals received from feeding SAL-VET.

Now I want to PROVE TO YOU, on your farm, what I have proved to these men. I want to show you how SAL-VET will rid your stock of worms—make them thrive better—put them in healthy condition, make them more profitable in every way and LESS LIABLE TO DISEASE. Remember, I prove all these things before you pay. Here is my "make-good" offer:

I'll Rid Your Stock of Worms I'll Prove It Before You Pay

Just fill out the coupon at the bottom of this advertisement—tell me how many head of stock you have, and I'll ship you enough

The Great
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to last them 60 days. You pay the freight charges when it arrives, feed as directed, and if SAL-VET does not do all I claim, and you make a specific report in 60 days, I'll cancel the charge. You won't owe me a penny.

Sidney R. Feil
Pres. The Feil Mfg. Co.

What SAL-VET IS and DOES:

SAL-VET is a medicated salt for farm animals. It kills and expels the blood-sucking, disease-breeding, stomach and intestinal worms which cause 90 per cent of all live stock losses. It aids and improves digestion, makes all stock keep healthier, gain faster and grow more profitable for you. It requires no dosing, no drenching, no starving; no bother at all. Read this letter:

Prices

40 lbs...\$ 2.35
100 lbs... 5.00
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300 lbs... 13.00
500 lbs... 21.12
No orders filled for less than 40 lbs. on this 60 day trial offer. Shipments for 60 days' trial based on 1 lb. of SAL-VET for each sheep or hog and 4 lbs. for each horse or head of cattle.

"SAL-VET" has been a great help to my stock, especially to my horses, which are looking better than they have for a long time. Also fed "SAL-VET" to my hogs, which are now entirely free from worms.
ORSA RUPLE, Rt. No. 3, Watervliet, Mich.

I could print thousands of letters like this, but the best proof is what you see with your own eyes right on your own farm. You can't afford to put off trying SAL-VET a day longer. Don't send me any money. Just fill out the coupon—mail today and I will ship you the 90 days' supply of SAL-VET just as agreed. Address:

SIDNEY R. FEIL THE FEIL MFG. CO., Mfg. Chemists CLEVELAND, O. Dept. 80 President

Send No Money—Just The Coupon

THE FEIL MFG. COMPANY, Dept. 80-11-6-15 Cleveland, Ohio

Ship me enough SAL-VET to last my stock sixty days. I agree to pay the freight, feed it as directed, and will then pay for it if it does what you claim. If it fails and I so report specifically in 60 days you are to cancel the charge and I will owe you nothing.

I have hogs sheep horses cattle.

Name P. O.

Shipping Sta. State.

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AC plugs, because of their superiority shown on comparative tests, were adopted for regular equipment by these leading manufacturers—

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There are a few large manufacturers, however, such as Ford, Overland, Maxwell and Studebaker, who do not use our plugs but there is an AC plug made for each one of these cars which will give the user greater efficiency and a better running car.

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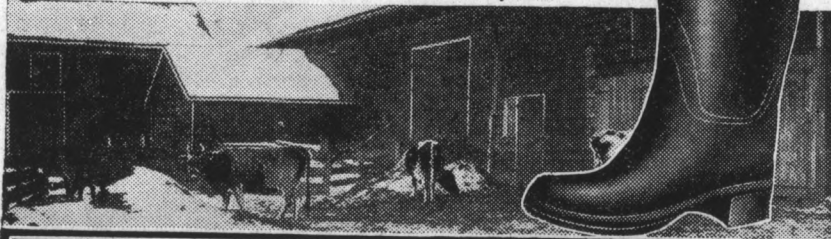
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Heavy work seems easy if your feet are warm and dry. Wear good, solid, comfortable, warm Elephant Head Rubber Boots.

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the Practical Poultry Paper for Practical Poultry Raisers, devoted to the poultry interests of Michigan, Ill., Ind., and Wis. It should be your paper. Bright, Snappy and Alive. 50c 1 year, 3 years \$1.00. Send 12c in stamps for three months trial. Big 4 Successful Poultry Journal, 445½ Plymouth Co., Chicago, Ill.

POULTRY.

Barred Rock Cockerels—for Sept. and Oct. fairs, 500 yearling hens and pullets for shows and breeders. W. C. Coffman, R. 6, Benton Harbor, Mich.

BARRED ROCKS—Parks 200-egg strain stock and eggs in season. FRED ASTLING, Constantine, Michigan.

BIG BARGAIN SALE OF BARRED ROCKS. 200 yearling hens that have laid 140 eggs each since Jan. 1st, 1915 to Aug. 1st, 1915, an average of 20 eggs per hen per month. Prices 6 hens \$10, 12 hens \$18, 20 hens \$25, 50 hens for \$60. They are pure bred, large and closely related to our first winners at Chicago, Cincinnati and Indianapolis shows. Suitable males to go with them at \$2 to \$5 each. 1500 young birds growing. G. EARL HOOVER, R. 7, Matthews, Indiana.

BIRD LAWN BUFF ROCKS, N. C. Buff Leghorns and Blue Orpingtons. Chicago, Madison and Minneapolis winners. Show birds after November 1. A few Black Orpington cockerels and pullets for sale at \$1.50 to \$4 each. Bird Lawn Farm, Lawrence, Mich.

BOURBON RED TURKEYS FOR SALE. Address, Mrs. O. L. MAGEE, Boyne Falls, Mich.

FERRIS WHITE LEGHORNS FOR EGGS
Trapnested 15 years. 60 first prizes, 15 big shows. Large, vigorous, laying, breeding, exhibition stock \$1.50 up. Shipped C. O. D. or on approval. Satisfaction or money back. 36 page free catalog gives prices and particulars. Write for it and save money. FERRIS LEGHORN FARM, 934 Union, Grand Rapids, Michigan.

FOR SALE—S. C. White Leghorn Cockerels. No better stock offered. Price each \$1, Two \$1.75, Five \$3.50. Prompt shipment. M. Mayer, Jr., Merrill, Michigan.

