

MICHIGAN FARMER

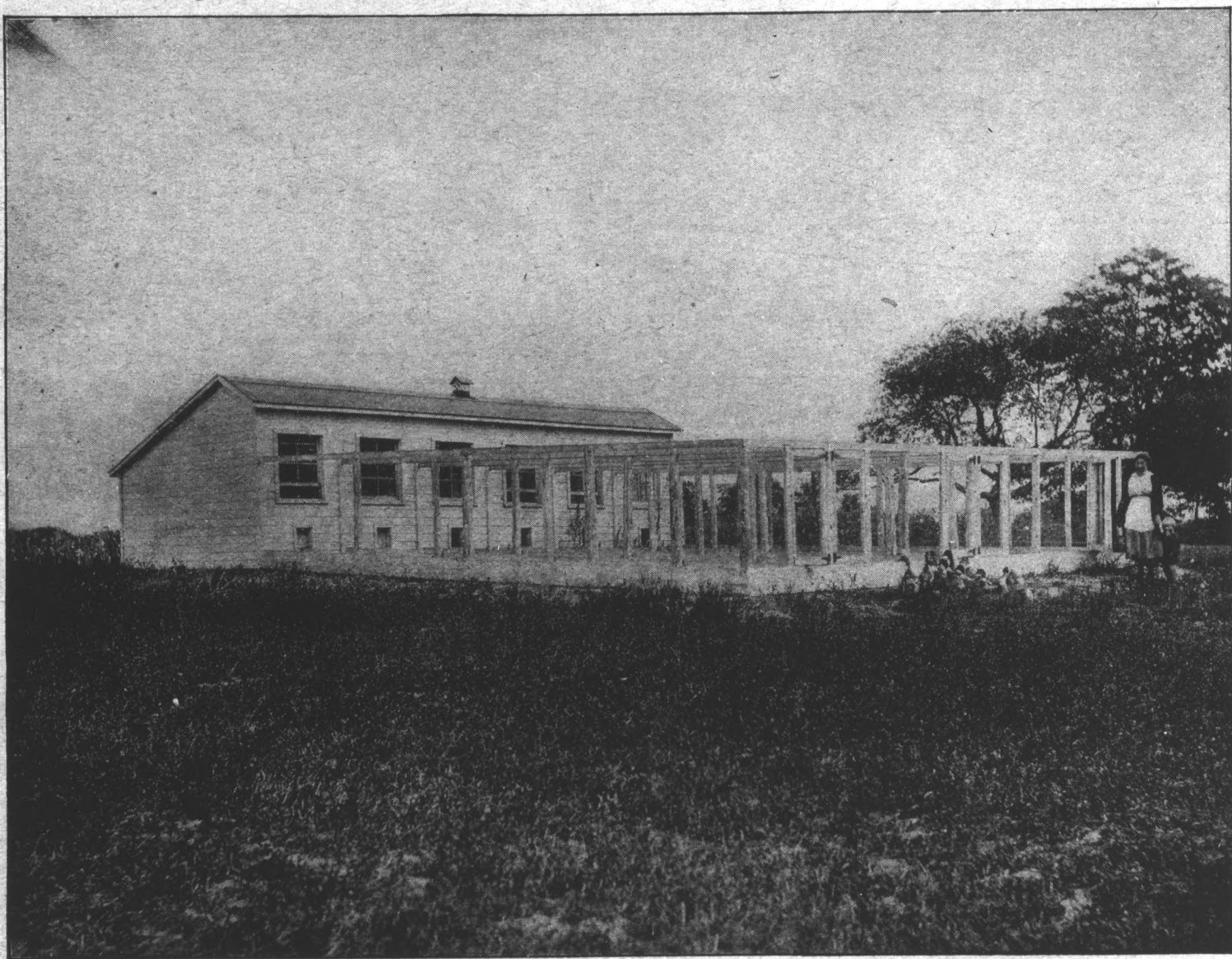
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CULL YOUR FLOCKS NOW

THIS is the time of the year when the farmer, as well as the poultryman, markets his surplus fowls. The writer has observed the many crates of chickens as they sit upon the trucks at different railroad stations over the state. What he has seen leads him to write a short article on the subject.

What do these chicken crates contain? Nearly every one is crowded with old cock birds, cockerels, or old hens. Usually not a pullet is to be seen, or, if any at all, there are but few. This in the main is correct. Do not overcrowd the hen house in the fall, winter and spring. Cull out the ones that should go to market. Keep only those that will improve the flock next year and those that will yield an income over and above the amount of food consumed.

Many a cock bird is sent to market that should be kept to breed from next year. Many a cockerel that would improve the egg or meat producing power of the hens next year if

sold in the neighborhood, is sent to market. So, also, there are hens that should be kept. On the other hand, many pullets are kept that should be sold for table use.

What, then, are some of the points that should be observed in culling down the flock?

First, the cock bird. If he is pure-bred and from a good laying strain, if his progeny are quick to mature (that is, if his cockerels feather quickly, grow their combs early, and commence to crow when six to eight weeks of age), if he is vigorous and healthy, if he crows often during the day, if he is a bit scrappy, if his feathers are of good lustre, if he moulted early and grew his new feathers quickly—keep him.

Second, what hens should be sold? Send to market those hens that moulted in July or in August. If a hen is carrying her old feathers at the time this is being written, keep her. A good laying hen moults late in (Continued on page 552).

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DETROIT, NOVEMBER 1, 1919

CURRENT COMMENT

The Need of the Hour

THE need of the hour was well expressed by Secretary of the Interior Lane, in his recent plea for a brief reign of sanity in the consideration and settlement of the industrial situation. This expression, following the breaking up of the industrial conference, of which he was chairman, is one which every American should adopt as his slogan, since collective sanity of necessity depends upon individual habits of thought. General introspection on the part of every citizen, coupled with a careful analysis of the situation with which the country is confronted would be a long step toward the solution of the problems incident to that situation.

If we take stock of the business situation we find it generally good. Money is plentiful, labor is well employed and the average industry is in a prosperous condition. Our resources have scarcely been impaired by the war and the future logically holds bright prospects for a period of unusual business prosperity. The only "fly in the ointment" appears to be a condition of great unrest which present efforts have not succeeded in quieting and which threatens the promised prosperity of the nation. This condition is apparently aggravated by the evident determination of several industrial classes of our citizens to protect their class interest during the reconstruction period at all hazards and without regard to the general public interest. In the majority of cases there is probably no lack of patriotic motive in the position taken by class leaders in this industrial controversy, while in specific instances it can hardly be doubted that the greed of capital, the ambitions of labor leaders or the jockeying of politicians are important, if not controlling factors. But the tendency on all sides to substitute force for reason, and threats for conciliation makes the situation not only dangerous but a real national crisis.

Apparently there has been a general failure on the part of factional leaders to appreciate the self-evident fact that permanent class prosperity cannot be built up at the expense of other classes. There must be an equitable division of the rewards of industry to insure a general and stable prosperity. There must also be continued and stable production in all essential lines to the same end if that end is to be realized. Unemployment as a result of strikes and lockouts is more uneconomic under present conditions of inadequate production than is a similar condition resulting from general business depression.

Truly the need of the hour is sanity on the part of individuals and classes. The industrial problem must be settled by our people thinking and acting as Americans, rather than as employers, workmen or politicians, and we have faith that the spirit of Americanism will prevail over the spirit of greed and ambition in the settlement of these vexed industrial conditions. To that end, let us individually support the American ideal of a square deal, that its collective realization may be more quickly possible.

The Industrial Situation

pose. Its dissolution without results was brought about by the withdrawal of the labor section following its failure to secure the recognition to the right of collective bargaining. The President's appeal to the public section of the conference to continue deliberation and make general recommendation for the solution of the industrial problem was productive of no practical results other than a recommendation that a permanent commission be appointed to take up the work in view of the fact that the task was too great for a body constituted as was the public section of the industrial conference, due to the fact that it was not fully representative of industry. Even in the matter of extending public knowledge with regard to the points at issue in the present industrial crisis, the conference failed in the accomplishment of any great results. In the meantime the industrial condition has become more critical through the threatened strike of half a million coal miners on November 1. This crisis places the government in a position where it must act with a firm hand in the public interest. Already the first move in this necessary action has been taken in the President's statement declaring a strike of coal miners under existing conditions to be not only unwarranted but illegal, and requesting the withdrawal of the strike order pending government action in the matter, and the public is awaiting the result with interest commensurate with the importance of the crisis.

In the meantime a general conference of labor leaders has been called for an early date for the apparent purpose of uniting on a common program. It is reported that efforts will be made to secure the cooperation of organized farmers in this program on the ground of a cooperative arrangement for direct distribution of farm products. There is also apparent dissention among labor leaders regarding the nature of the program to be adopted as evidenced by a radical element in certain branches of organized labor as opposed to the more conservative position of the leaders of the American Federation of Labor organizations. In some cases this radical element is said to take the extreme position of favoring "direct action," which is but another term for industrial revolution. Another disturbing factor in the situation is an open threat among leaders of organized railroad workers to call a general strike unless a tentative provision making strikes of railroad employees illegal is stricken from the proposed railroad re-organization bill now pending in congress.

In view of the uncompromising attitude of the several factions in the present industrial controversy, it is evident that the government is confronted with a serious task in averting the threatened crisis. The gravity of the situation will tend to unite government leadership along constructive rather than political lines, and under the circumstances the government should receive the united support of a loyal American citizenship rather than its condemnation, and constructive suggestions rather than its criticism. A consistent effort to determine an equitable basis for the settlement of the present critical industrial situation will receive the support of the great majority of loyal Americans regardless of their class affiliation, whether they be employees, workmen, or farmers. So far as the proposed attempt to effect a combination between organized labor and organized farmers to control the industrial situation is concerned, we believe it should be looked upon with strong disfavor by the farmers of the country. There is no question but that a more economic distribution of farm products among the consumers of the country is most desirable. There is also no doubt that this desired result could be greatly facilitated by proper cooperation among consuming workmen as is fully evidenced by the Roachdale plan so long in successful operation in England, but it is more desirable for each of these industrial classes to conduct their operations separately rather than through attempted combination, which would make this desirable end an object of barter for support of a radical labor class policy of doubtful benefit to the country.

The just claims of any large class of our citizens will be better promoted without attempted combinations which might prove most dangerous to the public interest, thus reacting to the detriment of the classes concerned as well as to the public at large. There is no danger, however, that the organized farmers of the country will be induced to sell their birthright for a mess of pottage in this manner. It is not improbable that in the future, as in the past, the preservation of the nation and its institutions may depend upon the wise and constructive action of its farmers. The present move toward constructive organization of the farmers of the greatest agricultural states of the country will place them in a position to be of great service to the nation as well as to their industry during the settlement of these reconstruction problems, and we believe they will rise to their opportunity in this direction.

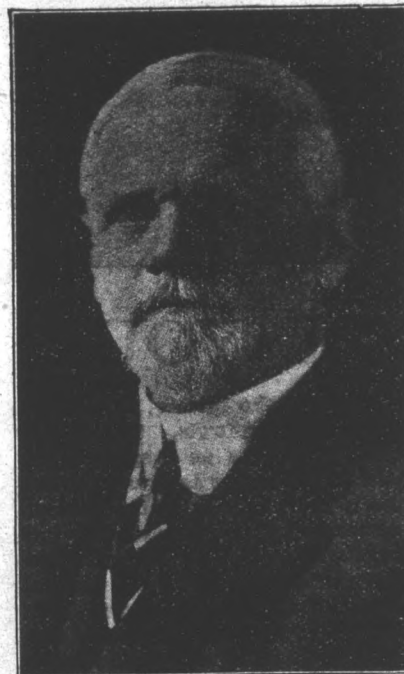
THE Industrial conference called by President Wilson has apparently failed to accomplish even a measure of its purpose. Its dissolution without results was brought about by the withdrawal of the labor section following its failure to secure the recognition to the right of collective bargaining. The President's appeal to the public section of the conference to continue deliberation and make general recommendation for the solution of the industrial problem was productive of no practical results other than a recommendation that a permanent commission be appointed to take up the work in view of the fact that the task was too great for a body constituted as was the public section of the industrial conference, due to the fact that it was not fully representative of industry. Even in the matter of extending public knowledge with regard to the points at issue in the present industrial crisis, the conference failed in the accomplishment of any great results. In the meantime the industrial condition has become more critical through the threatened strike of half a million coal miners on November 1. This crisis places the government in a position where it must act with a firm hand in the public interest. Already the first move in this necessary action has been taken in the President's statement declaring a strike of coal miners under existing conditions to be not only unwarranted but illegal, and requesting the withdrawal of the strike order pending government action in the matter, and the public is awaiting the result with interest commensurate with the importance of the crisis.

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Jonathan L. Snyder

THE passing of Jonathan L. Snyder, president of the Michigan Agricultural College during the years of 1896 to 1916, last week, has led to many tributes in his memory expressed by members of the college



staff, prominent farmers of the state, educators who worked with him, and his own personal friends.

It is doubtful if there has ever been an individual connected with Michigan's agricultural institution who has done so much for the betterment of the farming and home economic interests of the state. Though Dr. Snyder

was always considered a conservative in his business policies, yet he possessed very broad ideas in regard to agricultural education which he succeeded in getting into operation.

The early schooling of the deceased president was such that he gained a wide knowledge of the ways of the world which proved valuable to him in later life. Dr. Snyder was born in Butler county, Pennsylvania, in 1859. He was one of a family of twelve, eleven of whom grew to maturity. M. A. C.'s ex-president was a "son of the soil" in the most literal meaning of the words. He was born on a farm and at the age of twelve was assuming the responsibilities of a vegetable vendor in Alleghany, Pennsylvania. Daily he used to drive to the city with his load of market produce and return in the evenings with varying sums up to fifty dollars for his day's sales.

Butler county was in the midst of the wild rush following discovery of oil about this time and there was a lawless feeling pervading the whole community. Young Snyder found it necessary in those early days of his responsibility to carry a loaded revolver beside him on his long homeward trips from the city to protect the family cash from theft.

The very earliest education of Dr. Snyder was procured in the country schools of Butler county. Here the fundamentals were gained which later made him so able an executive.

Little Westminster College in Pennsylvania served as alma mater for the whole Snyder family. The institution was quite near at hand and all the children who happened to be attending college at the same time would rent two or three rooms in the city and live there, living largely on the produce of their own farm.

Very soon after Dr. Snyder's graduation from Westminster College he was elected to the superintendency of schools in Butler county. Shortly afterward he was made principal at Alleghany, and just previous to coming to M. A. C. he was made president of the Slippery Rock Normal School of Pennsylvania. During his incumbency at Alleghany one of his notable educational victories was to procure the establishment of departments of manual training and domestic science in the school of that city. Though the instigation of these departments came hard, it proved a great victory for the young pedagogue and served to illustrate the practical application side of his nature.

When Mr. Snyder came to take the president's chair at M. A. C. the problems which presented themselves might be grouped as the material necessities to the running of the college and the educational demands of the state.

At the time of Dr. Snyder's coming to Michigan's agricultural school the institution was very inadequately situated with regard to buildings and funds. During the twenty years he held the chair of college president he was largely responsible for the gaining of the new dormitory for women, the new agricultural hall, and a new engineering edifice.

The first five years of Dr. Snyder's incumbency were filled with numerous snags in getting enough money to run the institution from year to year. It was necessary to apply to the legislature each session for appropriations to carry the expenses for the next season. There was no money to provide for the increased growth of the institution and it was impossible to carry on any extension work under such a financial arrangement.

During the first five years this poverty of the institution was brought home very clearly. He took up the matter with the legislature and secured the passage of the law which grants the college the mill tax. To Dr. Snyder belonged the credit of securing sufficient funds to run the institution. (Continued on page 552).



Functions of Lime and Its Compounds

By Earle W. Gage

THE chief and outstanding objects of applying lime or carbonate of lime are two: The correction or neutralization of acidity or sourness and the improvement of tilth or mechanical condition of soils. Incidentally, they serve other useful purposes, as will be seen. Acidity or sourness in a soil is a property or quality distinctly detrimental to the thrift of most farm crops; lime and carbonate of lime combine with and neutralize the soil's acids and the excess used renders the soil slightly alkaline, a condition favorable to crop growth. In this way lime and other alkaline lime compounds may restore and enhance fertility.

Wet, low-lying and ill-drained soils are especially apt to become sour. Soils consisting essentially of vegetable organic matter, as mucks and peat loams, are usually, though not invariably, sour. Again, strange as it may seem, many light, upland soils are slightly acid, presumably by reason of the washing out and leaching away of their original store of carbonate of lime or its withdrawal by many years of cropping.

In all soils, but more especially in sandy and gravelly loams, there is a tendency for the lime compounds to disappear, partly through removal by crops but more particularly by their solution and passage into strata below the zone occupied by growing roots. Carbonate of lime is fairly soluble in water containing carbon dioxide, and all soil moisture is usually saturated with that gas, and thus the soil's lime is constantly washed downwards and may largely be carried off by drainage water. This fact explains the presence of carbonate of lime in the waters of our rivers, lakes and wells, and it is in this way that thousands of tons of this valuable constituent of our soils annually find their way to the sea. Once the available lime has disappeared, the tendency will be for the soil to become sour. Some soils, by reason of their origin, are well supplied with carbonate of lime for years of cultivation. Such are almost invariably strong, productive soils and stock fed on their crops are thrifty, with plenty of "bone." But there are other soils—especially many clays, silts and mucks—that are poor in lime from the outset and these, under cultivation, become poorer and poorer in this constituent.

Testing Soil for Acidity.

Any farmer may for himself determine whether or no his soil has acidity or sourness. Blue and red litmus paper may be purchased at any drug store. It is very cheap and it is well to secure the best quality. It can frequently be bought in small books, containing from twenty-five to fifty strips of the paper, each about one-half inch wide by two or three inches long, protected by heavy cover. These "books" are very convenient and suitable. They should be kept in a clean, dry, preferably wide mouth, well-corked bottle. When tearing or cutting out a strip of the litmus paper for use, use a pair of forceps or scissors, as the paper is sensitive and the fingers may cause its reddening.