Pine Crest White Orpingtons, shows, special prices on pens, pullets, and cockerels and Belgian Hares. Mrs. Willis Hough, Pine Crest Farm, Royal Oak, Mich.

Rose Comb Brown Leghorn Cockerels from Mad. Sq. winners \$1.00 each. CLAUDIA BETTS, Hillsdale, Michigan.

RHODE ISLAND REDS and PLYMOUTH ROCKS. Males 5 to 12 lbs. according to age \$2 to \$5; P. R. hens weight 5 to 9½ lbs., eggs 15 for \$1.00; P. R. eggs \$5 per 100. Mammoth Bronze Tom Turkeys, 8 to 38 lbs. according to age \$3 to \$25, 10 eggs \$3. A. E. Crampton, Vassar, Mich.

R. C. and S. C. RHODE ISLAND REDS from prize R. strains, fine layers with long bodies and rich red color. JENNIE BUELL, Ann Arbor, Michigan.

Rose Comb Brown Leghorn Cockerels—A few choice hatched, bred from prize winners, well matured, good color, \$1 each. E. HIMEBAUGH, Hillsdale, Mich.

SILVER Laced Golden and White Wyandotte Eggs for hatching. Ten cents each or 30 for \$2.50. I pay parcel post charges. C. W. BROWNING, Portland, Michigan.

White Wyandotte a fine lot, male and female at low price and write your wants. DAVID RAY, 202 Forest Ave., Ypsilanti, Mich.

White P. Rocks. Pekin and white runner ducks, White guineas, eggs and day old ducks and chicks. H. V. HOSTETLER, St. Johns, Michigan.

AGENTS WANTED.

to represent a reliable concern canvassing among farmers in your own neighborhood or elsewhere. No experience necessary. Liberal pay, and supplies furnished free to right parties. Reference required. Address, MICHIGAN FARMER, Detroit, Mich.

Getting Pullets Ready for Winter

PULLETS that were hatched at the proper season to make winter layers should be near maturity early in September, at least they should be well grown and feathered. They should not begin to lay before the latter part of October or early in November. If they have had free range, with open-air quarters for roosting, it should be possible to tell what ones to select for winter layers. On the other hand if they have been confined in close quarters and subjected to the attacks of vermin, the chances are that they will not make winter layers at all. At any rate it should be possible to tell the runts and poorly-developed birds and now is the time to discard them.

Many farmers make the mistake of keeping all the pullets and selling off the old hens. We like to cull both flocks. Of the mature birds we keep those that moult early for winter layers and have found the practice successful. The flock of pullets is also carefully culled. Any bird which is backward in development is discarded. There is some reason for this, although it may not at once be apparent. The pullets are not shipped away as broilers, as are the cockerels, but we find a considerable number of the females that are fit only for the shipping coops and these go to market in September. Birds that show any marked variation of coloring, and particularly those that display deformities in bone and carriage are sold for roasters. Such birds might make good layers but they detract so much from the beauty of the flock that the careful poultryman does not care to retain them. Of course, if one expects to do anything in the line of selling eggs

for hatching, he could not afford to have such birds on the place. Some visitor might see them.

The runts lack constitutional vigor, hence they will not make profitable layers. They are also likely to contract disease and perhaps spread it among the flock. In most cases it is the backward pullet, with weak constitution, that develops roup and spreads it broadcast among the flock.

One will do well to get the house ready for the pullets before the birds are taken from the open range. Of course, it is understood that pullets and old hens should never be kept together. The ration that will make the pullets lay will be altogether too fattening for the older birds. Quarters for the pullets should be thoroughly cleaned and whitewashed. Whitewash, besides serving as a disinfectant and vermin-exterminator, brightens up the houses and makes them lighter for the short dark days of winter.

Pullets cannot be taken from the open range and outdoor roosting sheds and placed in closed houses without serious results. Nothing but open-front buildings should be used. Give the closed house to the old birds. They can stand it better. The most sensible way, however, is to knock out part of the front wall and make an open-front house.

Get the pullets into their winter quarters before they begin to lay. Put up nests and arrange everything for their convenience and comfort. Do not change them from one building to another if it can be avoided. Then feed them the proper sort of ration and wait. If they have been properly bred, they will do the rest.

Advertising Poultry

ANYBODY having anything to sell must advertise in some manner in order to let others know that his product is for sale. Therefore, the poultryman, whether he be a large fancier or not, should advertise if he has eggs or surplus stock for sale. If the amount is very small, telling the neighbors will often be sufficient advertising to bring a buyer, but when the amount of stock for sale is larger this method will not let enough people know to produce enough buyers. Therefore other means of advertising are necessary. The printed advertisement is the most common, most efficient and most economical means of letting others know that you have something to sell.

If you want to sell eggs for hatching, or breeding stock at a moderate price, it is advisable to run an advertisement in some farm paper. If you are a large fancier, or extensive poultry raiser, you could well afford to try journals and high-priced farm papers. This is a business that turns out the most profitable to the man that can yell the loudest, especially if he can back this up with his stock. The bantam and pigeon breeders could well afford to use space in such periodicals as American Boy and Youth's Companion.

Always advertise, according to the quantity and quality you have to sell. A person having only \$500 worth of products to market, would be foolish to spend \$300 in advertising it. If you have fancy stock for sale use liberal space in the fanciers' journals which go mostly to people interested in fancy poultry keeping. If you desire to cater to the practical poultry raisers use space in the leading agricultural papers, and utility or general poultry journals.

A good advertisement is one that attracts attention and convinces the reader that you are honest and have the particular kind of stock he wishes. In making up your advertisement use

your name, a brand, or a good cut, and make it stand out prominently in the advertisement. If possible use something original as it is necessary to have something to attract the attention of the casual reader to your ad. The most successful advertiser keeps his space before them all the time, change the size and wording according to the season of the year and products to market.

The advertisement has done its part when it brings you the prospective customer, it is then up to you to make the sale. It is exceedingly profitable and in line with up-to-date business to have special stationery in the form of envelopes and letter heads. It is good business to go still further and use a typewriter in answering all your inquiries; it gives a businesslike appearance to your correspondence. It is surprising what a large number of farmers and poultrymen have already fallen in line.

Describe your stock, without undue exaggeration, price your products reasonably, advertise your products, and deliver what is ordered, and you can't help but win out in the end.

Remember, advertising is the secret of success in the present day business; farming and poultry raising are as much businesses as any other line of commercial endeavor.

Lately poultrymen have begun advertising their products on sign boards placed along the roads and railroads. In these days of automobiles, roadside advertising has become a most profitable way of advertising.

Texas. F. W. KAZMEIER.

It is never advisable to keep the hens and pullets in the same flock for the reason that the quantity of food required to keep a pullet in good laying condition will bring an old hen down with fat. There is little danger of over-feeding pullets, and it is perfectly safe to give them all they will eat.

Around the Hen-House
When you close up the hen-house for the night, or hurry out after the skunk or weasel who's got at the fowl, if there's a noise in the barn or something you want in the cellar—when you need real light instantly—you need an

EVEREADY FLASHLIGHT

a complete electric light that you can carry with you, ready anytime to throw its powerful rays right where you want them. No hunting for matches; no danger of fire or explosion or of lights blowing out.

75 styles to pick from at 75c. to \$7.50, including No. 2631, illustrated—nickel plated pocket light, 1½ x 6½ in., that sells for \$1.50 complete with battery and lamp. See the EVEREADY Line at the nearest dealer's and write us for illustrated catalogue No. 73.

American Ever Ready Works
of National Carbon Co.
Long Island City New York No. 2631

Our "BRIDAL" GIFT

A New Valuable Premium with any Imperial Range you want. Reserve yours NOW by simply sending in your name and address. Do this even though you are not quite ready for a range.

IMPERIAL RANGES have a heat-retaining Stone Oven Bottom, Odor Hood, Ash Sifter, all exclusive features. Will not warp or crack. Sold from factory at factory prices. Save \$10 to \$25. Test yours 30 days at our risk. Guaranteed satisfactory. Write today for big FREE catalog. Cash or Credit Terms and full particulars about the handsome premium we give free.

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Grange.

TRI-COUNTY POMONA MEETING.

The tri-county Grange meeting, attended by the Pomona Granges from the counties of Washtenaw, Lenawee and Wayne, and held October 16 at the opera house in Belleville was a most enjoyable and profitable gathering, and a success from every point of view. The fifth degree work, conferred by the Belleville degree team in the morning, and given to a class of 16 candidates, was flawlessly given and the dinner served at noon, with covers laid for 200 was a sumptuous and elaborate one. The afternoon meeting was an open one, with a large number who were not grangers, present. Addresses were given by John C. Ketcham, master of the State Grange, C. H. Bramble, Overseer of the State Grange, Master A. E. Illenden, chief executive of Lenawee County Grange, and his brother, C. H. Illenden.

Master Ketcham spoke of his western trip and of his visit to the Colorado Granges, and emphasized the splendid opinion entertained by the organizations in other states of the Michigan Granges. Master Illenden told of the worth of the county sanitary live stock agent in Lenawee county and advocated the employment of one in every county, saying that during such plagues as the foot-and-mouth disease the services of an expert were invaluable. The program was well balanced with musical numbers which were given by the Lenawee band and by Prof. Thomas, a veteran vocalist who has sung at many state Grange meetings.—A. C. A.

POMONA MEETINGS.

Kent County Pomona had a meeting with Success Grange at Seeley's Corners, that was a success from every standpoint. A fine dinner was served at noon by the ladies of Success Grange immediately after which the meeting was called to order by the worthy Master, Hon. T. H. McNaughton. A short business session was held and then Mrs. Spandenbergh, the lecturer, took charge of the program. The address of welcome was given by the Success Grange Master, S. P. Reynolds, and the response to this by Wesley Johnson, of Lowell. Mrs. Alice Reynolds gave a recitation and Mrs. Anna Richardson, Cascade Grange lecturer, followed this with an address. There was music by Miss Ferrall and a paper by Mrs. Earl Curtiss; another recitation and a most interesting talk by Mrs. Dora Stockman, State Grange lecturer. Supper was then served and the evening session opened with two recitations by J. W. Brass. These were of his own composition and greatly enjoyed. Mrs. R. S. Coleman and Mrs. Frank Daniels read interesting and instructive papers. A dialogue was given by Bowne Center Grange and a play entitled "A Slight Mistake," by South Lowell Grange, was a huge success and lots of fun. The ladies of Success Grange entertained about 90 people for dinner and nearly as many for supper. There were 175 present in the evening session. Two addresses that were not on the program were given in the evening by Assistant Secretary of the State Board of Health, McClure, and by farm expert Skinner. All present at these meetings came away thinking them the best they had ever attended.

Ionia County Pomona meeting in Danby, October 20, was a very interesting and profitable one. After a delicious chicken-pie dinner the meeting for the afternoon was called to order by Master Fred Eddy, who, after a short business session, turned the program over to the Grange lecturer, Mrs. Frank Daniels. Charles Linquist, of Sunfield, made the opening address on "Benefits of the Pavedway to Ionia County." This was followed by a most interesting discussion. Mrs. Albaugh of the Banner Grange, of Orleans, gave a reading, and this was followed by a lecture on "What the Grange may mean to a Community," by John C. Ketcham, State Grange Master. This session was closed by a roll call of Granges to which all but one Grange responded. At the evening session music was furnished by the Pilkington orchestra of Portland. John C. Ketcham spoke again, and a paper by Mrs. Frank Daniels was read.

Farmers' Clubs

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

FROM THE ASSOCIATIONAL SECRETARY.

It is earnestly requested by the secretary that all Clubs in the state send two delegates to the annual meeting to be held in the Senate Chamber at Lansing on December 7-8. Also to urge all interested in Club work to attend this annual meeting, as the program promises educational benefits and entertainment to all. The program will be published in full next week.

Mrs. J. S. BROWN.

Secretary.

FARMERS' CLUB FAIRS.