The test may be made in either of two very simple ways, and when carefully carried out, an accurate test will be made. The first is made as follows: Take up, by means of a spade or trowel, a little of the surface soil from,

say, half a dozen places on the area to be examined, and mix well, using the trowel or a clean piece of board. Do not handle the soil. Take a small quantity (a few ounces) of the mixed soil, and putting it in a clean cup, pour on a little boiled water and stir with a clean piece of stick or spoon until the mass is of the consistency of a very thick paste. Into this "mud" press a piece of the blue litmus paper by means of a small stick, inserting the paper until one-half to two-thirds of its length is within the pasty mud. At the end of fifteen minutes, carefully draw out the paper and note if the part that has been in contact with the soil has turned red. If so, the soil is acid.

The other test is made as follows: Place a strip of blue litmus paper in the bottom of a clean, dry glass tumbler and over it place a round "filter paper" (purchasable at the druggist's) or if such is not readily obtainable, a piece of clean, white blotting paper cut to fit the bottom of the tumbler. On this put a few ounces of the soil to be tested, collected and mixed as already described, and pour on sufficient boiled water to moisten or wet the soil thoroughly, but none standing, and set aside for half an hour or longer. To examine the litmus paper, the tumbler is inverted; viewed through the bottom of the glass its color will be well brought out against the white filter paper. As a check and to insure that any change in color may not be due to acidity of the water or filter paper used, a blank test should be made in the same manner, using no soil.

The influence of lime and its compounds upon the tilth and texture of the soil constitute its most valuable property. This is most marked and most beneficial in the case of clay loams, rendering them less sticky and cohesive when wet and more friable and mellow when dry. This is brought about by the aggregation or gathering together of the finer particles of the

clay into larger units, a process known as flocculation. This vastly improves plastic soils, converting them from a stiff, impervious and almost untillable condition into one which renders them easier and less expensive to work. Further, it makes clays drier, warmer, better aerated, with a larger content of moisture available for plant growth and thus brings about a more favorable and ready condition for the extension of the root system in search of food. It permits the farmer to cultivate his clay loam earlier in the spring for flocculation assists drainage, and thus will insure, in most seasons, earlier seeding and increased yields. These effects of lime and its compounds on clays, which may be summed up in the word mellowing, may be considered on a par with their power to neutralize acidity.

On light soils—sandy and gravelly loams—lime and carbonate of lime are also beneficial, but not in so marked a manner as in the case of clays. The action here is to cement slightly the soil grains, rendering the soils somewhat heavier or closer in texture and thus being less open and porous, they are less readily dried out in seasons of drought.

It is well known that certain crops and trees thrive best on soils that are rich in carbonate of lime, but there is a microscopic vegetable life within the soil that also needs this constituent for its best development. The larger number of the various types or classes of soils consist mainly of disintegrated and somewhat altered rock particles—grains of sand, particles of clay, silts, etc.—but an essential and important constituent of all arable soils is organic matter—humus or humus-forming material—the result of the partial decay of the roots, leaves, etc., of many generations of plants. This semi-decayed organic matter is the source and storehouse of nitrogen, the dominant and most costly element of plant food. But before this humus-

nitrogen can be utilized by growing crops—and indeed by all the higher plants—it must be oxidized and converted into nitrates. This process, known as nitrification, is the life work of certain vegetable microorganisms or bacteria within the soil.

In soils destitute, or practically so, of carbonate of lime, and especially in ill-drained, water-logged soils, the decay of the organic matter is accomplished by the development of certain organic acids. Lime and carbonate neutralize these acids, making the soil suitable for the growth of the bacteria and, further, furnish a base or alkali to combine with the nitric acid produced by them. The nitrate of lime so formed is, no doubt, the principal direct and immediate source of the nitrogen supply of our field crops.

In acid-correcting and in supplying available lime, as well as considering the various forms on a basis of equal purity, fifty-six pounds of quicklime is the equal of seventy-four pounds of freshly slaked lime and of 100 pounds of carbonate of lime, whether it be as marl or ground limestone. Therefore, if quicklime were worth \$5.00 per ton, ground limestone, equally free from impurities, would be worth \$2.80 per ton, and freshly slaked lime \$3.80 per ton. While the above comparisons, as to equivalent weights and values, may serve in a general way, an analysis is necessary when the exact lime value of any particular sample or samples, is desired.

But the cost of material should not in all cases settle the question which of these two forms will be best to apply. There are two factors beside cost that should receive attention—the character of the soil and the rapidity of action required.

Quicklime and slaked lime are not so desirable or safe for light sandy and gravelly loams as are ground limestone and marl. These soils are usually poor in organic matter and the effect of lime, as is well known, is to hasten the oxidation and dissipation of this constituent. Therefore, unless the lime is applied in small dressings, (less than one thousand pounds per acre), and at long intervals, the humus of the soil—certainly one of its most valuable constituents—would be unduly reduced in amount and thus the fertility of the soil seriously impaired. Carbonate of lime (limestone and marl) is much milder in its action and an excess can do little or no harm.

For heavy clays quicklime or slaked lime is to be preferred. It is true that these compounds are converted in the course of time into carbonate of lime within the soil, but being more vigorous and active from the outset and being in a finer powder than the ground limestone, they pass more readily into solution, thus allowing a more complete and uniform distribution throughout the soil. As a result their influence in flocculating the clay particles will be more rapid and improvement in tilth will be more quickly obtained. For the same reason, the chemical action also of these forms is more vigorous than that of the ground limestone and marl.

On soils rich in organic matter, mucks and peaty loams, the more caustic forms—quicklime and slaked lime—may be used, and in fairly large amounts—say, two to four tons per acre—if strong acidity of soil is shown as is very frequently the case.



Loading Lime at the Quarries.

Agriculture Versus Other Industries

Principles Submitted by the Employers Group to the Industrial Conference at Washington

RESPONDING to the call of the President of the United States that the Industrial Conference convene "for the purpose of reaching, if possible, some common ground of agreement and action with regard to the future conduct of industry * * * (and) for the purpose of enabling us to work out, if possible in a genuine spirit of cooperation a practical method of association based upon a real community of interests which will redound to the welfare of all our people," the group representing employers assent to the presentation of the following principles affecting agriculture by which these purposes may be accomplished, viz:

Statement of principles prepared by representatives of agriculture at the Industrial Conference:

A nation's prosperous and progressive agriculture, without which democracy must fail and the people go hungry, can only be maintained by political, social and economic justice. The net return for labor management and capital used in farming is today smaller than the return in any other great industry. The increase in production of agricultural staples is not keeping pace with the increase in population or consumption. There is a marked active decline not only in proportion of men and capital engaged in agriculture compared with other industries but an actual decline in certain sections. This is what is meant by a "declining agriculture" and is the condition which we face today in this basic and most essential American industry. This statement of fact is a standing indictment of the political, social and economic treatment now and heretofore accorded agriculture and must not be permitted to continue. Present conditions will inevitably destroy independent, self-respecting citizenship in the open country. The surest guarantee of an enduring American democracy, the bulwark of our nation against false economic and political doctrines and the sole barrier between the industrial people of the world and starvation for its least fortunate, is the free land owning, home-loving citizenship.

Farming and farmers must have the economic, social and political justice which will make farming as profitable and as livable as any other occupation involving the same amount of hard work, business ability and investment, or the balance between farm production and urban consumption cannot be maintained. It is unfortunate that a technical meaning has risen to the words capital and labor which in many minds excludes agriculture from neither class when from the standpoint of capital the business is easily the largest business, and from the standpoint of labor there is no other industry that includes nearly as many laborers within its activities. Any conclusions, therefore, that may be reached in this conference can scarcely prove to be permanent unless they shall include the welfare of farmers as laborers and farm owners as capitalists.

And added to this is the fact that if any industry may be defined as basic, it is the one that independently of all others is self-sustaining and self-perpetuating; one that was in the beginning with the birth of civilization and without which civilization must perish. The great bulwark of the actual wealth of the nation springs from the brown soil. And the balance of trade that has made this nation rich

beyond compare comes from the same source.

Modern Agriculture.

Farmers have responded to the ever-increasing demands of modern industrial and economic developments. The modern farm is no longer a self-sustaining unit as in primitive days, but has become a highly specialized production plant, the operation of which requires technical skill and managerial ability with large investments in modern labor-saving machinery. Six million such farms make up the vast industry of America's agriculture, on the uninterrupted operation of which depends the daily supply of food to all the people.

The Farmer as a Laborer.

The daily manual labor of operating farmers in this country is equivalent to that of thirteen million adult workers. The price of farm products determines the farmer's wage. The solidarity of labor is such that farmers cannot continue on one wage level while the rest of labor is on another level. One must rise or the other fall until a level is reached.

The Farmer as an Employer.

American farmers employ more laborers than any other single industry. The number of operating farmers and their hired employees is greater than that of laborers in all other industries combined. Any adjustment of industrial wage disputes to be fundamentally sound and permanent must give full consideration to the relation between wages on American farms and in other industries. To pay higher wages on the farm inevitably means higher prices for farm products. The present level of wages makes it impossible to cultivate American farms with the greatest efficiency and must reduce production.

Reciprocal Duties and Obligations.

To produce sufficient food is the principal duty of those engaged in agriculture, and to the limit of their physical and financial ability this duty should be performed. For this there must be an equivalent in value. Farmers discharging this duty to organize society have a right to demand:

(a) Such returns as will fairly compensate them for their capital investment, their technical skill, their managerial ability and their manual labor.

(b) That they and their families have social, educational and political opportunities equal to those engaged in other activities.

Failure to meet these demands will result in a continuance and an acceleration of the decline in agriculture. Increased production is still the slogan of the hour and the farmer is still working at high speed and long hours and without adequate help, and facing falling markets for his products, he now appeals to those in other callings to buckle down to work and turn out the product, stop the profiteering and all together begin to pay the debt that hangs over the land.

Farm Production.

The demand for farm products should be scientifically satisfied. Overproduction as well as underproduction dislocates industrial and economic balances, and in the end, results in economic waste. In 1910 we produced over eleven million bales of cotton. In

1911 we produced fifteen million bales and yet received sixty million dollars less for the 1911 crop. Society had the benefit of the four million bales of cotton but the farmer got sixty million dollars less than nothing for them. In 1915 we produced one billion twenty-five million bushels of wheat and received nine hundred and forty-two million dollars for it. In 1916 we produced six hundred and forty million bushels and received one billion and twenty million dollars for it. Society had the benefit of three hundred and eighty-five million bushels of wheat but the farmer received seventy-eight million dollars less than nothing for it. Thus it will be seen that simply to produce will not mean prosperity, but rather to produce only what will yield cost of production and a measure of profit. Reliable official cost of production studies and records are in existence proving inadequate returns to agriculture. This information should be widely circulated so that the public may know the truth. Further studies of cost of production together with comprehensive studies of marketing, including prices actually received by farmers, are also needed.

Hours of Labor.

Neither the day nor the week is a unit upon which agricultural costs of income can be satisfactorily based. Conditions are so variable that it is difficult to prescribe a rule applicable to all localities or to any locality at all seasons. It is, however, becoming most difficult for farmers to secure laborers who are willing to work more hours than do laborers in other industries. Experience shows that the hours of farm hired laborers approximates the hours of labor finally prescribed in other industries. The nature of agricultural work is such that it cannot economically adjust itself to a specific hour day. If a definite hour per day basis is determined upon in other industries, however, this basic day must be the unit of all estimates in farm production costs.

Soil Fertility.

Economic conditions should be such that the farmer may operate his land so that its fertility shall be maintained and perpetuated.

An adequate future supply of food requires that the fertility of the soil should be conserved and replenished. The people should unite in all measures, legislative or otherwise, that will permit and accelerate the movement of fertilizers in such form and quantities and at such prices as will enable farmers to maintain and conserve soil fertility.

Cooperative Marketing.

Economic and industrial conditions in agriculture necessitate cooperative marketing and legal obstacles are now handicapping such effort. All necessary amendments should be made to state and federal laws to clearly preserve to farmers the right to cooperatively market their farm products.

Farm Organizations.

Economic efficiency in agriculture is promoted by every agency which adds to the knowledge, experience, satisfaction, technique and equipment of the individual farmers. For these purposes strong self-supporting farmers' organizations are urged, to develop lead-

ership from their own ranks and in accord with their own best interests; and to represent the industry in its contact with other industries and with the public.

Storage.

Adequate food storage reservoirs are essential to a well-fed people. In time of heaviest production foods should be stored away in such quantities as will tide over periods of non-production. Depletion of these supplies during the harvest months will probably mean bread lines before spring. Wise public policy will encourage properly regulated storage by farmers and others of essential reserves of food.

The High Cost of Living.

Much of the complaint of the high cost of living is the result of extravagant living. The cost of living is high or low according as the price of the necessities of life rise above or fall below the general level of salaries, wages, and income. The present cost of living is not due to the prices received by the farmer for his products, as shown by a comparison between farm prices, food prices, and wage levels. Reliable government statements indicate that the percentage of increase in food prices is not as great as that of other commodities entering into the cost of present day living or of the level of wages in other industries.

Land Tenures.

Land tenancy is increasing. Farm ownership is concentrating in the hands of non-residential land owners, a condition which from historic evidence presages declining national virility and if not checked, ultimately a feudal peasantry.

An independent, successful and permanent agriculture with the essential schools, churches, and social facilities cannot be maintained on the basis of absent ownership and its inevitable end is not only a social cleavage which is opposed to the principles of our American democracy but another new and dangerous line of industrial cleavage and conflict. A permanent agriculture must be predicated on voluntary home-owning farmers politically free, socially satisfied and economically independent.

Farm Depopulation.

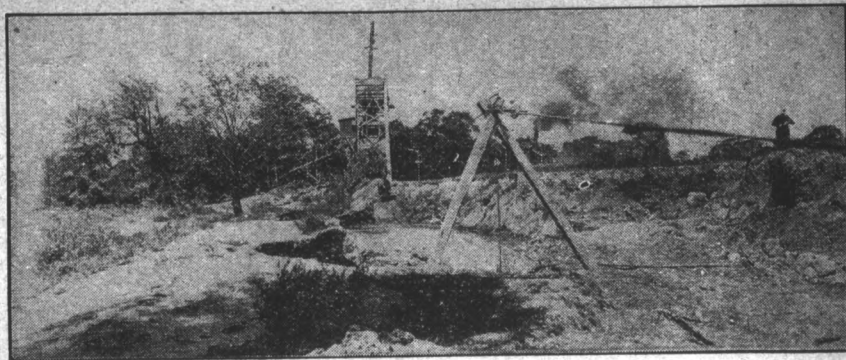
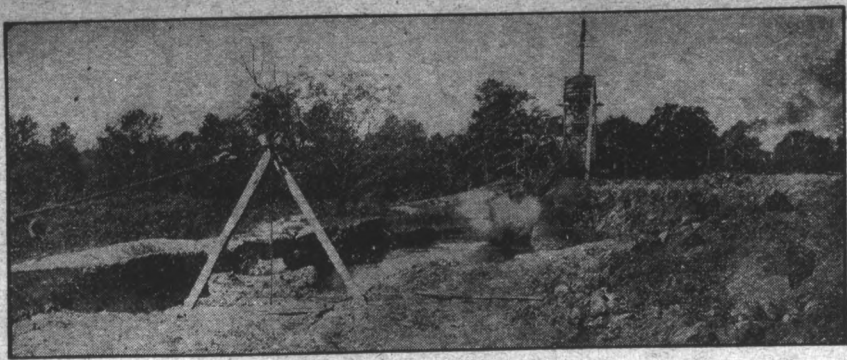
The farmer's efforts to secure higher wages or better working conditions are not based on an organized refusal to work, but that does not mean that he is without the power of self-protection. His environment gives him those qualities which make him sought by many other occupations and professions. Banks, factories, stores, transportation and commerce call to him to come to them and the professions make their fine appeal. In the quiet of his home with his family about him his boy and girl decide to heed that call. One more family has left the army of food producers and another family has joined the army of food consumers. The farmer has "struck" but society cannot find him or plead with him to return to his work.

Financing Agriculture.

The availability of capital used in agriculture is a matter of public concern. Direct extension of federal credit through the land banks will reduce the cost of this capital and should be made easier of access to all farmers. Associated credits of farm communities should be developed under proper laws and leadership.

These principles presented by the representatives of agriculture in the Industrial Conference and transmitted (Continued on page 546).





Mining Road Building Materials

By J. H. Brown

MICHIGAN is building good roads by the miles and with hundreds of thousands of cubic yards of gravel she has only fairly started on the job. During the next few years almost every farm in some of the southern counties will be inspected with an eagle eye by road officials, and soundings will be taken to find gravel that will pass the required test for road construction.

It is not an easy job to find good gravel would be scarce some day. pits were plentiful and the quality was good for many years during and after the Civil War. Many farmers found it easy to excavate a foot or two and find plenty on one or more knolls on their farms. Sometimes these eventually became big pits and the whole neighborhood was allowed to take out all that was needed.

About ten years ago when the present system of building gravel roads started it was freely predicted that gravel would be scarce some day. From that time to the present, millions of cubic yards of this valuable material has been taken out of thousands of old and new pits on knolls, side hills, and lately deep in the banks of certain rivers and smaller streams.

Some time ago the road engineer of Calhoun county built up a sort of hydraulic system by means of which he washed down and out the whole side hill on the edge of a big cat-hole. The material on its way down hill was carried by metal troughs to a washer and elevator that washed out and screened the gravel and deposited it in an elevated hopper. Wagons could be filled without any shoveling and very quickly. This plan worked nicely but the elevator buckets and bearings wore out too fast.

The idea of using this hydraulic system of getting out gravel was invented by this road engineer and the plan was noted, and we made pictures thereof for several road-building periodicals throughout the country. Later on a big cylinder was perfected to take the place of the bucket elevator. In another article we will illustrate that plan.

But some time ago this road engi-

neer and a farmer found that it would be a great scheme to get the gravel deep in the ground under water and alongside the St. Joseph river for building many miles of good roads near by.