Washington Center Farmers' Club held their annual fair at the town hall. The weather man seemed to be in doubt as to the weather but finally decided in our favor and gave us a pleasant day. The hall was nicely decorated with flags and bunting. The Gleaners of Hope Arbor furnished a very pretty booth, composed of Gleaner colors, red and yellow, and emblems which added much to the decorations. The display of fruit, grains and vegetables, was very good though not as large as usual, and did not do justice to the splendid crops in this vicinity. There was a splendid display of fancy work, the largest in the history of the fair. The dinner which is always the main attraction, could not be beaten for quality or for quantity and was served at the home of Mr. and Mrs. B. S. Gillman, and about 150 people were helped to forget that there ever was a "starving Gratiot." The principal feature of the afternoon was an address along educational lines, by T. H. Townsend, of St. Johns, Superintendent of the Clinton county schools. Mrs. Loomis, of St. Johns, also gave a short interesting talk, which was much enjoyed. At the close of the program the crowd was invited to step outside and be photographed by C. M. Chaffin. A box of products from Tennessee, sent by Mr. and Mrs. Frank Dodd, former members of the Club, came a day too late for the fair, also letters and cards from other members. These will be on exhibition at the next Club meeting, which will be held at the "Cottonwoods," with Mr. and Mrs. W. E. Long, the second Thursday in November.—Mrs. S. N. Y.

CLUB DISCUSSIONS.

Want Agricultural School.—Clover Leaf Farmers' Club held its regular meeting at the home of F. D. Weatherwax, October 27. About 70 were present. The regular business was transacted after which Mr. Decker, of the high school, told of the extension work of the M. A. C. The president appointed a committee to secure an agricultural school for Plainwell. An excellent program was given. Refreshments were then served by the young men, and the remainder of the evening was spent in games and visiting. The next meeting will be held at the home of Mr. Humphreys.—Mrs. Starr Fenner, Cor. Sec.

Elect New Officers.—The Charleston Farmers' Club met Wednesday, October 20, at the home of Floyd Coville, with an attendance of 14 of the members. Mr. Jason Woodman was present in the forenoon and gave the farmers a warning about hog cholera, and explained how to prevent the disease from spreading. His advice was to count the hogs at every feeding to see that none were missing. He also told about the danger of spreading the disease by throwing out scraps of meat that had been shipped. At noon a picnic dinner was served which was enjoyed by all and after which the annual election of officers took place. The following officers were elected: President, Floyd Coville; vice-president, John Sherman; secretary, Mrs. L. J. Bradley; treasurer, Mrs. Floyd Coville; business manager, L. J. Bradley. Mrs. Floyd Coville, Mrs. Wm. Henson and Mrs. O. B. Imus, were appointed as a committee to arrange for a contest in the near future. The name of Mrs. Elvin Pike was added to the roll. Mrs. Olin Bera was appointed to serve as lecturer for the November meeting, which will be held at the home of Mrs. A. D. Schrackengast, the third Wednesday in November. A short program was also rendered, consisting of a song service, and a reading by Mrs. Simpson.

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O. I. C. SWINE—Are you on the
choice bred sow to farrow the last of Aug. or fore
part of Sept. If you are, write me, I have them.
A. J. GORDEN, R. No. 2 Dor, Michigan.

O. I. C. Serviceable boars, choice Gilts not bred, Spring
pigs not akin, also Toulouse Geese. Write for
low prices and photo. Alvin V. Hatt, Grass Lake, Mich.

O. I. C. GILT BRED SPRING PIGS
ready to ship. H. J. FERLEY, Holt, Michigan.

O. I. C's—Bred sows, bred gilts, spring pigs
both sex. Service Boars. Price low.
A. R. GRAHAM, Flint, Michigan.

REGISTERED O. I. C. BOARS & GILTS
High class fall pigs at reasonable prices.
J. CARL JEWETT, Mason, Mich.

O. I. C. SPRING BOARS of good type and
Red Polled bull calves.
John Berner and Son, Grand Lodge, Mich.

O. I. C. SERVICEABLE BOARS. Priced to
sell, and recorded in buyer's name.
H. W. MANN, Dansville, Michigan.

O. I. C's STRICTLY BIG TYPE.
March, April and May pigs sired by Lengthy Prince,
White Monarch and Frost's Choice, all big type boars
and sows weighing from 500 to 700 lbs. with quality
second to none. Can furnish in pairs not akin. Prices
reasonable.
Newman's Stock Farm, Mariette, Mich. R. 1.

O. I. C's two yearling boars and a lot of last Spring pigs
not akin. Also a lot of this fall pigs \$8 each
at 8 to 10 weeks old. Good stock. 1/2 mile west of depot.
Otto B. Schulze, Nashville, Mich. Citizens phone 124.

O. I. C's. Spring Boars ready for fall
service. Write
JULIAN P. CLAXTON, Flint, Michigan, R. 8.

O. I. C. SERVICEABLE BOARS From best of stock.
Priced to sell. Reg.
free. E. B. MILETT, Fowlerville, Michigan.

O. I. C's Serviceable boars, summer and
fall pigs. I pay express.
G. P. ANDREWS, Dansville, Michigan.

O. I. C. Choice 18 mos. old boar, Grand Champ. at West
A. J. BARKER, BELMONT, MICH. R. No. 16.

O. I. C. and CHESTER WHITE
SWINE.

Boars that have not been beat at the big state fairs
this fall. We have the unbeaten, young herd of
Six State fairs, choice boars and gilts for sale, any age.
Rolling View Stock Farm, Cass City, Mich.

Way Brothers Stock Farm. The home of the big
bone O. I. C. Hog. Stock
for sale. Registered free. J. R. Way, Pompeii, Mich.

BIG TYPE P. C. Either sex, pairs or trios not akin.
Bred sows and gilts. Have several 1000 lb. boar pro-
spects. Absolutely no larger breeding. Everything
guaranteed right. FRANK KRUGER, Ravenna, Mich.

Big Type POLAND CHINA all ages. Herd boar
guaranteed. G. W. Holton, R. 11, Kalamazoo, Mich.