So they went at and perfected the machinery shown in the four pictures. There was a small pit in the bank and many hundreds of loads of fine gravel

platform nearly sixty feet above the ground. The cable can be anchored into the ground anywhere or to a big tree, as the pit is lengthened or widened. In this case a tree was used.

Another picture shows the big bucket just as it got back from the top of the elevator. It made the water splash as it hit the surface and settled down into the gravel many feet below. The

ing wagons and gas tractor trucks.

The powerful steam engine that operates the bucket and cable is located where the engineer can overlook the whole of the working device, except when the bucket is submerged. He handles the levers and cable drum to perfection, just as is done in hauling material up many stories in the big steel and concrete structures in the largest cities. And such operators have to keep their eyes strictly on the job every second of the time when the cable is moving.

The same picture shows how easy it is for the wagons and trucks to load up with no manual labor whatever. At this plant, probably the first of this kind in the state in such work, the gravel is taken out from deep in the water and elevated, washed and screened and supplied to about a dozen to fifteen wagons as fast as they can haul material away to the road bed.

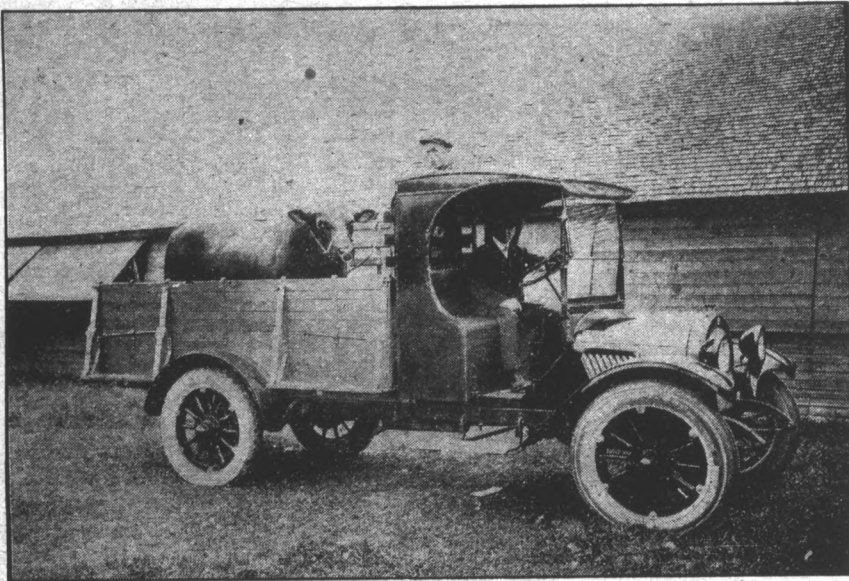
Some of the road strips are several miles away. Some strips are from one to four miles long. The first layer is put on without taking so much pains regarding the quality and per cent of gravel; but the upper part has to strictly conform to the requirements of the state highway department.

The fourth picture was taken on the opposite side of the elevator. It shows the elevated shed that contains the powerful gas engine that runs the screens and shakers. There is still another gas engine on the river bank that pumps the water for flushing and washing.

The big stones, sticks and all foreign matter is conveyed out and down chutes that take it into any cat-hole or depression near by.

When the bottom of the gravel layer is reached the cable will be shifted to one side a little and hundreds more loads taken out. So far as can be determined there is gravel enough in and around the pit shown in the first two pictures to build roads for weeks and months to come.

The same company has now commenced to build another plant in a different part of the county to help cover more new roads and renew still others that are getting raveled on top.



With Road Improvement the Utility of the Motor Truck will Increase in Rural Communities.

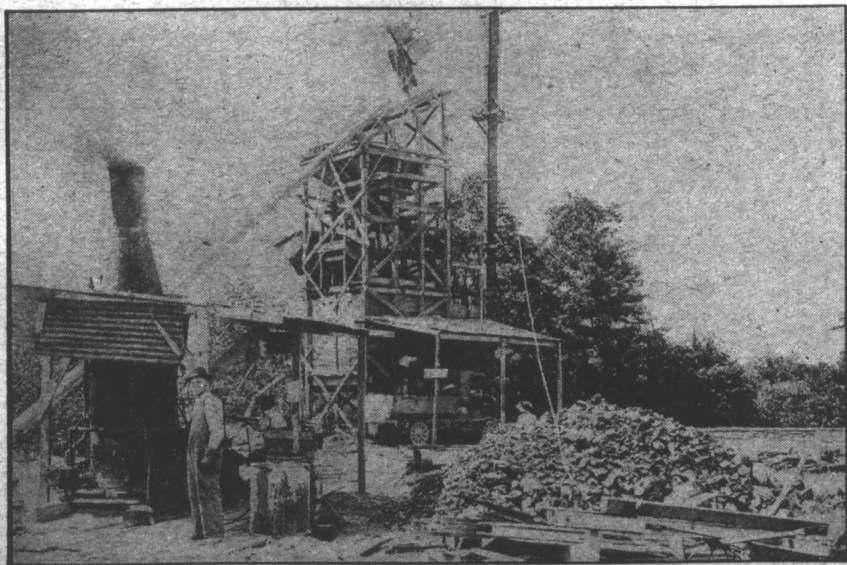
have been secured by shoveling out by hand into wagons. But water soon ran into the pit and the best gravel was supposedly submerged for keeps.

As this novel plan for securing gravel under such conditions has never been illustrated and described in any farm journal in the country, we here give some of the details, and more particularly because a farmer worked it out and built the elevator and washing and screening devices shown.

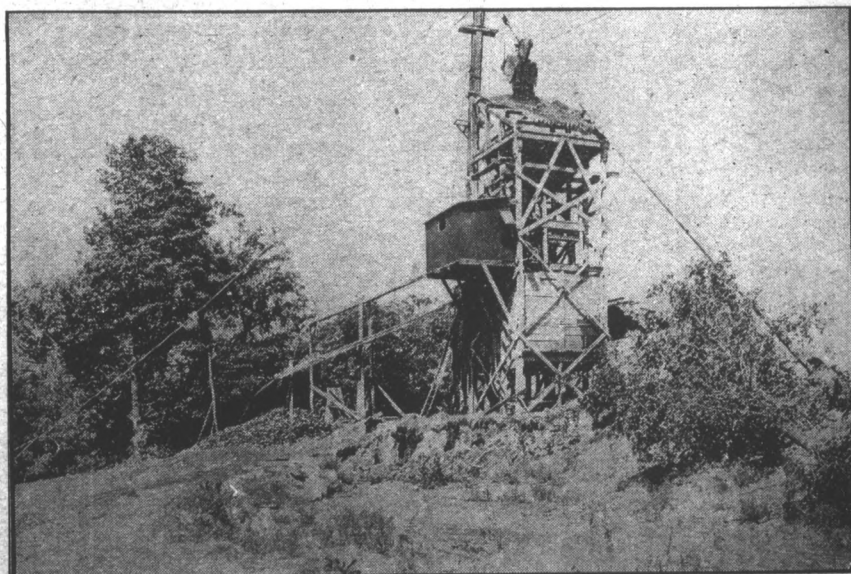
One picture shows the wire cable leading over the X-shaped posts, down over the open pit full of water, and up to the top of the elevator dumping

hauling cable is so arranged that it will operate the bucket by gripping and pulling and settling back until it is full and then is hauled up and out on the bank and up the steeply inclined way as shown in the two illustrations below.

Another picture shows the elevator in detail. It is built of stout though fairly light timbers and is thoroughly trussed in every direction. It has to be high enough to allow the unwashed gravel to travel by gravity as it is separated and washed from the soil, stones and coarser pebbles and graded as desired when it is delivered into the big hopper ready to drop into the wait-



Trucks Are Loaded from the Hoppers without Manual Labor.



Gravel Dumped at Top is Washed, Graded and Screened by Gravity.

Break in the Tractor Easily

WHEN the new farm tractor is started it should be loaded very lightly and frequently stopped and inspected to see if the oiling and cooling systems are working properly; whether there are any bearings running hot, nuts working loose, or leaking water and gasoline connections. Too much care can not be used the first two or three days, as carelessness at this time may cause damage that will be highly expensive and cause considerable delay.

A new tractor usually has more or less dirt in fuel tanks which soon finds its way to the carburetor and interferes with the flow of fuel, often clogging the pipes. The remedy is to clean the pipes.

In spite of the care in assembling and collecting, small metal particles are frequently left in the crank case. These will either be splashed around with the oil and work into the cylinder or will clog the oil screen at the

inlet to the oil pump. This makes it advisable to remove all old oil from the engine after it has been run a few hours in order to get rid of these metal particles.

The life and daily service of a tractor are largely dependent on the care which the machine receives both while in service and out. A tractor can not be operated by boys and inexperienced men with any degree of success. The successful use of a tractor depends more upon the operator than upon the machine. Too much stress can not be placed upon a thorough understanding of the principles of a gasoline or kerosene engine, such as carburetion, ignition, and transmission.

When an engine is delivered, it is supposed to be in running order. A good operator will make it his first rainy-day job to make note of the valves as to timing and adjustments, the width of the gap between the points of spark plugs, the opening of

the breaker points, and carburetor adjustments. Then when by accident, necessity for repairs, or as a result of meddling, these parts are put out of adjustment, causing the engine to miss or otherwise run improperly, they can be correctly adjusted. A tractor operator should train himself to tell the condition of his machine by the sound. The ear can be trained much more rapidly than one would believe at first thought, and can become a very sensitive and accurate indicator of the condition of the machine. Missing cylinders, riding valves, leaking manifolds, dry gearing, incorrect timing, and other incorrect adjustments or failure of automatic devices may be first detected by the ear.

In most engines, when burning kerosene there will be more or less unburned fuel which will work by the piston rings down into the crank case, diluting the oil there. Some engines are worse than others in this respect.

A good operator will change the oil in a kerosene engine twice a week. The bearings will last longer and the compression will be better for so doing. More oil will be used, but less fuel and fewer repairs will be necessary.

Overloading is the most common abuse of the tractor. Demonstrators and salesmen do it to make a good showing, and the purchaser desires to show himself as effective an operator as the demonstrator, believing the tractor should do what it did on exhibition. The tractor will do more work per season if loaded reasonably, for by so doing the delays and repairs will be reduced to a minimum. If the machine operates smoothly and powerfully, it should not be changed and tampered with in an effort to make it do more. "Tinkeritis" is a sad malady for a tractor operator. There is a wide difference between inspecting and tinkering. Work overtime in inspecting but sparingly in tinkering.—T. M.

Gathering and Storing Potatoes

WITH a potato crop somewhat below normal it is urged by agricultural department men to give close attention to the methods of handling and storing the tubers grown.

In Maine the potatoes are gathered in wooden splint baskets, from which they are dumped into barrels and hauled to storage houses or shipping points. The empty barrels in either case are returned to the field. In western New York and in Michigan and Wisconsin it is the general custom to gather the tubers in slatted crates in which they are hauled directly to the shipping point or to the storage houses. This method is considered much more satisfactory than that practiced in Maine because it reduces the chances of rough handling, especially when the digger empties the first basket which goes into the barrel. The usual custom is to dump the potatoes into the barrel without making any pretense of tipping it in order to protect them from the force of the fall. The injurious effect of such rough handling, especially if the tubers are somewhat immature, can be readily appreciated. Much of this injury could be avoided by a little care, when emptying the first two or three baskets, in tipping the barrel, or lowering the basket into the barrel.

In western Minnesota and points west of that territory the tubers are gathered in wire baskets, from which they are thrown on the grader, screened and put in two-bushel sacks, or from two to three baskets are emptied into each sack, which is then hauled to the storage house without

tying, the grading in the latter case being done in the storage house as the crop is marketed. In the east little grading is done in the field other than leaving the small, scabby, diseased, sun-burned or badly cut tubers on the ground to be gathered up later for starch making or for stock feeding. Little, if any, care is exercised in this respect when the crop is sold directly from the field.

In the west, where field sizing is most commonly practiced, it is the rule to have the potato sizer mounted on metal or wooden runners to which one or two horses are attached. The grader follows the diggers as they move back and forth across the field. Usually one operator can size and sack the potatoes gathered by three diggers. Where the crop is handled in this manner all the sound tubers are picked up at one operation. This device screens and separates the crop into two sizes, and the operator who manipulates it is supposed to remove all of the sunburned, diseased and badly cut or bruised tubers as they pass over the screen, such tubers going into the culls.

In regions where late potatoes are produced on a commercial scale the problem of storage is an important one, as it is physically impossible as well as economically undesirable to attempt to market the entire crop in the autumn. The only way in which the potatoes can be handled successfully so as to insure a uniform supply throughout the winter is to provide sufficient storage on the farm or at the shipping station for sixty-five to seventy-five per cent of the total crop. Every commercial grower should make such provision as may be necessary to care for at least seventy-five per cent of his crop, and often he would find it convenient to be able to store all of his crop.

Various types of storage places may be employed, such as pits, cheaply or substantially constructed dugouts or cellars with straw and earth covered roofs such as may be found in the arid or semi-arid regions of the west, or a similar type with water-tight roof, which is in use in the middle west and some portions of the east, or the more expensive type of house such as is found in Maine.

The successful storage of potatoes involves their protection from extremes of cold and heat and their maintenance at a temperature of from thirty-five to forty degrees Fahrenheit. Sufficient ventilation must be provided to remove foul air and excess moisture. The storage house must be so constructed as to exclude light, as the table quality of potatoes quickly deteriorates in the light. The tubers should be dry and reasonably free from dirt when put into storage, as an excess of moisture or soil increases the amount of heat generated in a newly stored supply of potatoes. The soil tends to close up the spaces between the tubers, thus cutting off air circulation and helping to retain heat that would otherwise escape. All diseased, badly cut or bruised tubers should be removed from the crop before putting it into storage. It is not advisable to permit the stored potatoes in any bin to exceed a depth of five or six feet, and the floor dimensions of a single bin should not be greater than 12x12 feet unless it is provided with a series of ventilating shafts for the escape of moisture and heat. Ventilated division walls and floors are also very desirable.

Loss From Deep Storage.

Some commercial growers and shippers of potatoes store in bins so deep that the tubers form a layer ten to fifteen feet thick. This is almost certain to entail a much heavier shrinkage

loss than when stored at a depth of not more than six feet. The heavier shrinkage is the result of the greater amount of heat generated by a large pile of potatoes, which results in a higher moisture loss as well as a heavier loss from decay, as heat and moisture both help to develop organisms causing tuber rot. The losses under these conditions may reach twenty-five per cent and where all diseased tubers have not been removed at the time of storing the loss may exceed that figure.

Potatoes stored throughout the winter season under conditions meeting the requirements suggested above should not sustain an actual loss in storage of more than five per cent, and under exceptionally good conditions it may be as low as three or four per cent. Assuming that five per cent represents the average loss under good storage conditions and that twenty per cent would be a fair average allowance under poor conditions, the actual monetary loss sustained by the grower or dealer on 300,000 pounds of potatoes would in the one case be 15,000 pounds and in the other 60,000 pounds, or, expressed in dollars on a basis of one dollar per hundred weight, a loss of \$150 under good, and of \$600 under poor storage conditions. Besides this, there is an additional loss in storing potatoes to a depth of ten to fifteen feet which is not usually taken into consideration, and that is the mechanical injury through the cracking and bruising of the tubers at the bottom of the pile due to the great weight of the potatoes on top.





Farm Management Factors in the Cost of Crop Production

By Charles H. Graves

THE cost of production of farm crops is determined by a group of factors which depend on the ability of the farmer as a manager to organize in such a manner that the crops are produced with a minimum of labor and expense. These factors are:

1. Arrangement of Fields. It is not always possible to have the field arrangement of the farm exactly as one wishes. There may be some natural formation that necessitates an arrangement far from the ideal but this condition can often be improved to the extent that working the farm is much more efficient and easier.

An ideal arrangement would include the following features: All fields easily accessible to the buildings, no angles in the lanes or driveways where turning with heavy loads would be necessary, and as little land as possible taken up in lanes and division lines. With this arrangement we can save time by shorter trips to the barn, draw larger loads by avoiding short turns, utilize all the land for crops that is possible, and eliminate waste places that harbor weeds and plant diseases.

2. Size and Shape of Fields. The shape of the fields is equally important. Rectangular fields with square corners are the cheapest to handle. Uniform shape and size of fields permit efficient use of large team units and modern machinery. Large fields decrease the cost of every operation and also cost very much less to fence. If possible it is advisable to have the number of fields the same as the number of years necessary to complete a cycle of the rotation. For example, for a rotation of corn, oats and barley, wheat, and clover, requiring four years for a single field to produce all those crops, an ideal arrangement would be to have four uniform fields or, if very large, eight.

3. Rotations. The rotation determines to a large extent the distribution of labor on the crops. If the proper crops are chosen there is a sequence of operation throughout the season. This enables us to care for the crops with a minimum amount of labor at any one time. Since labor is from forty to fifty per cent of the entire expense of growing a crop, economy in this respect influences cost of production. A properly planned rotation will also keep the land in the best of condition and larger yields will be secured from a given amount of money and energy expended.

4. Efficient Use of Labor. The efficient use of labor is the most important of all the factors limiting the profits on farm products. This factor is dependent on practically every other factor involved and is of such importance that we will deal with this phase of farm management in another article.

5. Farm Equipment. The cost of production is also dependent on the equipment of the farm. It can be decreased if we do not confuse proper equipment with over-equipment. It is not the number of machines nor the money invested in equipment that counts, but machines that are adapted to the specific needs of the individual farm. It is the size of the farm, the shape of the fields, the number of horses kept, the number of men working, and the crops raised, that determine largely the equipment needed to produce the crops at a low cost of pro-

duction. In an article of this description it is impossible to make specific recommendations but these general rules and principles apply in practically all instances.

6. Arrangement and Plan of Buildings. Well arranged and properly planned buildings make the storing of crops much cheaper. The crops can be stored much more quickly and easily. If the buildings have been located so that they are convenient to the fields and the interior so planned that it is easy to get the crops in and out, valuable time is saved. The storage space in the barn should be arranged to meet the needs of the particular crops of the rotation so that each crop is stored in its respective space. Granaries should be so located that putting the grain in and out can be done without heavy and wearisome lifting. The roofs should be so constructed that hay slings and horse forks may be used, and many other conveniences that go to make the handling of the crops less burdensome. All of these things tend to reduce the cost of production. A great deal of thought can be given to this subject that will yield good returns in time saved and satisfaction to the manager.