POLAND CHINAS of the big type. Boars ready for
service. Barred Rock Cockerels.
A. A. WOOD & SON, Saline, Michigan.

Large Strain P. C. two extra good Summer Yearling
Spring pigs that are beauties, sired by Big Defender,
the boar that everybody goes wild over. Come and
see him. H. O. SWARTZ, Schoolcraft, Mich.

Large Type P. C. Largest in Mich. Boar pigs ready for
First order gets first choice. Priced to sell. Sired
by two largest boars in State. Free Livery to visitors.
W. E. LIVINGSTON, PARMA, MICH.

LARGE TYPE P. C. Boars for sale. Brood Sow Sale
in February. W. J. HAGELSHAW, Augusta, Mich.

BIG Type Poland Chinas, boars as big, as good as grow
in Iowa with quality to please you.
ROBERT MARTIN, R. F. D. No. 1, Hastings, Mich.

BONED POLAND CHINA Spring Boars and
gilts not akin. Also older stock. Prices right.
CLYDE FISHER, St. Louis, Mich.

Spring Pigs at Half Price:—Bred from
the largest
strain of Poland Chinas on earth, none bigger. If
you ever expect to own a registered Poland China,
this is your opportunity. Get busy and order at once.
Pairs and trios not akin \$15 each. A few bred sows at
\$25. J. C. BUTLER, Portland, Mich. Bell Phone.

BIG type Poland Chinas with quality bred right,
feed right, and priced right to go to their new
homes and do right. A. D. GREGORY, Ionia, Mich.

Breeders' Directory—Continued on page 419.

Veterinary.

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

Catarrh.—Our spring hatched chickens first have a watery discharge at the nose, then it is followed with a heavier mucus. While breathing some of them rattle in throat and head and a few of them have a sort of bunch come on head which appears to close nostril. There is no color or offensive odor to this discharge and my fowls do not appear to be unhealthy. This is the third season I have had trouble with my fowls, notwithstanding the fact that I have fumigated and disinfected their coops. I sold off all my old stock and have nothing but last spring's chickens. These fowls have warm dry quarters in an open-front house. Have tried commercial roup remedies but they fail to do any good. F. P., Cedar Springs, Mich.—Mix together one part salicylate of soda, one part hyposulphite of soda, two parts sulphate of iron, three parts ginger and five parts ground gentian root and give each bird four or five grains at a dose in feed twice a day. Are you sure that your fowls are not sleeping in a draft?

Indigestion—Cracked Heels.—Last winter my four-year-old mare was troubled with scratches; she also got thin, out of condition and yet remains rough coated and unthrifty. When allowed to stand in barn over night a crampy condition of one hind leg takes place and legs stock. O. M. Y., Millington, Mich.—Apply one part oxide of zinc and three parts vaseline to sore heels daily. Mix together one part ground nux vomica, one part of powdered nitrate of potash, one part powdered sulphate of iron, and three parts ground gentian and give mare a tablespoonful at a dose in feed three times a day.

Chronic Heaves.—I have a horse that has a bad case of heaves and chronic cough. C. H., Pinnebog, Mich. As you perhaps know chronic heaves can be palliated, but not permanently cured. Incipient heaves are often curable, but in order to do so, you should feed no clover, or musty, dusty, badly-cured fodder, not much bulky food, the horse should be exercised every day, kept in a clean, well-ventilated stable where plenty of fresh air is admitted day and night. Give 1 dr. of fluid extract lobelia, ½ dr. fluid extract gelsemium, ½ dr. fluid extract nux vomica and 3 drs. of Fowler's solution at a dose in moist feed three times a day.

Colt Improperly Castrated.—I have a pair of colts that have enlarged scrotum following castration; there appears to be a sort of a paunch and I have wondered what is wrong. W. H., Elsie, Mich.—The paunch may perhaps be filled with a watery effusion, or the end of cord may have adhered to skin of scrotum, causing a tumor, if so the scrotum should be opened, bunch cut out, cord shortened and released so that it will retract back into body. This is work for a Vet. and not a serious operation.

Bog Spavin—Thoroughpin.—I have a colt that has bog spavin and thoroughpin, causing no lameness. What treatment do you advise? H. Q. L., Atlanta, Mich.—Leave it alone until you stable colt and clip off hair and apply one part powdered cantharides, one part red iodine mercury and eight parts lard every ten days or two weeks.

Chronic Laryngitis.—I have a three-year-old colt that has had a bad cough for several months. A. L., Centralia, Ill.—Apply one part tincture iodine and three parts camphorated oil to throat once a day. Put 1 oz. guaiacol in 15 ozs. of raw linseed oil and give 1 oz. at a dose three times a day.

Cow Gives Bloody Milk.—We have a young Holstein cow with first calf which gives bloody milk from one teat. J. J. G., Hartford, Mich.—Put ½ pt. tincture arnica in 2 qts. water and apply to bruised udder two or three times a day. Plenty of bedding and careful milking will have a whole lot to do with her recovery.

Barren Cow.—I have a cow that dropped her third calf last June; nine weeks later she came in heat and since then has apparently been in heat three-fourths of the time. Now, I would like to know what to do with her. J. H., Marion, Mich.—She will not breed, therefore you had better beef her.

Wart on Teat.—A wart came on the side of teat and I pulled it off with bladder twine but since then it has grown again; therefore, I would like to know how to treat it. J. W. Y., Albion, Mich.—Apply a saturated solution of salicylic acid in alcohol to wart every day or two.

Michigan Farmer's Club List.

For the benefit and convenience of our subscribers we have arranged the following list of papers. Besides the money saved they save the trouble and expense of sending each order separately.

EXPLANATION.—The first column gives the paper's regular subscription price. The second column price is for the Michigan Farmer and the other paper, both for one year. Add 50 cents when the Michigan Farmer is wanted three years, or \$1.00 if the Michigan Farmer is wanted five years. All combination orders may be handed to our agents or sent to us, as is most convenient.

Write for prices on publications not listed.

Subscribers to the Michigan Farmer whose time is not up for one year or more, may have as many other papers as wanted by deducting 50 cents from the second column price. This takes care of those who subscribed for three or five years a year or two ago.