7. Marketing. Marketing, although not a factor in production is very important since the crop does not actually yield a profit until disposed of. The cost of marketing is often an expensive item and depends, to a large degree, on the farmer as a manager to coordinate this with the other work so that the transportation of the crops to the market will not interfere with other farm activities.

"Do you think it pays us to raise oats?" asked a thinking young farmer the other day after he had figured out the yield per acre on his oat crop for this year. "We have threshed out only twenty-eight bushels per acre and really that won't pay us as much wages as if we had worked on the road." He was right. The oat crop was very light and when he expected a yield of sixty bushels he got less than half that amount. It seemed like a losing proposition but he was thinking in terms of growing oats only. Had he been thinking in terms of his whole rotation or the whole farm business his remark might well have been, "Of course, oats have been a poor crop this year but our corn crop has offset this so that on the average we have a normal yield. We can't do away with the oats entirely. They serve as a good crop to balance the rotation and we need both the grain and straw for the stock. There is little else for us to do just at the season that we are working on the oats so we are getting some returns for the time when otherwise our team might be idle. The machinery necessary for the crop is just the same as we use for the wheat and barley, so the oats help to lower the overhead on that. After all, we should not be discouraged because of a poor yield once in awhile, the yield this year is the lowest it has been in twelve years and only twice since the Civil War has the state average been so low."

Such a remark would have been evident proof that the young man was applying the principles of good management to his farm operation, considering each crop in its proper relation to the other crops and the farm business as a whole.

What Bulk Storage Means to YOU

ONE of the major services which the Standard Oil Company (Indiana) renders you, is to maintain at all times, at convenient points throughout the territory it serves, large storage tanks filled with gasoline, kerosene and lubricating oils for quick delivery to you when you need them.

Assume for a moment what would happen if severe weather or unforeseen transportation conditions should cut off deliveries from the refinery for a week, and that no appreciable surplus was available.

You would walk for your groceries. Your physician would be slow in arriving in case of sickness. Business generally would suffer through inability to make deliveries.

In a word, unless the Standard Oil Company (Indiana) maintains a tremendous surplus in the field at all times your domestic and commercial welfare would be jeopardized.

This vast storage of 156,528,950 gallons is but a single cog in the giant wheel of usefulness which the Standard Oil Company (Indiana) operates in discharging its obligations as a public servant in a manner satisfactory and beneficial to all.

Standard Oil Company

(Indiana)

910 S. Michigan Avenue, Chicago, Ill.

1850

Milk Producers' Annual Meeting

Fully Six Hundred Dairymen Meet at the Agricultural College to Review the Work of the Past Year.

PRESIDENT N. P. HULL, in his opening address before the third annual meeting of the Michigan Milk Producers' Association, emphasized the economic phase of the dairying business. He dwelt upon the inconsistency of dairymen going out and buying cows of unknown value at comparatively long prices to produce milk at less than cost. The time has arrived, he believes, when the dairy industry should be established upon business principles. To do this will require first a thorough-going knowledge of dairying and also a practical cooperative organization that will enable the owners of cows to gain the advantages of all legitimate economies in the purchase of supplies and the marketing of their product.

He made special mention of the work being done in the Detroit area. The producers' associations in this area discontinued their local organization less than two years ago and turned over to the present state association the cooperative projects that had been started. Soon after the state association had taken charge the present milk commission idea was inaugurated. Through this plan there has been less bickering and bitter feeling, no strikes have developed, and better prices have been paid to the producers of this area than to dairymen in another area in the central states.

President Hull warned the members present not to be too sanguine regarding the future of the association. He felt confident that the benefits derived through the organization had been sufficient to prevent disruption through outside influences. There is danger, however, that jealousies might develop from within that would threaten the usefulness of the institution. His observations had led him to the conclusion that more farmers' organizations are wrecked through internal disruption than from outside competition.

Business Matters.

In the business session following the address of the president, a motion to change the manner of selecting officers from the direct vote of the delegates present to selection by the board of directors was defeated after a rather spirited debate. The members present also favored the nomination of candidates for officers by a nominating committee instead of having selections made from the floor. Mr. Porter was chosen chairman of the nominating committee. Milo D. Campbell was appointed to head the committee on resolutions.

The following officers were re-elected for the ensuing year: President, N. P. Hull; vice-president, J. C. Near; secretary and selling agent, R. C. Reed; treasurer, H. W. Norton. The three directors elected for one year were: Milo D. Campbell, M. L. Noon and L. C. Harwood; for two years, R. C. Potts, M. W. Willard and A. M. Ackles, and for three years, J. Brackenberry, W. J. Barnard and Dr. McKenney.

The report of Treasurer Norton and of the auditing committee showed the association to be in excellent financial state and that the books of the treasurer were in perfect balance with those of the bank. The total disbursements for the year amounted to \$22,285.72. The total resources including the balance on hand November 1, 1918, were \$37,988.49. This leaves a balance in the treasury of \$15,702.77. All bills are paid by check.

Dairymen Not Profiteers.

Results of investigations carried on by our experiment station for the purpose of throwing light upon the economic status of the dairying business

were presented by Prof. A. C. Anderson. The general conclusion derived from the data so carefully gathered and arranged by the professor and his co-workers, was that Michigan dairymen can not be classed as profiteers under the generally accepted understanding of that term.

Two investigators working separately in two different counties found after a careful study of twenty-five dairy farms in each county that the farmers were losing on an average \$29.39 per cow in one county, and \$9.69 per cow in the other. The variation in the losses was explained by Prof. Anderson to be due largely to the proportion of home-grown feeds produced upon the farms. The following year a similar study

a total gross profit on these ten farms of \$959, or an average of \$96. The total capital invested in these ten farms was estimated at \$251,803, which gives a profit of thirty-eight hundredths of one per cent. The average number of cows kept on these farms was about eighteen.

Prof. Anderson held that from the above showing, which was based upon as accurate figures as it was possible to obtain, the dairy farmers of Michigan could hardly be held for profiteering. He defended the right of dairy farmers to charge up to the cost of production a reasonable managerial expense. The variation in the production of the farms investigated strongly indicates the value of the human equa-

ity of our people will stand for the right as they understand it. It is therefore the duty of those who are operating under economic handicaps to lay their claims for changes and readjustments before the public.

Mr. Campbell complimented the Michigan Milk Producers' Association upon the successes of the past year. He declared that the association has been instrumental in improving the marketing conditions. He warned that we should not severely criticize those who earnestly question methods and policies of the organization. Often these men are responsible for progress and for giving the institution a genuinely healthy tone. Their value is frequently greater than is that of members who accept every act of the organization without question.

State lines are gradually disappearing. More and more are we depending upon Washington as our really functioning government. An effort is now being made to amend the Lever act to provide for the appointment of twenty-four men with power to fix prices on certain lines of products. The commission thus provided is to be dominated by consumers. The result of such an arrangement would be, according to Mr. Campbell, to first set the price that the consumer would be willing to pay and then to work from this point back to the producer, allowing the last named person whatever might remain after each factor or dealer had taken his commission. Proposals of this kind can be met through organization. It is imperative not only for their self-defense but also for the purpose of working out economies in production and marketing, for our dairymen and farmers to organize. Perhaps farmers have really greater need for getting together than have any other class, since no profession requires greater skill and longer training and no other business is carried on under such uncertain conditions.

Ohio Dairymen Have Trouble.

The Detroit Commission method of determining the price of milk was complimented by Prof. Oscar Erf, of the Ohio University. This plan, however, was tried out in the state of Ohio and failed to work, because the members of the commission were apparently interested in only one thing, and that was in putting the price of milk down. The personnel of the commission is the big factor in the success of such a plan.

Prof. Erf reviewed organization experiences extending over nearly a quarter of a century. About twenty-three years ago dairymen of eastern Ohio affected a promising organization. Milk was then selling at nine cents a gallon. Some of the members wished to ask eleven cents of the distributors, while others held out for eighteen cents. The result was a split in the ranks of the association which virtually nullified its usefulness.

Some ten years ago the Ohio Experiment Station undertook to secure costs on the production of milk. A careful study revealed the fact that the owners were receiving 1.87 cents per hour for time devoted to dairying while hired help on farms was then paid an average of \$26 per month, or eight cents per hour. In employing such labor for milking cows the farmer received only one-quarter of what he was obliged to pay the hired man. A recent study of milk costs completed in September showed the investigators that the average herds were producing milk testing 3.5 per cent at \$4.45 per cwt. This milk, said Prof.

(Continued on page 571).

Resolutions Adopted:

THE following resolutions were unanimously adopted by the six hundred delegates and members present at the third annual meeting of the Michigan Milk Producers' Association at the Michigan Agricultural College, October 21:

Resolved, that it is incumbent on each and every member of the Michigan Milk Producers' Association to practice self-control, use discretion, be loyal, and contribute the maximum of intelligence, self-denying service to the real cause for which this organization was perfected.

Resolved, that we re-affirm important purposes of the Michigan Milk Producers' Association to be: To increase its efforts to keep better cows, to improve methods of production and distribution, and to secure greater general efficiency to the end that both producers and consumers may benefit thereby.

Resolved, that we, the members of the Michigan Milk Producers' Association in annual meeting assembled, do hereby express our most sincere appreciation of the patient, intelligent and untiring efforts of President N. P. Hull, Secretary, R. C. Reed, together with our efficient treasurer and our capable and wise board of directors. We pledge to our newly elected officers and to each other our faithful services and our loyal support for the coming year.

Resolved, that we the milk producers of the state of Michigan in convention assembled, do hereby commend the Detroit Milk Commission for its work in the Detroit area and we do suggest that this commission be continued until some better method may be found for performing the most difficult task now assigned to its members.

Resolved, that it is a function of the State Association to act as an intermediary in cases of difference or differences that may arise between local associations and the distributors to the end that discrimination may not exist at the arbitrary will of the distributor.

Resolved, that we as members of this association knowing full well the helpful benefits coming to the agricultural interests of our county, state and nation, by reason of the establishment of the farm bureaus, pledge our support to the untiring efforts of our county agents.

Resolved, that the Michigan Milk Producers' Association in annual convention assembled, does hereby affirm its faith in the declaration of principles for the coordination of agriculture, manufacturing, commercial, financial, professional, trade and other organizations, individuals and societies, loyal to the traditions of our country promulgated by the committee representing "Our Country First" conference recently held in Chicago.

showed the loss in these communities to be \$10.60 and \$10.24 per cow respectively.

Some, however, have raised the question that the receipts on dairy farms were not limited to the income from dairy products. To determine therefore, whether these farmers were enhancing their incomes from any other source a careful analysis was made of the entire business of ten farmers. The total receipts from all sources, including crop and animal sales were listed, from which was deducted the total cost. This work revealed the following situation: Farm No. 1 lost \$388 during the year under consideration. Farm No. 2 lost 415; farm No. 3 made a profit of \$1,035; farm No. 4 made a profit of \$1,086; farm No. 5 also made a profit of \$575; Farm No. 6 lost \$261; farm No. 7 lost \$995; farm No. 8 had a profit of \$106, and farm No. 9 a profit of \$1,175, while farm No. 10 suffered a loss of \$959. This shows

tion in the conduct of this line of farming.

The question was asked Prof. Anderson if, in the light of these findings it would not be wise for dairy farmers to dispose of their cattle and farms. To this he replied that it would not. Men who have spent their lives in the production of dairy products would naturally know more about this line of business than they do about other kinds of work. It is better, he thought, to suffer a little loss here—temporarily, he hoped—than to fly to other troubles we know not of.

Mr. Campbell Urges Further Organization.

Confidence in the integrity of the American people was the premise upon which Hon. Milo D. Campbell, president of the National Milk Producers' Federation built his hope that the injustices under which the dairymen in many sections of the country are now operating, will be corrected. A major-



Shall We Buy Feed in Carlots?

By W. F. Taylor

I AM sure that in a large number of cases this question ought to be answered in the affirmative. I think so because I find an increasing number who do purchase most of their feeds in this way. When compared with the people who still buy feed of the home dealer, often taking home but a single sack at a time, the number of large buyers seems small after all. Some of those who do buy directly, are having difficulties that well nigh discourage them, while others who have been in the habit of buying largely together have practically given it up, and now are going to the local business man, and paying his price, asking no questions. I have written some things regarding this subject before, but am sure from what I am learning that much more should be said.

Right at the beginning let me speak regarding the attitude of the farmer toward all direct effort, either in buying or selling. Too often we do not think of these matters until we become provoked over the action of some local dealer in our town. Then we are ready to do almost everything to even up with that man. But this is a poor time to start in a cooperative venture. Generally speaking, I have little confidence in the good judgment of a man when he is angry. The experience of the average farmer in large business transactions is limited. To do business successfully requires a man with a strong heart and a clear head. Such a man will tell you, if you ask him, that when you are mad is a poor time to do anything, but to sit down and think it all over. I trust we are not organizing cooperative associations, building or renting warehouses, and gathering and shipping live stock, because we are mad at the warehouse man, or "at the outs" with the buyer of live stock. Rather, are we not doing our own marketing because we can do it with less labor, and much less expense than the private business man?

If we have united to do business for ourselves because we realize that we can do it more economically than the dealer can do it for us, (and this proves to be true in our experience), our cooperative venture is going to prove of lasting benefit to us. But if we enter upon the practice of cooperative buying or selling with but little knowledge of business, prompted by a notion that our dealer is not treating us fairly, the chances are that we may make some bad mistakes, and that after we have gotten over our feeling against the local business man, we may abandon the effort to do business for ourselves.

I believe it to be the privilege and the duty of farmers generally to combine and ship their live stock. I am certain that wherever potatoes are produced and shipped in any quantity, the growers should combine and do the shipping for themselves. In the grain growing districts the growers should handle their own grain, and in dairy localities farmers should buy their feeds in carlots, taking feed directly from the car and avoiding the labor and expense of storage. I fully believe in these things, without the least ill-feeling toward any dealer in the world. It is not a question of the conduct of the middle man. The important question is, "Do we need him

at all in the buying of feeds? If so, to what extent, and under what circumstances?"

Grains are a part of the raw material used by dairymen in the manufacture of dairy products. These products must be sold in the wholesale market in most cases, and this being true, the grain must be bought at the lowest possible price. Or, to put it in another way, the grain must be gotten from the farmer who grew it and offered to the dairyman who needs it and uses it in the manufacture of milk, at the least cost possible. The time has arrived when we must get our minds off the shortcomings of individual distributors, and find better methods of distribution.

The higher feeds are in price, the more important does it become to avoid storing them in warehouses, because more money is invested, and the expense of handling is often greater, owing to the higher labor cost. If we have a thousand or fifteen hundred dollars tied up in a car of feed, it will not do to forget that probably someone is either paying or losing the interest on that amount, and such payment or loss runs into money very fast. The only proper place in which to store feed after it is shipped to the locality where it is to be used, is in the farmer's storehouse, on the farm where it is to be fed.

Another element of expense in the handling of feed is the practice of selling on credit. It is hard for the average dealer to do a cash business in the handling of feeds because he does a credit business in the sale of other commodities.

Much is being said just now about the unused credit of the farmer, and relative to a larger use of credit on his part; and we have no quarrel with the people who are saying these things. But the farmer will nearly always find it to his advantage to market his credit at the bank, and pay cash for the things he buys. A friend of mine who had at one time been heavily in debt, but who had paid out, and was a very prosperous farmer, said this to me: "Those were hard years, but in all that time I owed but one man, and he was the banker in our town. He trusted me and I asked no one else to do so." If a community of dairymen are intending to buy their feed in carlots, prompt payment at the car door is a condition which must be adhered to without exception, save in very few special cases. The writer has known of instances where this condition has not been insisted on, but in every case the plan has worked badly.

I have bought, sold and delivered feed to my neighbors for years strictly for cash, and there has been not the least difficulty in performing this service. Now and then a new customer asks for credit, but I always say to him that while I might trust him without hesitation in a purely personal transaction, it would not be to his interest nor to that of any of us to do it. I explain to him that the only guarantee of the continuance of a plan whereby we are able to secure feed at a lower price than the average dealer pays, is that we shall each pay promptly on delivery, for what we buy.

The other day we delivered a car of acid phosphate cheaper by a dollar and

(Continued on page 545)

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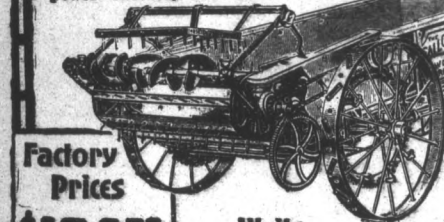
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Often in the deep snows of winter an automobile cannot get through the drifts, but the horse can travel anywhere if he can secure footing. There is just one thing will insure safe footing on any road anywhere any time, no matter how icy or slippery, and that is the



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Whatever the occasion, a hurried trip to the doctor, an important call to town, your horse is ready when you are ready. The wise horse owner will go to his horse shoe early and have the safe, reliable RED TIP SHOES put on. Then he can laugh at the weather. No sleet storm, no sudden freeze will hold him back. His sharp, strong RED TIP CALKS can be adjusted in 20 minutes, and he is ready for the road. Avoid substitutes. LOOK FOR THE RED TIP

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Special Report on Commercial Potato Crop

THESE comments are based on conditions existing on October 15, and indicate any change that has occurred since the October 1 report. The next special commercial potato report will be issued the first part of November and will contain estimates of the crop that will grade No. 1, No. 2, and culls.

Maine.—No important change has occurred since the October 1 report. The weather, except for two or three frosts, has continued unusually and unfavorably warm. Due to this condition the rot has probably continued over southern New England, although the weather in Aroostook county has perhaps been cool enough to check it there.

Potatoes are moving rather freely from Aroostook, and the quality remains good.

New Hampshire.—Coos county, with a light crop, reports no change since October 1.