We send sample copies of the Michigan Farmer only.

Mention if you are a new or renewal subscriber. Renewals will be dated ahead from their present date.

NAME OF PUBLICATION.	See explanation above
Daily (6 a Week) on R. F. D. only.	\$ 1
Free Press, Detroit.....	2 50 2 50
Journal, Detroit.....	2 50 2 50
Times, Detroit.....	2 50 2 50
Herald, Grand Rapids, Mich.....	2 50 2 50
News, Grand Rapids.....	2 50 2 50
Press, Grand Rapids.....	2 50 2 50
Courier-Herald, Saginaw, Mich.....	2 50 2 50
News, Saginaw.....	2 50 2 50
Tribune, Bay City, Mich.....	2 50 2 50
Blade, Toledo, Ohio.....	2 50 2 50
News-Boe, Toledo, Ohio.....	2 50 2 50
State Journal, Lansing, Mich.....	2 50 2 50
Tri Weekly Newspapers	
World, N. Y., City.....	1 00 1 20
Semi Weekly Newspapers	
Journal, Detroit, Mich.....	1 00 1 15
Weekly Newspapers	
Blade, Toledo, Ohio.....	1 00 1 00
Commoner, Lincoln, N. Y.....	1 00 1 05
Enquirer, Cincinnati, O.....	1 00 1 05
Cattle, Sheep, Swine, Poultry, etc., American Bee Journal, Hamilton, Ill. (w).....	1 00 1 05
American Poultry Journal, Chicago, (m).....	1 00 1 20
American Sheep Breeder, Chicago (m).....	1 00 1 35
American Swineherd, Chicago, (m).....	1 00 1 45
Breeders' Gazette, Chicago, (m).....	1 00 1 70
Green's Fruit Grower, Rochester, (m).....	1 00 1 20
Hoard's Dairyman, Fort Atkinson, Wis.....	1 00 1 20
Jersey Bulletin, Indianapolis, Ind. (w).....	1 00 1 35
Kimball's Dairy Farmer, Waterloo, Ia. (s-m).....	25 70
Poultry Keeper, Quincy, Ill. (m).....	50 1 15
Poultry Success, Springfield, O. (m).....	50 1 25
Reliable Poultry Journal, Quincy, Ill. (m).....	50 75
Swine Breeders' Journal, Indianapolis, Ind. (s-m).....	50 80
Michigan Poultry Breeder (mo).....	50 70
Popular Magazines.	
Everybody's Magazine, N. Y. City. (m).....	1 50 1 60
Etude, Philadelphia, Pa. (m).....	1 50 1 60
McClure's Magazine, N. Y. City. (m).....	1 50 1 60
Musicalian, Boston, Mass. (m).....	1 50 1 55
National Sportsman Boston, Mass. (m).....	1 00 1 15
People's Home Journal, N. Y. City. (m).....	50 85
People's Popular Monthly, DeMolines, Ia. (m).....	25 95
Red Book Magazine, Chicago, Ill. (m).....	1 50 1 55
Review of Reviews, N. Y. City. (m).....	3 00 3 00
Ladies' or Household.	
Delineator, N. Y. City. (m).....	1 50 1 60
Designer, N. Y. City. (m).....	75 1 05
Housewife, N. Y. City. (m).....	50 80
Ladies World, New York City (m).....	1 00 1 25
McCall's Magazine and Free Pattern, N. Y. City. (m).....	50 75
Mother's Magazine, Elgin, Ill. (m).....	1 50 1 55
Pictorial Review N. Y. City. (m).....	1 50 1 50
Today's Magazine and Free Pattern (m).....	50 70
Woman's Home Companion, N. Y. City. m.....	1 50 1 60
Womans World, Chicago. (m).....	35 60
Religious and Juvenile.	
American Boy, Detroit Mich. (m).....	1 00 1 50
Boys Magazine, Southport, Pa. (m).....	1 00 75
Little Folks, Salem, Mass. (m).....	1 00 1 25
Young People's Weekly, Elgin, Ill. (w).....	75 90
Youths Companion, Boston, Mass.....	12 00 2 25

POLAND CHINAS

The Large Prolific Kind
We have a nice lot of **SPRING BOARS**
At Farmers' Prices.
ALLEN BROS.,
Paw Paw, Michigan.

For Sale Poland Chinas of Merit,
Ayreshire Bull. B. M. WING & SON, Sheridan, Mich.

DOES THIS LOOK GOOD TO YOU
To advertise our herd, and get you started right, we offer a few BIG TYPE POLAND CHINA pigs, at weaning time, (either sex) from 100 pound sires and great big stretchy sows, of best breeding, for \$10.00 each, if ordered at once, offer with breeding soon. Extra good spring boars and gilts for sale.
Hillcrest Farm, Kalamazoo, Mich.

Big Type Poland China—Western bred extra large not akin Satisfaction guaranteed.
W. BREWSTER & SONS, Elsie, Mich. R. No. 5.

POLAND CHINA Spring Pigs from heavy boned prolific stock. Also, Oxford Sheep, both sex at bargain prices. **ROBERT NEVE, Pierson, Mich**

Poland Chinas. Spring Pigs either sex, both medium and big type from large litters. Prices right. **L. W. Barnes & Son, Bryon, Michigan.**

REGISTERED YORKSHIRES

Imported Strain. Both sexes. Prices Reasonable.
Hatch Herd, Ypsilanti, Michigan.

SPECIAL BARGAIN CLUBS

We have arranged here a list of special bargain combinations which will save you considerable on your reading matter. No substitution of other magazines which are the same price can be made. You must take the entire combination as it is. You can make up your own club from the club list if none of these suit you.

Orders may be sent direct to us or through any of our agents. Order by number. Address all orders to the Michigan Farmer or hand to our agents.

EXPLANATION.—Wk. means the paper comes each week, mo. means each month, S. mo. semi monthly. Dailies on R. F. D. only.