New York.—During the first two weeks of October prospects in the commercial potato sections of New York state improved about two per cent. In the central counties, where considerable rot was reported on the first of the month, the loss was heavier than was expected, but in most of the section west of Rochester and Elmira and also in part of the region north of the Adirondacks the tops continued green until October 7 and the crop made considerable growth. In these sections the yields are running above earlier estimates. On Long Island no change has been reported.

Ohio.—Due to the prolonged season the late commercial crop had failed to mature up to October 1. However, during the past two weeks beneficial rains have occurred and reports indicate that the crop has improved from five to twenty per cent.

Michigan.—Reports show that the commercial potato prospect has improved considerably within the last two weeks. Frequent rains, good growing weather and the holding off of killing frosts until October 11, has increased the crop from five to ten per cent, in all but the southern counties, in which there is practically no change. Good quality, and little rot prevails in all the potato sections of the state. The estimate for the state is around seventy per cent for the commercial potato area, an increase of four points over the October first estimate.

Wisconsin.—The commercial potato crop for October 15 shows practically no change in quantity of the crop, but shows some improvement in prospective quality. Killing frost last week occurred over practically the entire commercial potato area. This will practically prevent any decrease in the prospective quantity, but will probably increase the quality of the crop.

Harvesting is in full swing everywhere in the state. In the northern districts, harvesting was general on the first of the month, but further south it was delayed because the potatoes were not mature. The crop is being marketed as rapidly as the dealers can receive it. At present, car shortage through the commercial potato districts has reduced the shipments that would have been otherwise possible.

Minnesota.—Reports from this state indicate that the late commercial crop has undergone no important change since the October first report, which showed a sixty-nine per cent condition on that date. From present indications this state will produce a surplus crop for shipment, equivalent to 24,500 cars as compared with 26,000 cars last year.

South Dakota.—No change of consequence has occurred to the commercial crop since the last report. As a

result of the dry weather during the growing season there are many small potatoes. Although this will reduce the size of the crop, the quality remains good. Surplus production will be confined to only a few sections, noticeably in the northwestern corner of Deuel county and the region of White and Bruce in Brookings county.

Pennsylvania.—No change is reported in the commercial crop for this state. Harvesting of the crop continues. Although some rot is reported, the yield will be fully up to the average with prospects of its being better.

North Dakota.—The condition of the commercial potato crop shows practically no change since the October 1 report. This report gave a condition figure of fifty-nine per cent as compared with seventy-six per cent, the ten-year average.

Nebraska.—Temperatures of ten to twelve degrees above zero on October 10 are reported to have injured as high as twenty-five per cent of the potatoes in certain fields that were not harvested. Inasmuch as the large bulk of the potatoes were harvested at that time the total damage may not exceed five per cent. Harvesting is practically completed at this time. It appears that the yield will average better than expected and the total shipments will probably exceed the October 1 estimate of 2,574 cars in spite of the loss from the freeze of October 10.

Colorado.—Latest reports show a slight decline in the commercial crop

of the Greeley district since the October first report. Shortage of rain at planting time, and a decrease of acreage planted, will considerably reduce the surplus production of this district.

The San Luis Valley, which has the best crop in the state, has shown a small drop since the last report. Notwithstanding this fact, this section is growing one of its best crops and will exceed its nearest competitor, the Greeley section, by almost 2,000 cars.

Although indications now point to a slight drop in the commercial crop for the state, the revised estimate is now placed at 10,000 carloads.

Idaho.—The frost has done very little damage and on the whole the commercial crop has shown an improvement over the October 1 report. It is now estimated that ninety per cent of the crop is harvested. Because of an acute shortage of cars a large number of farmers are unable to market their crops.

Shipments from Burley and the surrounding sections will equal those of last year, while Twin Falls and Idaho Falls and the adjacent territory will ship possibly seventy-five per cent of last year's crop.

Oregon.—No material change in the condition of the commercial crop has taken place since the October 1 report. A considerable portion of the crop has not as yet fully matured and the quality of the potatoes now offered is not up to standard.

Agriculture Versus Other Industries

(Continued from page 540).

by the employers group are believed to be not only vital to agriculture, but vital to the common good. The highest concept of government in a democracy is to coordinate the functions of all its parts into a perfect and symmetrical whole. In the case of the individual the mind wisely protects physical well-being and produces proper physical and mental balance. Theoretically, democratic government does this for all its people. In practice, however, certain members through intensive organizations acquire and exercise undue influence, destroying thereby the harmony which should exist between all the essential elements.

The situation which has brought about this conference is due to lack of proper recognition of this basic duty of government.

Agriculture comes into this Industrial Conference seeking to give practical expression to this idea. The representatives of agriculture believe that capital, labor and agriculture are the three principal members of the industrial body and must have equal rights and equal treatment.

Farmers aware of the disparity which has arisen are earnestly endeavoring through their organizations to secure for agriculture its proper field of influence in this triumvirate so that all may be subjected to the welfare of the whole, contending the while that influence and activity developed within the ranks of agriculture are superior to paternalism of any kind and the only adequate means of developing its innate strength and power. Farm

organizations now make articulate the demand of farmers everywhere that capital and labor shall not continue to make more unbearable the economic conditions which have caused the decline in agriculture.

SAN JOSE SCALE STILL WITH US.

THE absence of San Jose scale from the orchards during the last two years has been generally quite noticeable, but although it was seldom seen in 1918 owing to the work of insect parasites and the unfavorable weather conditions during 1917 and 1918, it was not entirely exterminated and owing to its ability to rapidly reproduce it was quite prevalent in some orchards in 1919, in fact we have seen trees whose branches were completely encrusted with living scales.

Michigan orchardists should take early and effectual precautions that this insect does not again become generally distributed. The remedies are known and there should be no delay in applying them. Orchards in which the presence of the scale was noted in 1919 should be sprayed, either with lime-sulphur solution one to eight, or "Scalecide." If dry lime-sulphur is obtained for use against the San Jose scale, twenty-five pounds should be added to fifty gallons of water; even then the amount of soluble sulphur will be less than with lime-sulphur solution testing thirty-two Baume, diluted at the rate of one to eight parts of water.

While we prefer rather late spring applications for the San Jose scale when the trees are but slightly infested, it is very important that the scale be exterminated at this time, and before it is given opportunity to again become as plentiful as in former days. For this reason we advise the spraying of badly infested trees this fall as soon as the leaves have dropped, and repeating the application in April. In order to obtain good results care should be taken to reach every part of the trees.

L. R. TART,





"MY use of Goodyear Cord Pneumatic Truck Tires shows me that pneumatics not only travel better on our clay roads but also are better for the roads. Solids have a hard time in the soft ruts and they are hard on the roads. I have observed that others here are taking note of this."—A. J. Emmerton, Farmer, Bloomer, Wisconsin

THERE is scarcely any work done on the Emmerton Farm, near Bloomer, Wisconsin, that is not aided directly or indirectly by a motor truck on Goodyear Cord Pneumatic Truck Tires.

Their traction enables this truck to haul fertilizer over plowed ground, to carry feed to livestock wherever located, to deliver oil to tractors and to distribute fencing.

For the same reason the truck

easily transfers corn from binder to silo filler and grain from separator to bins—all off-the-road work.

Mr. Emmerton's experience, however, equally emphasizes the advantage of the Goodyear Cords over solid tires on the local clay roads, noting that the pneumatic-shod truck overcomes conditions impassable to solid-tired trucks.

Still another important significance attaches to his statement

that the pneumatics are regarded with growing favor in the surrounding community because their cushioning action saves roads.

It prompts the observation that this particular virtue of the pioneer Goodyear Cord Pneumatic Truck Tires also is a factor in their rapid and broadcast rural adoption.

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Our Service Department

DIVISION OF ESTATE.

My mother does not want to make a will; if she dies without making a will, can the real and personal property be divided before all the children are of age?—D. B.

The estates of persons dying without making a will are divided as soon as the estate can be probated and all debts paid; at which time the shares of any under age are turned over to the custody of their guardians and the shares of those of age are turned over to them. In the case of real property which descends in undivided shares any person having an undivided interest in it is entitled to partition by order of court as soon as the estate is closed.

JOHN R. ROOD.

CLAIM AGAINST RAILROAD.

I had two head of cattle killed on the railroad last spring. They got through the railroad fence. The company appraised them at \$150. It seems as though they had ample time to settle. Any information will be greatly appreciated.—D. B.

My experience with claims against railroad companies, which has been considerable, is that it is time wasted to dicker with the claim departments. Their excuse for existence seems to be to tire claimants out and settle for as little as possible. This is certainly a class of cases in which a lawyer's services are well worth the cost.

JOHN R. ROOD.

RUN-AWAY BOY.

My boy, eighteen years old, left home without cause after I had bought an automobile to keep him on the farm. He is now working in a factory in the city. Can I claim any of his wages to pay for the car?—P. L.

The wages of minors belong to the father, and he can demand the payment of the wages to him unless he has manumitted the son, that is to say, unless he has renounced his claim to custody of his son and his earnings.

JOHN R. ROOD.

LETTING SHEEP OUT ON SHARES.

Please publish the present rules for letting sheep on shares or out to double.

St. Clair Co.

R. G. B.

There are no standard rules with regard to letting sheep on shares. It is more of a private agreement between parties. I have known where sheep were let out to double in three years and this makes thirty-three and one-third per cent interest, and I have known where they let sheep out for four years, which makes twenty-five per cent interest. Sometimes they will let out for one-half the increase, the man who owns the sheep can well afford to let out on any of these plans because he is getting big interest. The man who takes the sheep on any agreement could better afford to borrow the money and buy the sheep.

C. C. L.

LIME QUERIES.

When is the best time to put lime on the soil? Is it a good time now? What kind of lime would you advise, if you have any preference? Which is the best way to spread the lime? Are there devices for doing this? What would lime by the ton or carload come to, delivered here?

Jackson Co.

O. S. L.

Lime may be applied any time during the year when the ground is in condition to receive it. Lime is not spread and plowed under like manure, but it is always sown on top of plowed

ground and worked into the surface soil by means of harrows. Lime is used to correct a sour or acid condition; and, on account of leaching and loss by cropping, the surface layers of soil first lose their natural lime and become sour. In case a field which produced a cultivated crop this year is to be limed with the intention of preparing it for alfalfa, the lime ought to be sown and worked into the soil this fall. The alfalfa seed may be sown early next spring with a spring grain crop, if desirable, or alone any time until mid-summer. Such a field would not need to be plowed but can be put in good condition by harrowing alone. On account of the slowness of the action between pulverized limestone and the soil acids, it is better to apply the lime several months ahead of the seeding. If the lime cannot be secured for use this fall, it may be put on as early as possible next spring, and the seeding delayed.

Because of the caustic action of burnt limes on the soil, it produces a rapid neutralization of soil acids, it is true, but, at the same time, it causes undue decomposition and loss of humus, and on account of the greater expense, the majority of farmers who need lime are using marl, waste lime from beet sugar factories, or pulverized limestone. These are slower in action, but they are cheaper and cause no undesirable results.

Lime is sometimes spread by hand or with a manure spreader, but the best way is by means of a regular lime spreader, of which there are several kinds on the market. Consult the advertising columns of any farm paper, or talk with your nearest implement dealer. These spreaders may be set to sow from three or four hundred pounds up to two tons per acre. The largest amount is generally none too much for the average soil. Some very sour soils may require much more than two tons for the best results.

The delivered price of lime in Jackson county will depend on the kind of lime secured and shipping distance. I am of the opinion that you can get a good quality of lime delivered in bulk in carlots for \$3.00 or less per ton. A carload will vary from twenty-five to fifty tons.

H. L. B.

LETTING SHEEP ON SHARES.

My son has eight sheep to let out on shares. Will you tell me how would be the most satisfactory way to both parties?

Kalamazoo Co.

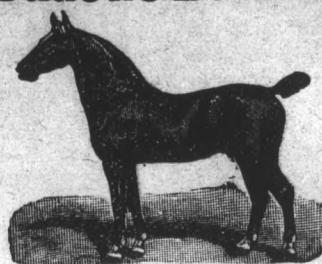
F. H. M.

It is quite a common practice to let sheep to double in four years. There is not so much of this business done now as formerly. Sometimes sheep are let to double in three years. Another practice is to let out sheep for one-half the increase and one-half the wool annually. The kind of a man you let the sheep to is of more importance than the particular manner of letting. A good careful man will keep the sheep in better condition, and they will be looked after much more carefully than a careless man and a poor feeder. Care should also be taken that the man has some responsibility. I remember once a flock of sheep was let to an irresponsible man to double in three years. The man was a renter and had bad luck, and he was a poor business man. The sheep did not do well and he finally sold all of the flock. The owner lost everything as nothing could be recovered. If you can get a good responsible man to take these sheep any one of the three plans would be very satisfactory.

L.

Warranted to Give Satisfaction

Gombault's Caustic Balsam



Has Imitators But No Competitors

A Safe, Speedy, Positive Remedy for

Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs and Lameness from Spavin, Ringbone and other bony tumors. Cures skin diseases or Parasites, Thrush, Diphtheria. Removes Bunches from Horses or Cattle.

As a Human Liniment and Antiseptic for external use it is invaluable.

Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.25 per bottle. Sold by druggists, or sent by parcel post, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.



We quote exact prices and pay what we quote. Furs are high. You get more actual cash by shipping to OHSMAN and better all round satisfaction. We want the best and are willing to pay well to get them.

WE GRADE LIBERALLY—PAY PROMPTLY
Our assortment will please you. An honest valuation and quick payment is our policy. We charge no commission. We pay transportation and send money same day furs reach us. Write for price list and tags free.

WE TAN YOUR HIDES
We buy your horse hides, cow hides, calf skins, etc., and assure you highest market value. From your cow and horse hides we make fur coats, robes, etc., at money saving prices. Be sure to get our free catalog, hide quotations and shipping tags. Buyers of Hides etc., Since 1891

OHSMAN & SONS CO.
Dept. 106 Cedar Rapids, Iowa

MORE \$\$\$\$ FOR Your RAW FURS IN NEW YORK

My Prices Are Guaranteed

Beware of High Price Lists sent out to deceive you and get your furs. The higher they quote the less you get.

The secret of a square deal is honest grading at market prices. I guarantee my price until next list is issued and will not quote more than I can pay on an honest assortment.

Enjoy that peace of mind that comes to a shipper when he knows he is shipping to an honest firm.

You will make no mistake shipping to me and be glad you made my acquaintance.

**HONEST GRADING
HONEST PRICES**

No commissions deducted. Pay express & parcel post charges. Prompt returns guaranteed.

Write at once for Price List while you have me in mind.

BENJAMIN DORMAN
147 W. 24th St. - NEW YORK

Revillon Frères

WE WANT ALL THE
RAW FURS YOU CAN TRAP

We will pay you well for them remitting all express or parcel post charges. Being the oldest and largest fur house in the world we can give the best prices and send check immediately.

Send us your name for our price list when issued

REVILLON FRÈRES
442 West 28th Street, New York City

THE FALL CALF.

I HAVE found it rather more difficult to make a calf do well when it was born in the fall. For one thing it is colder usually than it is in spring, and this condition keeps on growing more so as we get into winter. The reason for this slower growth in cool or cold weather is that calves, like all young creatures, need to be kept warm. The baby is just the same way. Keep it warm and it thrives better. Warmth aids growth in the calf.

For that reason I try to have a warm and comfortable place for the calf that comes in the fall and is to be raised. A few days after the calf is born I like to take it away from the mother cow, and if I could I would put it so far away from the stable where cows are kept that the cow could not hear it when it bawls. Nothing is worse for a cow than to be within hearing of the calls of her calf. But not always is it possible to remove the calf so far. The next best thing is to care for the calf so well that it will not bleat much and the cries it does make, if well fed, are not as apt to trouble the mother.

Then, too, a dry place is necessary to comfort, and comfort is the one thing a calf ought to have to do well. The straw given the calf should be changed every day. The calf soon wets up a good deal of straw if it is placed where it can. Straw that has been used this way may be placed in the drop back of the cows and go out with the manure. It is good for little else. By shaking out the straw that has been under the calf and drying it we can save some of it for another time. Straw is so valuable in these days that we must waste as little as possible.

One thing more we need to do for the fall calf, and that is to furnish it as much green feed as we can. Grass cut from the after-feed may be used as long as the frost stays off. After that we have found it best to go to feeding hay. A nice lock of well-cured hay, clover or timothy, is one of the best things for a calf. Not only does it tend to make the calf grow, but it has a good effect in preventing bowel troubles. The juice from the hay is a good tonic.

To go with the hay, we need some grain. Especially if timothy hay is fed there should be some kind of a laxative grain given. I like wheat bran or mixed feed as well as anything I ever tried. The bran makes muscle and at the same time keeps the bowels regular.

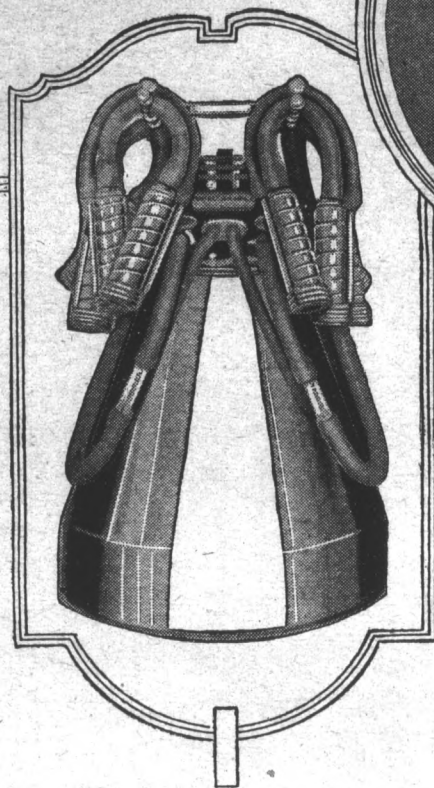
It is not time wasted to brush off the calf regularly every day. It always seemed to me a well-groomed calf would grow faster than one that was rough and dust-covered all the time. It might not be thought that a calf's hide would get very much clogged with dust and seeds, but if you have not groomed your calf for a week or two, just part the hair and look closely, and you will see that the pores of the skin are badly clogged, and when that happens the calf cannot grow as fast nor assimilate its food as it otherwise would. A clean skin saves feed, for the calf uses to better advantage what is given it.

All the time we try to remember that we are dealing with a cow of tomorrow.

E. L. VINCENT.

YIELDS OF SUNFLOWERS.

ONE field of sunflowers in Morton county, North Dakota, weighed out nine and a half tons per acre. On the same farm corn was estimated at three tons, according to Max Morgan, county agent. He reports another field of sunflowers that was estimated at twelve tons per acre and the corn under similar conditions made a yield estimated at five tons. The sunflowers also have the advantage in that light frosts in spring and fall do not hurt them.



The Perfection is the Milker with the Downward Squeeze Like the Calf.



Louis Methers says:

"The Perfection is the best rig ever invented."

DROP in at Louis Methers' Farm round about milking time some day and you'll find him out in the barn with his neighbors around him watching his Perfection Milker do the work. Every man who knows Mr. Methers knows about the success of his Perfection and wishes he had one, too. One Perfection in a community always brings many others as soon as folks see what a labor saver it is. "I cannot say enough for the Perfection Milker. It is the best rig ever invented," says Mr. Methers.

"You can use the Perfection two times a day the year 'round, and it never balks or refuses to work on Sunday night like some hired men do. I have used my Perfection for one year now and it has never failed yet. There is some one here nearly every night that wants to see the Perfection and stay for milking time."

The Cows Like It

When it's late at night and the cows are hot and restless, it's mighty easy to get mad and kick a cow or milk her hastily and hurry away. The Perfection is the only hired man you can depend on to milk every cow exactly the same every day. "The cows like my Perfection better than hand milking," says Mr. Methers. "I had one cow that cut her teat all to pieces in the fence and the only way I could milk her was with the Perfection. I have one double unit but I am thinking of enlarging my dairy by Fall. With the Perfection I can milk as many cows as I can own."

Names, Addresses and Catalog Sent Free

We will gladly send you names and addresses of Perfection owners. Write to them yourself and see what they tell you about the Perfection. We will also send free a copy of "What the Dairymen Wants to Know,"—the great book that answers every question about milking machines. Write today.

Perfection Manufacturing Company

2126 Hennepin Avenue

Minneapolis, Minnesota

PERFECTION MILKER

Watts' Famous Corn Shellers!

NOW SOLD EXCLUSIVELY BY US

\$69.50

for Watts' No. 4 with Cob Stacker and Grain Elevator.

\$89.50

Buy the Watts' No. 4 Corn Sheller with automatic feeder as illustrated. 75 to 125 bu. per hr. with a 2 H. P. to 6 H. P. engine. Order No. KB-902.

Buy On Your Own Terms!

HARRIS BROTHERS CO.

Dept. KB-42

35th and IRON STREETS CHICAGO, ILL.

Here's Big News for America's Corn Growers—Our Fall announcement and your best chance to own a World's Famous Watts' Corn Sheller in any size—small, medium or large capacity. We are now able to offer them at Big Cut Prices in all sizes, under most liberal terms with a 60-Day Free Trial and a guarantee of complete and lasting satisfaction. All other sizes are offered at equally big reductions.

Watts No. 1. Corn Sheller for the man who shells corn only for his own use. Capacity 50 to 75 bushels per hour with a 3 H. P. engine now \$34.50. Order No. KB-900.

Watts No. 4. Corn Sheller with cleaning system, cob stacker and grain elevator \$69.50. Order No. KB-901.

Watts No. 7. Corn Sheller with standard equipment including wagon box, grain elevator, corn stacker, type "R" feeder, on steel trucks. Capacity 200 bushels per hour, now \$265.00. Order No. KB-903.

Watts No. 8. Double Cylinder Corn Sheller for custom work. With standard equipment, wagon box elevator, swivel cob stacker and feeder on steel trucks. Capacity 600 bushels per hour, now \$390.00. Order No. KB-905.

Write today for Free Watts' Corn Sheller Book No. KB-77

Dept. KB-42 35th and IRON STREETS CHICAGO, ILL.

Anthony Fence

A perfectly balanced staple tie fence. Strong wire, thoroughly galvanized. Every rod of 6-inch stay fence has 33 stay wires. Special book sent free. Dealers Everywhere.

American Steel and Wire Company Chicago New York

BARN PAINT \$1 PER GALLON

Get factory prices on all paints. We guarantee quality. We pay the freight. Franklin Color Works, Dept. H, Franklin, Ind.

CULL BEANS FOR FEED

Car lots or less. Ask for prices. YOUNG-RANDOLPH SEED CO., OWASSO, MICH.

Milch Goats For Sale. Saanen and Nubian Buck for service. J. W. Dasef, Stanton, Mich.

ONE-SHAPE GRINDERS

It PAYS TO GRIND ALL GRAINS

Look to the Grinders. They do the work! Bowsher's Cone-Shape grinders are the correct principle in Feed Mill construction. They mean larger grinding surface close to center of shaft; thus More Capacity, Lighter Draft, Longer Life.

"Desire to express my appreciation of the long-lasting, trouble-proof Bowsher. Have used a No. 4 ten years with less than One Dollar per year for repairs." E. W. Watt, Jacobusburg, O.

10 sizes; 2 to 25 H. P. Write for free catalogue. D. N. P. BOWSHER CO., SOUTH BEND, IND.

High Power Mantles

for Gasoline Lamps and Lanterns

Made to give service. Will last longer and stand rougher usage than any other mantle known. Made in our own factory by special patented process. Buy from your dealer or order direct from nearest office. Price per doz. \$1.50. THE COLEMAN LAMP CO. Mfgs. of The Famous "Quick-Lite" Lamps and Lanterns. Wichita, St. Paul, Dallas, Toledo, Los Angeles, Chicago.

When writing to advertisers please mention the Michigan Farmer.

Give Biddy a Chance

THE average farmer considers poultry raising a sort of "side issue." A job for the women and children. And yet, with a little care and planning the poultry on the farm, especially with the prospect in view for the highest prices for eggs in history, during the coming winter, will pay as well if not better than some of the other branches of the farm.

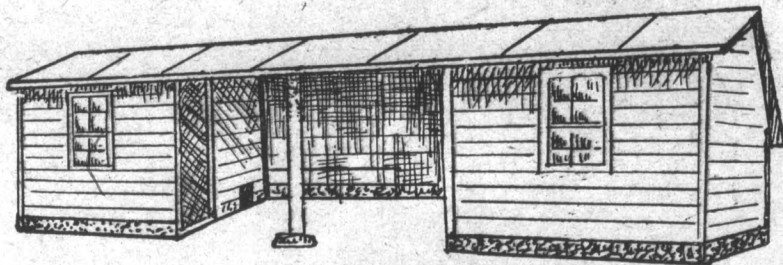
Records of eighteen flocks of poultry in Ohio, showed an average profit of \$87 per hundred hens. One hundred hens and a good dairy cow are about of equal value and Iowa records show that the average dairy cow makes a profit of only \$33. This being the case, let us pay a little more attention to the farm flock this fall and give the biddies a chance to make good during the coming months.

The Hen House.

First of all we must look to the hens' comfort, and give them a home, not merely a shelter. Remember, the "singing hen is the laying hen," and its comfortable, contented hen that sings.

Warmth, light, air, cleanliness and convenience are all to be considered in arranging a home for the flock, the house need not be expensive in order to contain these features.

The location should be a high, well drained area, with a southern or south-eastern exposure. Various types of houses may be used just so that it is clean, dry, well lighted and well ventilated, but not drafty. It should be so constructed that it can be made per-



tains roosting apartments at each end and a scratching shed in the center, open partitions admit ventilation, while windows in the south admit the light. Fit the house with comfortable nests and with roosts at least two inches wide. Whitewash assists in eliminating vermin of all sorts and makes the house much lighter. A satisfactory formula is as follows:

One peck of lime, unslaked; two pounds of common coarse salt; one gallon of crude carbolic acid or some equally strong disinfectant; dilute to forty gallons with water, or make thin

ragged and frayed, the yellow-legged varieties showing faded beaks, legs and toes and the white-ear-lobed varieties will have lobes free from creamings. Look also for good width between the pelvic bones and well developed red combs. The following score card has been used at the University of Missouri and indicates the condition in which two hens were found in October of last year. By giving each of these points due consideration one can arrive at some conclusion as to the relative production of the birds of his own flock:

Score Card.

Band No.	2715.	2760.
Molt.	Not started.	Complete.
Comb color.	Red.	Pale.
Comb size.	Large.	Small.
Shanks.	White.	Yellow.
Earlobes.	White.	Yellow.
Body depth.	Four fingers.	Two fingers.
Spread of pin bones.	Three fingers.	One finger.
Condition of pin bones.	Fine.	Medium.
Condition of breast bones.	Fine.	Medium.
Body quality.	Excellent.	Coarse.
Egg record.	222.	110.

enough to apply easily with whitewash brush or spray pump.

A litter of about six inches deep of fresh clean straw should be kept on the floor during the winter months, and a dust box filled with sand and ashes gives the hens a chance to wallow and fight the lice.

Culling the Flock.

With feedstuffs at the highest prices ever known, it is necessary for us to know whether a hen is laying, whether she is likely to start laying within a reasonable time or whether as an egg producer she has "missed her calling" and makes for her owner an unprofitable boarder. The slacker hens should be culled out and marketed early and with them the roosters, for it has been demonstrated by the laying contests that unmated hens will lay a greater number of eggs than those mated. The following rules will be of assistance in selecting the birds to be retained for the winter.

Good layers moult quickly and late, during October or November. The plumage at this time will be rough,

Feeds have to be selected somewhat to meet local and individual conditions. A good scratch feed is composed of two-thirds corn and one-third barley or clipped oats, about two quarts per day scattered over the litter, will feed fifteen hens. This, with a mash composed of two parts of corn meal, one part wheat bran, one part wheat shorts and one part of beef scraps or tankage, will complete a well-balanced ration. The mash should be kept in the hopper before the hens at all times.

Table scraps will greatly cut down the feeding cost and also decrease the amount of mash needed. Boil the peelings of vegetables, chop them fine with a meat chopper, add small pieces of stale bread and any clean scraps, then mix this with bran. Sour milk or buttermilk added will make this a most desirable and well-balanced ration, or if not available, beef scrap or tankage can be substituted to furnish the animal food.

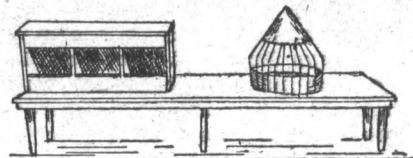
A careful test in feeding sour milk

was made recently at the Missouri Experiment Station. Three pens were used in the experiment. All were fed alike except that one pen received sour milk, another beef scrap and the third no animal food whatever. From the pen fed on sour milk 3,275 eggs were received during the year at a profit of \$28.76; from the pen fed on beef scrap 2,668 eggs were received, at a profit of \$19.78, and from the non-meat pen, 1,373 eggs, at a loss of one dollar for the year. This experiment makes it clear that our layers must have a certain amount of animal food if they are to return a fair profit for their feed, and sour milk is one of the best and cheapest foods of this nature that we can get.

Green feed is desirable, if not a necessity, and can be supplied during the winter by sprouting trays of oats in the cellar.

Oyster shell, charcoal and grit should be kept before the hens at all times. The oyster shell supplies the lime for the egg shell and the charcoal aids in digestion, while the grit assists in grinding the food.

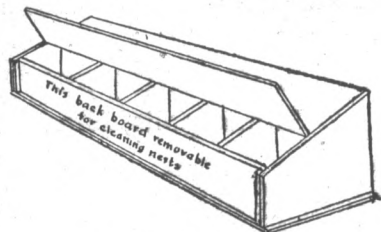
And do not neglect the water fountain. Experiments have proved that when water is kept from the hens for any length of time, there is a marked reduction in the egg yield. Always have plenty of fresh clean water before them. Remember, most of the egg is composed of water, hence the wise poultryman should, during the winter, fill the fountains frequently with warm water to encourage the hens to drink more.



Keep the Food and Water Clean.

Handle and market your eggs better. Keep the nests clean, gather the eggs daily, keep them in a cool place and market as often as possible—at least once a week—better yet, twice a week. Market the kind of eggs you would want to buy if you were a consumer.

If you have a pure-bred flock—good. If not, make the best of the flock you have, then later you may want to get better stock. There is a pleasure and satisfaction in knowing that you have the best and that this branch of your farming, even though it may be a "side issue," is yielding you its greatest profit.—L. W. S.



A Convenient Nest.

fectly tight, except part of the south side, which should always be left open to admit fresh air.

The size of the house should be determined by the number of hens to be housed through the winter, allowing two and a half to three square feet of floor surface for each hen. Overcrowding not only causes serious discomfort and discontent, but greatly reduces the profits from the winter egg production, and contributes to disease, weakness, feather-pulling, egg-eating, and similar troubles and habits.

A satisfactory farm poultry house is shown in the illustration. It con-

Hints on the Farmer's Advertising

FARMERS are awakening to the need of better marketing methods, and have begun to recognize the value of judicious advertising in marketing farm products. Much advertising is done without results in proportion to the cost in many cases, not only by farmers but by all classes of advertisers, and so complex is the advertising game that advertising experts are in demand and make their employers good money if the business is a large one that justifies the outlay. Most farms would not justify this, but they will justify a careful plan of advertising worked out by the farmer. Too often advertising is looked upon as the spreading of a little ink on paper or chalk or paint on a board that anyone

who takes the time to examine it may know what it is there for. Advertising is a whole lot more than that. Its purpose is not only to carry a message but to attract attention to that message, and to give confidence in the one that sends the message and the thing the message refers to. If it does less than all this it falls short of its duty.

First we want to attract the notice of all who want the article or would be at all interested in it, so something in the advertisement must give this information so plainly that it cannot be overlooked. Then one or more enticing qualities should be emphasized so briefly that a glance will convey them to the mind of the reader. This will insure the interest of anyone who

has any desire for the article and then the selling argument will be read, but it should be definite and positive. General rambling praise of an article will not have any selling value but positive statements of definite qualities will.

Plain conservative advertising with a dignity and reserve about it will carry conviction of the reliability of the advertiser and his goods to far better advantage than exaggerated descriptions and bare statements of the seller's honor and honesty, or even an attempt to prove these things by testimonials from people equally as unknown as the advertiser. People look upon the ordinary testimonial as worth less than the ink it took to print it—they're too easy to get and carry too

little of the giver's true opinion with them in too many cases.

The selection of an advertising medium should be made in accordance with the kind of article to be sold. Something that a local demand will be likely to be enough to take the lot should be advertised in the local paper but a good lot of seed corn, a pure-bred animal, eggs from a large pure-bred flock of hens, or other things that the local demand would not be likely to take any amount of, we should advertise in the more widely circulated farm papers or city dailies, and for farm products the farm papers have every advantage. The man who quotes prices when possible sells when others with like goods fail. —LEE HILCO.



VARIETIES TO PLANT.

I would like to know what would be the best varieties of plum, pear and apple to set out?
Oakland Co. H. W. B.

Among the more desirable European plums are the Bradshaw, Guei, Grand Duke, Lombard, Monarch, Reine Claude and Shipper's Pride. The Abundance, Burbank, Climax, Red June and Wickson are popular Japanese plums.

The summer pears usually planted are Bartlett and Clapps Favorite. The autumn varieties are Duchess d'Angouleme, Lawrence, Kieffer, Seckel and Sheldon. Both the Lawrence and the Kieffer are considered winter as well as fall varieties.

Among the good summer apples are Early Harvest, Red Astrachan and Yellow Transparent. Satisfactory autumn varieties are Chenango Strawberry, Duchess of Oldenburg, Fameuse or Snow Apple, Maiden's Blush. The large part of the planting will doubtless be winter apples as they keep the best and are valuable for home use or market for a long period. Fine winter apples are the Baldwin, Grimes' Golden, Jonathan, King, McIntosh Red, Northwestern Greening, Northern Spy, Rhode Island Greening, Wealthy, Wagener and Winter Banana.

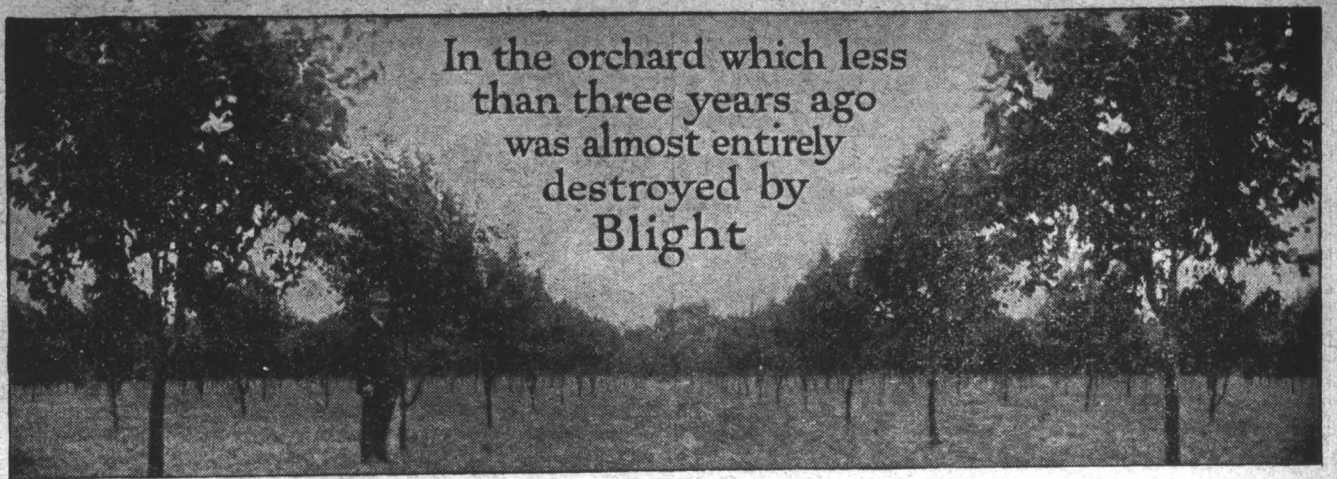
The inquiry does not state whether a commercial or a home orchard is to be planted. In the small home orchard the farmer can select one or two good varieties for the major portion of the planting and then use others which will give a variety of fruit for all seasons. In the commercial orchard enough of one or two good varieties should be planted so that buyers can be induced to consider the crop. In Michigan the buyers seem to like the Northern Spy, Baldwin and Greening, and these varieties succeed very well in this locality.—K.