Publishers of other papers will not allow us to quote their paper single at less than their regular prices, but Subscribers to the Michigan Farmer whose term does not expire for 1 year or more will be allowed reduced prices on other papers at any time if they will write us the ones wanted, this also applies when other papers are wanted not in the clubs they select.

NOTE.—The Michigan Farmer is figured in "Our Price" at the special season price of only \$1 for 3 years, 50 cents only may be deducted if the Michigan Farmer is wanted for but 1 year.

No. 1.
Michigan Farmer, 3 yrs., wk.....\$1.25
Boys' Magazine, mo..... 1.00
The Ladies' World, mo..... 1.00
Regular price\$3.25
OUR PRICE ONLY \$1.65

No. 2.
Michigan Farmer, 3 yrs., wk.....\$1.25
The American Boy, mo..... 1.00
Woman's World, mo..... .35
American Poultry Advocate, mo.. .50
Regular price\$3.10
OUR PRICE ONLY \$2.00

No. 3.
Michigan Farmer, 3 yrs., wk.....\$1.25
American Poultry Advocate, mo.. .50
The Ladies' World, mo..... 1.00
Regular price\$3.10
OUR PRICE ONLY \$2.00

No. 4.
Michigan Farmer, 3 yrs., wk.....\$1.25
Pictorial Review, mo..... 1.50
Boys' Magazine, mo..... 1.00
Regular price\$3.75
OUR PRICE ONLY \$1.60

No. 5.
Michigan Farmer, 3 yrs., wk.....\$1.25
Youths' Companion, wk..... 2.00
McCall's Mag. and Pattern, mo.. .50
Poultry Success, mo..... .50
Regular price\$4.25
OUR PRICE ONLY \$2.95

No. 6.
Michigan Farmer, 3 yrs., wk.....\$1.25
American Swineherd and book, mo .50
McCall's Magazine & Pattern, mo .50
Poultry Success, mo..... .50
Regular price\$2.75
OUR PRICE ONLY \$1.75

No. 7.
Michigan Farmer, 3 yrs., wk.....\$1.25
Choice of any daily in Detroit or Grand Rapids except Detroit News\$2.00 to \$2.50
People's Popular Monthly..... .25
Everyday Life, mo..... .25
Woman's World, mo..... .35
Regular price\$4.60
OUR PRICE ONLY \$3.00

No. 8.
Michigan Farmer, 3 yrs., wk.....\$1.25
Mothers' Magazine, mo..... 1.50
McCall's Mag. and Pattern, mo.. .50
Ladies' World, mo..... 1.00
Regular price\$4.25
OUR PRICE ONLY \$2.15

No. 9.
Michigan Farmer, 3 yrs., wk.....\$1.25
Choice of either:
Breeders' Gazette, American Sheep Breeder, Hoard's Dairyman 1.00
Poultry Success, mo..... .50
Boys' Magazine, mo..... 1.00
Ladies' World, mo..... 1.00
Regular price\$4.75
OUR PRICE ONLY \$2.70

No. 10.
Michigan Farmer, 3 yrs., wk.....\$1.25
Today's Magazine, they also give choice of one May Manton pattern free with first issue..... .50
Poultry Success, mo..... .50
Boys' Magazine, mo..... 1.00
People's Popular Monthly..... .25
Regular price\$3.25
OUR PRICE ONLY \$1.65

No. 11.
Michigan Farmer, 3 yrs., wk.....\$1.25
Any Detroit Daily (except the News) 2.50
Poultry Success, mo..... .50
Boys' Magazine, mo..... 1.00
People's Popular Monthly..... .25
Regular price\$5.50
OUR PRICE ONLY \$3.00

No. 12.
Michigan Farmer, 3 yrs., wk.....\$1.25
Any Grand Rapids Daily, 1 yr.. 2.00
Kimball's Dairy Farmer, S. mo .. .25
Reliable Poultry Journal, mo.... .50
People's Popular Monthly..... .25
Regular price\$4.25
OUR PRICE ONLY \$3.00

ATTENTION.—On any one of these combinations you save the price of the Michigan Farmer three years and on some considerably more.

The Michigan Farmer in these Clubs is figured for 3 years. Take this into consideration when comparing with Club prices offered by others.

50 YORKSHIRES—All ages. Red Polled Cattle, Oxford Down Sheep, W. P. Rocks, I. R. Ducks, E. S. CARR, Homer, Mich.

Large Yorkshires Gilts bred for September and October farrow. Serviceable boars. Pigs all ages. Prices reasonable. W. C. Cook, Route 42, Ada, Michigan.

Yorkshire Service Boars—Also sows and fall pigs. Send for Photos. CHAS. METZ, Evart, Mich.

Mulefoot Hogs—Weaning Pigs, Brood Sows and Gilts. Young service Boars. Pairs not akin. Write for prices. C. F. Bacon, R. 3 Britton, Mich.

MULE FOOT HOGS REGISTERED 2 very large boars—why not start right. **LONG BEACH FARM, Augusta, Mich.**

SHEEP.
IT PAYS TO BUY PURE BRED SHEEP OF PARSONS "The Sheepman of the East" I sell and ship everywhere and pay express charges. I will start one man in each town. Write for club offer and descriptive price list. **PARSONS, Grand Ledge, Michigan . R 1**

Oxford Down Sheep. Good Yearling Field Rams and ewes of all ages for sale. **M. F. GANSSLEY, Lennon, Michigan.**

Oxford Down Sheep and Polled Durham Cattle For Sale. **J. A. DeGarmo, R. No. 25, Muir, Mich**

No. 8.
Michigan Farmer, 3 yrs., wk.....\$1.25
Mothers' Magazine, mo..... 1.50
McCall's Mag. and Pattern, mo.. .50
Ladies' World, mo..... 1.00
Regular price\$4.25
OUR PRICE ONLY \$2.15

No. 9.
Michigan Farmer, 3 yrs., wk.....\$1.25
Choice of either:
Breeders' Gazette, American Sheep Breeder, Hoard's Dairyman 1.00
Poultry Success, mo..... .50
Boys' Magazine, mo..... 1.00
Ladies' World, mo..... 1.00
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Oxford Down Sheep and Polled Durham Cattle For Sale. **J. A. DeGarmo, R. No. 25, Muir, Mich**