CEMENT OR WOOD HOUSE.

I would like to build a poultry house next spring, and would like to know whether a semi-monitor-style house made of cement, with a two and a half inch dead air space from bottom to top will be perfectly dry. Lumber is so high that I would like to find a cheaper material if it is as good.
Oakland Co. H. W. B.

The writer would prefer the house built of lumber, even at the present price of building material. The cheapest and best house for the money, in our opinion, is a shed-roof house built on a cement foundation with a cement floor. The siding and roof can be of unmatched lumber although matched lumber would be the best. It can be covered with heavy roofing paper on all sides to keep out draughts. If black roofing paper is used it can be held on with wooden strips painted green. This gives the house an attractive appearance. If red roofing paper is used white strips are attractive.

The writer bases his opinion of a cement semi-monitor house from experience and observation on poultry farms of various kinds. Breeders of long experience seem to prefer the houses built of lumber. Under present conditions it is not possible to build a very cheap poultry house, and yet it seems as if building materials have reached a new price level and will not work downward very rapidly in the near future. If a new poultry house is needed it seems good business to build it. The poultryman who keeps accounts accurately can study his building costs and egg receipts in 1914 and compare it with lumber costs and egg prices today and things do not seem so much out of proportion as we are sometimes led to believe. The poultryman should accumulate a set of tools and try to do all of his carpenter work without hiring outside labor.



In the orchard which less than three years ago was almost entirely destroyed by Blight

15000 Yellow Transparent Apple Trees without a single blighted twig among them

THE ORCHARD, a part of which is shown in the above picture, consisting of 15,000 seven and eight-year-old Yellow Transparent Apple Trees in Nassau County, Delaware, was so badly cut to pieces in 1916 in an unsuccessful effort to control Blight that pulling out of the entire orchard was seriously considered.

At our suggestion "cutting out" of the Blight was discontinued and spraying with "SCALECIDE" was substituted as the remedy. Now, after three dormant sprayings, the trees are healthy and laden with fruit—without a single blighted twig among them.

"Cutting out" to control Blight and Canker is not necessary. "SCALECIDE" meets every requirement. It is a perfectly soluble oil (if not don't use it) and penetrates the

diseased bark. Having both fungicidal and germicidal properties, it destroys the disease without the slightest injury to the delicate plant tissues.

Whether you have Blight or not, use "SCALECIDE" for your dormant spray. It "makes a tree outgrow its troubles." One experiment station reported that pear trees sprayed for three years with "SCALECIDE" as a dormant spray produced 58% more fruit than the same variety alongside them sprayed with Lime-Sulphur, and showed extraordinary tree growth as a result of "SCALECIDE."

"SCALECIDE" is easy and pleasant to use—and costs less to apply. Write today for complete information and name of nearest dealer. Ask for copy of our guarantee. Address Dept. 13.

B. G. PRATT CO. 50 Church Street NEW YORK CITY
Manufacturing Chemists

SCALECIDE

THE COMPLETE DORMANT SPRAY

"Makes a Tree Outgrow Its Troubles"

WITTE ONE MAN DRAG-SAW

A real one-man outfit with all the latest WITTE improvements. Arm Swing movement. Saw cuts both ways and clears kerf both ways. Adjustable to long or short stroke, 180 strokes per minute.

Easy To Use
Simple, Safe, Low Cost

Best By Test

The WITTE is a modern high-grade outfit—no chains or belts. Runs steady, saws fast. No stopping engine to change cut or move rig. Engine is 4-cycle, water-cooled. Easy to handle. Saw stays idle until you push the clutch lever. Clutch works

automatically if log sags or pinches saw. Hook-up on saw when moving rig holds saw in safety position, and out of the way of brush or limbs. Most practical and easily handled. Get full description and WITTE prices before you decide on any sawing outfit. Sent FREE.

WITTE ENGINE WORKS 219R Oakland Ave., Kansas City, Mo.
219R Empire Bldg., Pittsburgh, Pa.

Locks 50 Cows Instead Of One

West Bend BARN EQUIPMENT

West Bend Automatic Stanchions—equipped with our wonderful locking-releasing lever save you time and labor—and insure safety in locking up or releasing the cows. yet you pay no more for West Bend equipment than for ordinary stanchions that must be opened and closed singly by hand. The West Bend lever controls from 2 to 50 West Bend Automatic Swinging Stanchions. The entire row of cows can be locked up or released instantly by one throw of the lever. Cow stops are operated at same time, and when set guide cow into the stanchion. Every user says it's the greatest idea ever brought out in modern barn equipment. You certainly want it in your barn. Write today for catalog showing complete line of West Bend Barn Equipment.

WEST BEND BARN EQUIPMENT CO., 280 So. Water St., West Bend, Wis.

FENCE

Direct to Farmer at Wire Mill Prices

CATALOG FREE
KITSELMAN BROS. DEPT. 278 MUNCIE, INDIANA

SAVES MONEY AND BACKACHE

RUNS EASY
NO BACKACHE
WEIGHS ONLY 45 LBS.
EASILY CARRIED
SAWS DOWN TREES

FOLDS LIKE A POCKET KNIFE. ONE MAN with the **FOLDING SAWING MACHINE** saws down trees—saws any kind of timber on any kind of ground. One man can saw more timber with it than two men in any other way, and do it easier. Send for free illustrated catalog No. D44, showing Low Price and latest improvements. In use 30 years. First order gets agency. Folding Sawing Machine Co., 161 West Harrison St., Chicago, Ill.

SEEDS WANTED

Michigan Grown
Winter Vetch, Rye and Vetch, June and Mammoth Clover, Alfalfa, Sweet Clover, Alsike and Field Peas. Known varieties of Garden Peas, Beans and other Garden Seeds, if High Germination and 1919 crop.

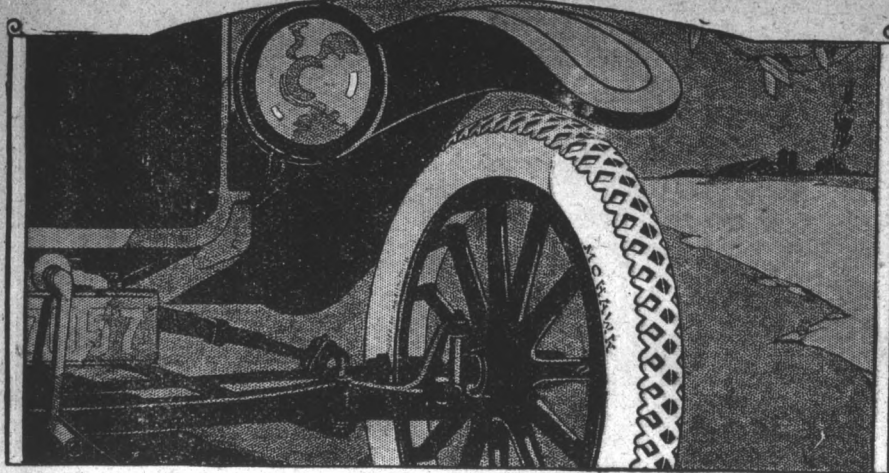
Send samples for test.
The C. E. DePuy Co. Pontiac, Mich.

FARM WAGONS

High or low wheels—steel or wood—wide or narrow tires. "Wagon parts of all kinds." Wheels to fit any running gear. Catalog illustrated in colors free.

Electric Wheel Co., 35 Elm St., Quincy, Ill.

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Sometimes a tire will give a fair mileage if it is used up quickly, but deteriorates rapidly when the car is standing idle.

This may have been your experience. And you are not the only one to feel the loss—rubber deterioration is costing car owners millions annually.

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One thing to remember about Mohawk Tires is—they do not deteriorate.

Pure rubber, and a generous quantity of it, only is used to make them.

No "fillers," no shoddy, no rosin, no glue, no whitening—nothing that can deteriorate ever gets into them.

For that reason, you will find Mohawk Tires strong, tough and wear resisting season after season until they are entirely worn out.

Add to this advantage an extra ply of fabric in most sizes—hand-building by expert, veteran tire builders—and you will understand why Mohawks do give better mileage and why they do not rot when standing idle or lose their life when baked by the sun.

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Branch: 1507 S. Michigan Ave., Chicago

MOHAWK "Quality" TIRES

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Leghorns—We still have to offer 100 S. C. White Leghorn and 50 S. C. Brown Leghorn yearling pullets. These birds are tested according to method of State Agricultural College and are of 150 to 200 egg capability. None less than 150 eggs a year. Write for description and price list.

Cockerels—The most of the standard breeds. We guarantee every bird shipped to be satisfactory to you.

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For sale "Buy the Best" eggs for hatching from 200 egg strain Barred Plymouth Rock. \$2.00 per 15, \$3.00 for 45 eggs. H. B. PROCTOR, Grand Haven, Mich.

Silver, Golden and White Wyandottes. Choice quality cockerels and pullets \$3.00 to \$5.00 each until Dec. 15. C. W. Browning, R. 2, Portland, Mich.

S. C. W. Leghorn cockerels. Price \$1.50 to \$3.50. egg record, sire's dam 230, dam's dam 230 to 254 eggs. Loren B. Frank, Rochester, Mich.

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We have some of the young for sale, from our wonderful 55 pound tom "BLOOMFIELD KING." Why not buy one of our fine extra toms and improve your flock.

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R. I. Red Cockerels Both combs, 175 to 8 pounds each. Good utility, better than the average, \$3.50 each or 3 for \$10. Extra good breeders \$5 each. Satisfaction or your money back. Circular free. INTERLAKES FARM, Box 39, Lawrence, Mich.

Giant Bronze Turkeys Young thoroughbreds, grand color, type and bone. Early maturing birds now at fall prices. Order soon. N. Evelyn Ramsdell, Ionia, Mich.

Narragansett Turkeys: Pure-bred healthy birds of large bone and beautiful color. Order now. FERN W. KLE, R. 6, Adrian, Mich.

FALL SPRAYING FOR PEACH LEAF CURL.

FOR more than twenty-five years it has been known that the leaf-curl of peach trees could be controlled by spraying while the trees were dormant and it was practiced by thousands of peach growers in Michigan, but there have been many failures due to spraying too late in the spring. This was especially true in the spring of 1919, owing to the early swelling of the buds, but in other seasons the work has been hindered by stormy weather, a soft condition of the soil, delays in fitting out the spray rigs, press of other work, etc.

Leaf-curl is due to a parasitic fungus, which attacks the leaves while still in bud, and is especially troublesome in cold wet springs. To be effectual the spraying should be done at least three weeks before the buds open. While, as a rule, applications may be made up to the middle of April, in some years the spraying must be done before the end of March.

The writer demonstrated more than twenty years ago that good results could be obtained from applications made in the fall, the only difficulty being in reaching the buds, owing to the leaves being on the trees. When most of the leaves have fallen the spraying can be done in the fall with good results. Whether made in the spring or fall, the success will depend largely upon the thoroughness of the application. To obtain results the buds must be thoroughly soaked with the spraying material, and if any of the buds are not soaked the leaves from these buds will curl, if weather conditions favor the disease.

The usual spray for the San Jose scale (lime-sulphur solution, one to eight) will give good results in controlling leaf-curl, but if not necessary to spray for the scale, it will answer to control leaf-curl if used one to fifteen. Fully as good results in controlling leaf-curl may be obtained from the use of copper-sulphate solution at the rate of one pound to fifty gallons of water. At this strength lime should not be added. The clear solution at this strength will fully equal 4-4-50 Bordeaux. In making applications in the fall, or very early in the spring, care should be taken not to spray on days when the water is likely to freeze on the branches before it has had time to evaporate.

Owing to the fact that even with the best intentions orchardists fail to spray in the spring early enough to secure results, we urge the fall spraying of peach orchards as soon as the leaves drop.

L. R. TAFT,

State Inspector of Orchards.

JONATHAN L. SNYDER.

(Continued from page 533).

efficient income to keep pace with the growth of the college.

It was ex-President Snyder who first solved the problem of getting the theoretical information gained in the college out to the farmers of the state to be put into practice. He realized that a lot of the discoveries about scientific agriculture were never getting a hearing with even the most progressive farmers of Michigan. To beat this difficulty, M. A. C.'s ex-head commenced a far-reaching campaign of publicity which is spreading the data gathered by agricultural scientists to this day. He did this by means of the press, by means of bulletins, and by importing the best agriculturalists from all over the state to M. A. C. to learn its lessons and go back to their communities with something to tell their neighbors.

It was at Dr. Snyder's suggestion that a department of agricultural pedagogy was started at M. A. C. This has grown to such an extent that at present there are sixty high schools in Michigan which have a course in agriculture

listed in their curriculum.

Probably one of the most important bits of progress during Dr. Snyder's regime was the commencement and development of the Department of Home Economics. Believing that the women of the state needed training in their field as well as did the men, ex-President Snyder provided for dormitory accommodations and started the course which now is the second largest in the institution. The attendance of young ladies at M. A. C. has grown even out of proportion to the other courses so that only one week ago the State Board of Agriculture saw the necessity for granting additional funds for the running of the department for girls.

Altogether the efforts of Dr. Snyder were rewarded by the growth of M. A. C. from a school with four hundred enrolled in 1896, and fifty-seven graduates, to an institution with two thousand enrolled in 1915 and a graduating class of two hundred and thirty-two.

The appreciation of the man has been evinced by the hundreds of notes of condolence received by his relatives from sympathizers all over Michigan, and in future days his headstone in Mount Hope cemetery near Lansing can be designated as the material remembrance of one of Michigan's greatest agricultural educators.

CULL YOUR FLOCKS NOW.

(Continued from first page).

the year. She drops all of her feathers at a time. If a hen laid well last winter, no matter what her appearance is now, keep her. She will improve the flock. Market the hens that are in full feather—that have those brilliant yellow shanks and beaks. Market those hens that have been lazy during the summer. Market the hen that stole her nest and hatched a brood of chicks in August. Market her brood with her. She is trying to fool you. She, like some people, gets busy at the eleventh hour. She has fooled away the spring and summer, preening her feathers and admiring her own fitness and comeliness.

Third, what about those cockerels? Market the ones that were slow to de-



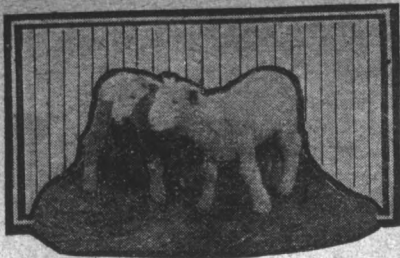
Cull Pullets of this Type.

velop. Market the ones that are poorly feathered. Open the wing and if the primary feathers are long, narrow and pointed (the chick feathers) market all such cockerels.

Fourth, we come to the "tug of war." The busy housewife wishes to keep about so many pullets for the year. She dislikes to kill or market a pullet. This temptation is great with her. Often she reasons this way: "I want about so many pullets next spring. They are young; they will grow, and it will not cost much to keep them, for I will let them pick their living."

Remember, dear reader, this is all wrong. A pullet should be fed heavily in order properly to develop a constitution that will combat the drain upon her heavy egg production. It costs too much to keep over a poor lot of undeveloped or constitutionally weak pullets.

Pullets that are to be good layers should show signs now of maturity and should be about ready to commence laying, or should be laying early in November.



SHEEP PELTS, ON AND OFF.

SO far as I am concerned I will take mine on. Nothing makes me feel worse than to go out and find one of my sheep dead in the yard or pasture. I consider it in part, at least, a reflection on me, for if I had done my duty by the sheep she would still be up and coming.

There are however, many who do not seem to take such losses very seriously. We are told every winter of great losses on the ranches and other western pastures, by reason of exposure to cold and the animals that kill sheep in cold weather when other forms of food are scarce and hard to get. I do not know that there is any way to get at the approximate losses from these two sources in any one winter. I suppose it depends more or less on the severity of the season, but the very lowest estimates prove that the farmers of this country lose literally hundreds of thousands of dollars through the death of sheep in the cold and storms of any given winter. What do not die are often seriously set back by exposure.