Registered Oxford Down Sheep. Ram Lambs. Yearling Ewes. **L. N. OLMSTED, J. SPAANS, Muir, Mich.**

BARGAIN SALE OF CANADIAN BRED SHROPSHIRE RAM LAMBS Ready for service. \$15 & \$20. Order now. They are good ones. **KOPE KON FARM, S. L. WING, Propr., Kinderhook, Michigan.**

Shropshires Ewes and Ram Lambs for Sale. **DAN BOOHER, Marlon, Michigan.**

Big Robust Wool-Mutton Shropshire Rams Priced right and satisfaction guaranteed or money back. Write today for Special Price List 24. **A. H. FOSTER, Allegan, Michigan.**

SHROPSHIRE. Am offering 4 yearling rams, 8 ram lambs and 6 young ewes at reasonable prices. **C. J. Thompson, Rockford, Mich.**

Shropshire Rams and RAM LAMBS. Registered, large and well woolled. Write your wants. **A. E. BACON & SON, Sheridan, Mich.**

Shropshire Rams—For Sale. Four good registered Ram. **C. V. TRACY, ITHACA, MICHIGAN.**

Merinos and Delaines—Large, choice bred, long staple, oily, heavy shearers. Delivered, priced to sell. **S. H. Sanders, Ashtabula, Ohio.**

Leicesters—Yearling and ram lambs from Champion flock of Thumb of Mich. Also select Berkshire swine. **Elmhurst Stock Farm, Almont, Mich.**

LINCOLNS RAMS and EWES from the unbeaten flock of Amer. Cotswolds. Leicester and Dorset. These sheep have been shown at the biggest state fairs in the country and some have never been beaten. **HARRY T. CRANDELL, Cass City, Mich.**

HAMPSHIRE AND DORSET RAMS and Ewes for sale. "Lone Cedar Farms, M. E. HESS, 68 South Johnston Ave., Pontiac, Mich. Tele. 1288 J."

Your Hogs

Rid Them of Worms—Like This

Worms are responsible for nine-tenths of all your hog troubles at all seasons of the year, but especially in the fall.

Now, don't be misled thinking your hogs have some other ailment. Nine times out of ten it is worms. My Stock Tonic will positively expel these worms—it will keep your hogs in a healthy condition, thereby enabling them to resist disease and lay on fat. Feed my Stock Tonic to your hogs right now to expel the worms. Feed it also to your horses, cattle and sheep during the winter months, when they are on dry feed; it is a splendid conditioner and tonic and an aid to digestion.

Dr. Hess Stock Tonic

25-lb. pail, \$1.60; 100-lb. sack, \$5.00. Why pay the peddler twice my price?

My Stock Tonic will keep your stock in prime condition, vigorous and healthy, aiding digestion and assimilation. It has been tested by farmers all over this country for 24 years; it has been sold under my famous guarantee for all that time; that guarantee has been backed up by over 27,000 dealers, one of whom lives right in your town—not a peddler, mark you, but a reliable storekeeper whom you know.

My Stock Tonic is highly concentrated, as the small dose quantity will prove; and as I have no peddlers, wagons and horses to pay for I am able to sell my Stock Tonic through a reliable dealer in your town at rock-bottom prices.

It will put your horses, cows and sheep in fettle, and if your hogs are wormy, put one tablespoonful in the swill twice a day for every two hogs, and I want to tell you that it will be good-bye to the worms or my tonic won't cost one cent. And here are my prices—just half what the peddler charges: 25-lb. pail, \$1.60; 100-lb. sack, \$5.00. Smaller packages as low as 50c (except in Canada and the far West and the South).

Dr. Hess Dip and Disinfectant

One Gallon Makes 70 to 100 Gallons Solution

One gallon can, \$1.00; smaller packages as low as 25c.

Except in the far West and Canada

A powerful disinfectant and germ destroyer. I urge you men to use it around your hogpens, stables, poultry houses, outhouses, troughs, garbage cans, drains, etc. It sure does kill lice on hogs, cures skin and parasitic diseases.

Remember, the germs of disease are often carried from farm to farm—use Dr. Hess Dip and Disinfectant to destroy the germs and keep away foul odors. Sold in pint bottles, quart and gallon cans. Buy from the dealer in your own town—he stands back of my guarantee.

So sure am I that Dr. Hess Stock Tonic will put your animals in a thriving condition, make the ailing ones healthy and expel the worms, that Dr. Hess Dip and Disinfectant will destroy disease germs and foul odors, that I have authorized my dealer in your town to supply you with enough for your stock, and if these preparations do not do as I claim, return the empty packages and my dealer will refund your money.

Dr. Hess Poultry Pan-a-ce-a

Helps Hens Lay

A splendid tonic for moulting hens. It gives them vitality to force out the old quills, grow new feathers and get back on the job laying eggs all winter. It tones up the dormant egg organs and helps to make hens and pullets lay. Economical to use—a penny's worth is enough for 30 fowl per day. 1½ lbs. 25c; 5 lbs. 60c; 25-lb. pail, \$2.50 (except in Canada and the far West). Guaranteed.

Dr. Hess Instant Louse Killer

For Poultry and Farm Stock

Dust some on what you think is the cleanest hen in your flock, wait a minute, then spread out a sheet of white paper and ruffle the hen's feathers. Talk about dead lice! you'll be surprised. Sprinkle it on the roosts, in the cracks and dust bath. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sifting-top cans. 1 lb. 25c; 5 lbs. 60c (except in Canada and the far West). I guarantee it.

I have a book about Dr. Hess Stock Tonic and Dr. Hess Dip and Disinfectant that you may have for the asking.

DR. HESS & CLARK, Ashland, Ohio

For every two hogs put one tablespoonful of Dr. Hess Stock Tonic in the swill twice a day and I guarantee it will get the worms.



If you have a sick or injured animal, write Dr. Hess, telling symptoms, enclose 2c stamp for reply, and he will send you prescription and letter of advice free of charge.