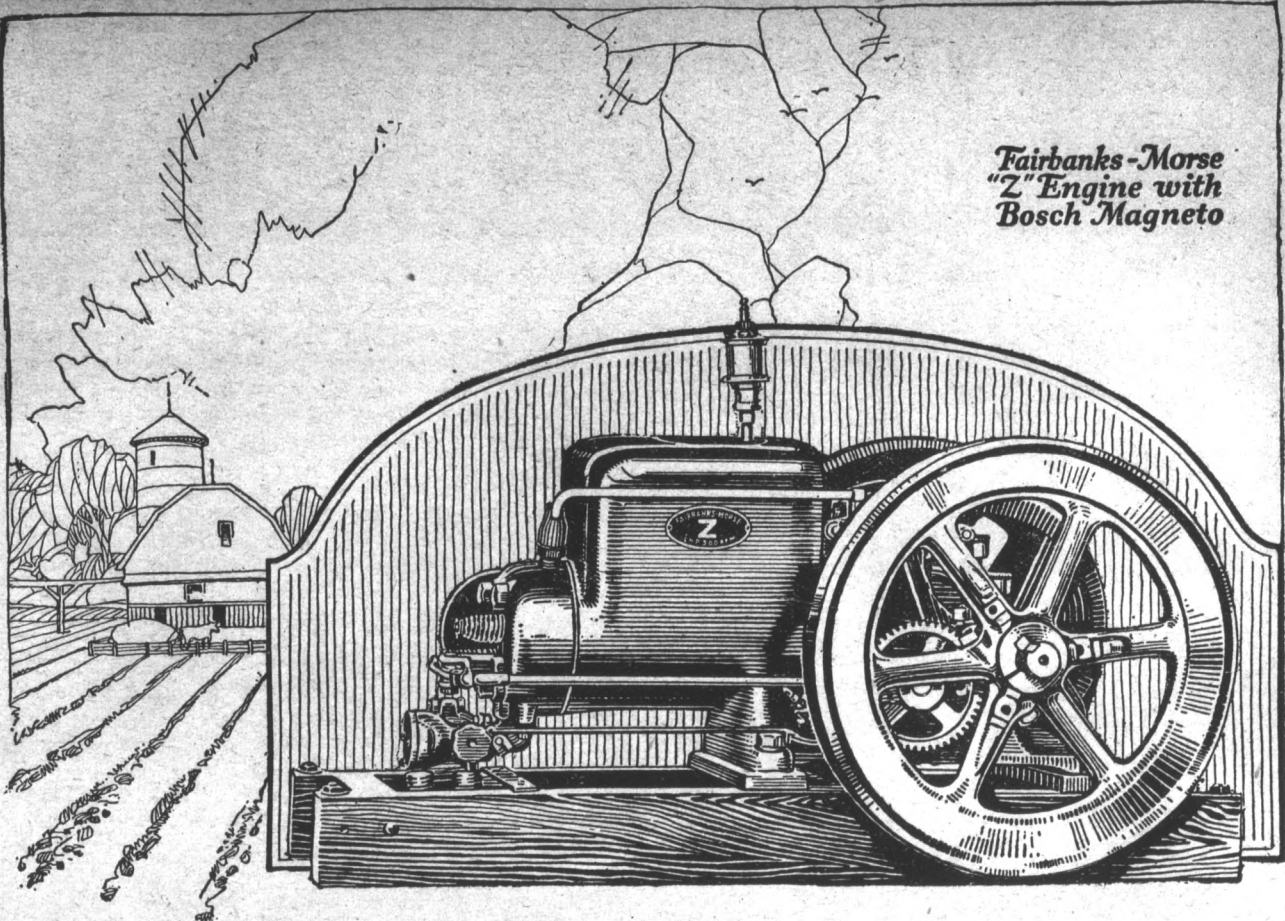
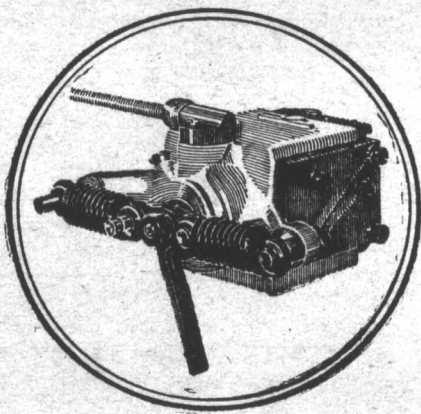
It is good business to take care of sheep so that these losses may be in great part at least, wiped out. We cannot afford to stand such losses every year. Some sheep men do this by putting up cheap sheds covered with wild grass in the place of shingles, and into these they gather their sheep for shelter in inclement weather and for supplemental feeding. From two to three thousand sheep can be sheltered and fed in a shed a hundred and fifty feet square, although some cramp that number down to one hundred feet square. It does not seem as if they would do as well, however, as if they had more room.

For the man who keeps a small flock a shed may already be attached to the barn for providing shelter. If none already exists, one may be built at comparatively small expense that will be perfectly adequate. I have sheltered twenty-five sheep in a shed sixteen feet by thirty feet in size. This gives room, too, for the feeding racks.

But bad as cold is, wet ground is fully as dangerous to the health of the sheep. Sheep are not an animal for damp ground. It is death to them. For this reason the sheep barn or shed ought to be built on dry ground. Some sites may be drained by ditches so that the land will be dry. Wherever it seems advisable to pasture or yard sheep on ground that is naturally wet, drains may be put in yet this fall. All sorts of diseases may follow wet feet.

Then, too, scab does a great deal of damage to our flocks when it once gets a hold in them. We cannot be too careful when buying sheep or otherwise acquiring them, to see to it that they are free from this terrible disease. No scabby sheep ever should be brought on the farm, for it is apt to spread and infect the entire flock. It spoils the sheep that is affected by it and the wool becomes "tagged" or glued together. Even to come in contact with one of these tags from infected sheep is apt to convey the disease to well sheep. The disease may also be transmitted by healthy sheep touching posts or trees against which scabby sheep have rubbed. As a source of real suffering scab is a fearful thing.

E. L. VINCENT.

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Bosch Magneto

SINCE the "Z" was put on the market, over 250,000 farmer buyers have pronounced it the greatest farm engine value. ¶ We felt the same way about it. ¶ But following our policy to improve our product whenever possible, we are highly pleased to announce a new Fairbanks-Morse "Z" with Bosch Magneto—high tension ignition which adds the one possible betterment. ¶ Call on the "Z" dealer near you—see this world's greatest engine—understand the full meaning for you of the engine service which over 200 Bosch Service Stations give, in co-operation with every "Z" dealer, to every "Z" engine buyer. ¶ Prices—1½ H. P. \$75.00—3 H. P. \$125.00—6 H. P. \$200.00—All F.O.B. Factory.

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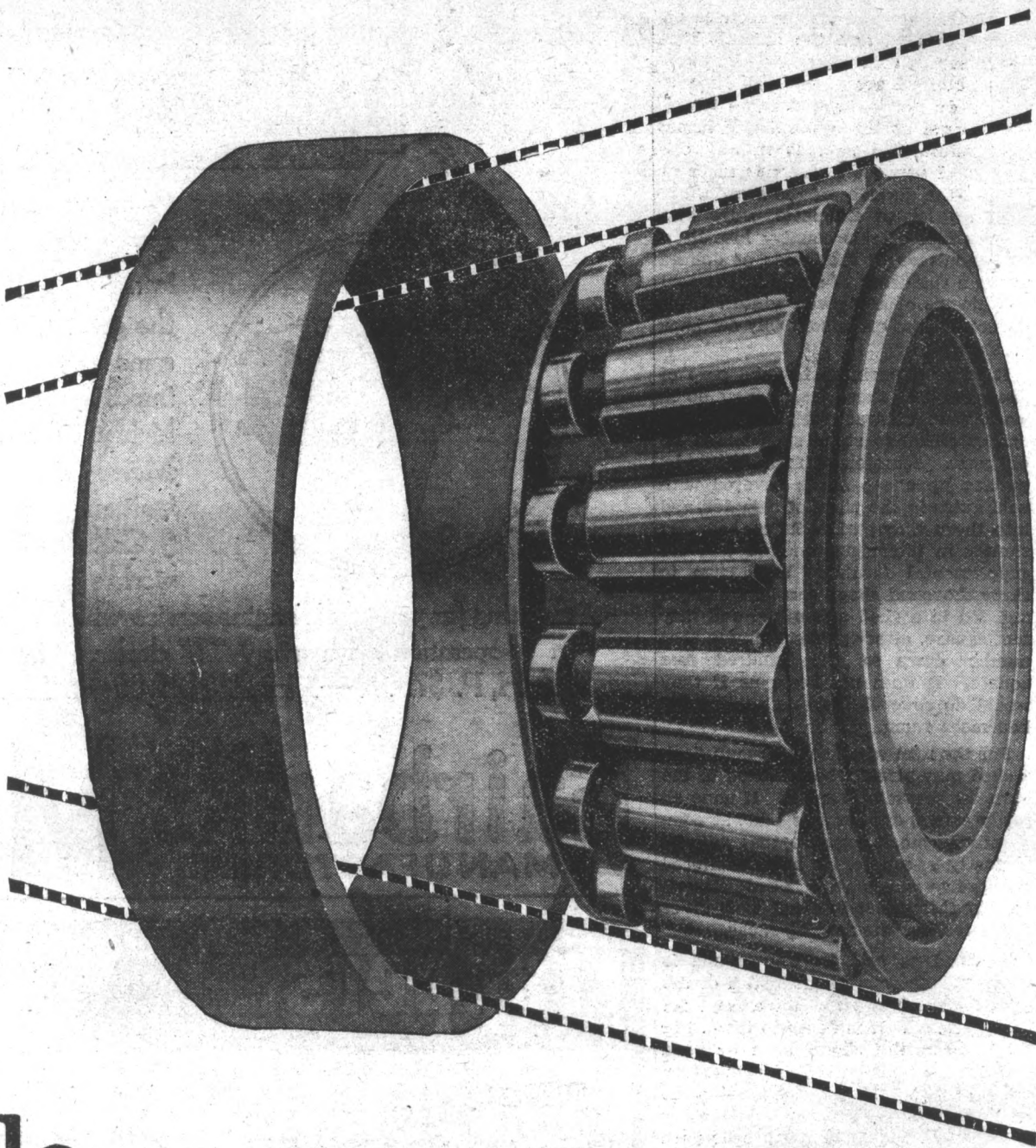
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WORLD EVENTS IN PICTURES



Miss Hannah Patterson, new Assistant to Secretary of War Baker.



Directors of National Republican work among women. Photographed at National Republican Headquarters, New York City.



Mrs. Raymond Robins, president of National Women's Trade League.



Ambassador Henry Fletcher, who may succeed Page as Italian Ambassador.



Parson-Aviator, Lt. Belvin W. Maynard, who won the trans-continental derby, flying from New York to San Francisco and back in 69 hours.



Mme. de Munn, Parisian Beauty, regains American citizenship.



Miss Margaret Laing "Riding" the Mascot of Warship "Columbia."



Queen Elizabeth, King Albert and Prince Leopold, of Belgium, viewing the beautiful California scenery from flat car, attached to private car.



Lieut.-Com. Clark Withers, of Submarine H-2 that used radio while submerged.



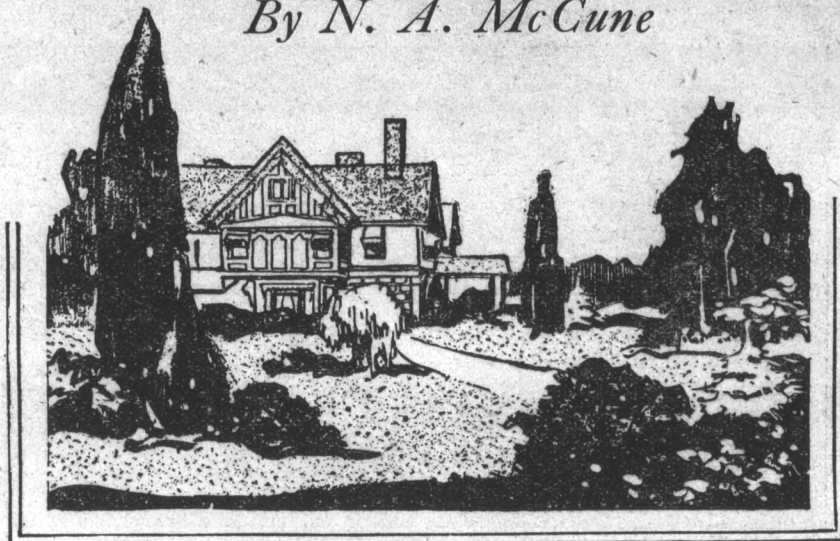
U. S. Troops in front of quarters in Gary, Ind., where they are stationed to prevent disorders during the steel strike.



View of the deck of the S. S. Canopic, crowded with Italian immigrants eager to live in the United States.

In the Aster Man's Garden

By N. A. McCune



THE Aster Man lifted a case of asters into the auto truck. "A light shipment today," he said. "Where do you ship your asters?" I asked. "Chicago. All my flowers go to Chicago. It's a thunderin' long ways from way up here in northern Michigan, ain't it? But my asters always stands the trip fine. Some has all kinds of trouble with their asters wiltin' and shrivelin' up, but I never do. You see, I manure the ground heavy, and cultivate 'em like corn, and they grow up with strong, thick stems. They stand the grief where weak blossoms would wilt right down.

"The flower business is a funny thing. I look at it as a kind of religion. I don't get to church very often, but I try to make a religion out of my aster business. Harry says I'm batty, and prob'ly I am, but I get a good deal out of it just the same. I figger it this way: Here's a big white or purple blossom. It goes to the commission house, then to the retailer, and then to the customer. 'Sposin' it goes to some hosspittle, and a sick person gets it. He don't want no droopin' sorry lookin' blossom to look at. He wants one that'll stand up on its pin straight as a doughboy, and tell him there's better days a comin'. A flower can do more good than a sermon, sometimes, and a good deal more good than some sermons I've heard."

In a Chicago hospital a doctor and two nurses were dressing a little girl. "Run over by a truck loaded with bananas," said the doctor. "Spine's fractured in two places. Nothing ahead for the little miss but the pearly gates, I guess." And then he added, "she will

be happier there than here, by the looks of her clothes. Make her as comfortable as you can," he said to the head nurse.

Little Minnie was carried out into the ward, and put into one of the white cots, just a speck of humanity in the rows of rows of white beds. Something hurt awfully—oh, it was in her back, oh, she couldn't stand it. The doctor had left a knife sticking in her back, so he had. The nurse took hold of the thin arm that waved and jerked with the pain, and pricked it. And that hurt too. Minnie fell asleep.

When she awoke, an angel was bending over her. And such an angel! She wore such a beautiful dress and such a pearl necklace! And she had such a soft, sweet voice. "Poor little dear," she was saying, "You look tired. But

you will be all right pretty soon, won't you? And you are going to stay here and do everthing the nurse says, aren't you? Here is a flower I brought for you, and your's to keep." She put a big white blossom in Minnie's hand. Minnie heard her go to the next cot and say something to the little girl there, and then to the next till she disappeared down the long line of white beds.

Minnie looked at her flower. She had never seen one like that before, except in store windows. Once the mission down near Market street had taken the children out to the park for an afternoon, and they had picked dandelions. But that was a long time ago. And once, a crate of flowers had broken open in front of a commission house, and a man came out and swore,

and swept the broken ones into the gutter. Minnie had picked one of the flowers up, and taken it home to her mother. But this flower was hers, and the angel said she could keep it.

Minnie wondered if angels were always dressed like this one was, and if they always carried such big bunches of flowers. She didn't know that angels came into hospitals. She thought they stayed up in heaven, where the Sunday school teacher said, and played harps and things like that.

When the night nurses came on duty one said, "Well, I see our good friend Mrs. Van Sully has been here today with asters for everybody. What do you suppose those asters cost her, every week? Isn't she a wonderful woman? She always speaks to each patient and she never seems to say the same thing twice." "If all the millionaires and millionairesses were like her," said another nurse, "I shouldn't begrudge them the money."

That night a little girl in charity ward II had rather a hard time of it. She cried out that somebody was running over her, and kept saying, "there it comes, there it comes." The nurse kept cold cloths on her head.

"I guess there won't be more than a couple of shipments more," said the Aster Man, as he finished fixing a crate of his flowers. "Had one light frost a'ready. That fixes 'em. But it's been a good year, and I've never seen the blossoms better. There's a good bunch, right there. Say, wouldn't it be interestin' to follow them flowers and see where they go to? Hurry up, Harry, with your buzz wagon. Less'n an hour to ketch the one o'clock train."

Vacation Down on the Farm

By Lemuel L. DeBra

DEAR Editor:—Do you recollect when you were a little tike down on the farm you used to cross the hog-lot once in awhile on your way to the apple orchard, and there was an old hog in the bunch whose back was as broad as your mother's—er—kitchen table, and whose bristles were as black and stiff as Uncle George's on Saturday night; and, just for fun, you would pick up a nice, healthy cob and rub the old rascal's back (I mean the hog's; not your Uncle George's) and he'd grunt "Oingh! Oingh!" and pretty soon he'd die down and stretch out as luxuriously as them harem girls you see in the movies, and go to sleep in the sunshine—and you'd walk away wishing you were a hog or something, eh?

"Well, that's the way I feel this morning. 'Cause why? 'Cause the wife and kid are away on a vacation and I'm lord and master of all I survey. Only I ain't surveyed much yet.

When I got up that first morning at six a. m. there wasn't a sign of breakfast. At nine o'clock it was the same. Some time between six and nine I ate breakfast. I don't know just when. It was what you might call a serial affair. Also it came near being a serious one. Opened up rather tame in the first chapter but wound up like a dime novel.

I said to myself: "If I can find some ham, I'll have some ham and eggs—if I can find some eggs."

The wife never gives me both at the same time.

I found the skillet, put it on the fire, threw in the ham, and opened all the

windows. Then I went out to hunt the eggs.

I guess our hens are union hens and don't work before eight o'clock. Finally I found an old brown biddy, gently pried her off the nest and extracted—one door-knob, two pieces of coal, and one perfectly good China egg.

And when I got back to the kitchen I didn't have any ham left, either.

That was a week ago. Since then I've learned a lot about the gentle art of culation. For instance, my wife has often wondered how they fix them "dropped eggs" we read about. Shucks, that's easy. I've dropped three already—behind the stove.

And she used to worry about getting the ants out of the sugar. Now a woman ain't got no inventiveness at all. If it was the woman who had to invent excuses for being out late, what a fix she'd be in, eh? Now the ants got in my sack of sugar and here's the way I fixed them. I dumped the sugar in a bucket of water. The ant's floated to the top and I skimmed them off.

Of course, I had to buy more sugar, but what's a little thing like that? I got the ants, didn't I?

My wife can never find the dustpan. Neither could I. Did I worry. No. I paused and meditated. Then I swept the whole clutter under the bed where it can't be seen. In a week or so I'll take it all up at once. A woman never would have thought of that.

Well, after breakfast this morning I fussed around the yard a bit, fed the

ducks because they made so blamed much noise I had to do something about it, drove the bees away from my wife's flowers, and then with my pipe I sat down in the shade to meditate. And the trend of my meditation was this:

Why does a man marry, and what does he want with a wife, anyway? There's not a thing in any line of endeavor that a man can't do better than a woman. The best cooks are men. Give me plenty of time—and plenty of ham—and I can rustle up a breakfast as well as any woman. The best writers are men—fiction comes natural to them. Who invented war? Why men, of course. Who invented all these wonderful labor-saving devices for the home, like carpet-sweepers and barrel churns? Men! And who uses them? Well, I don't know how it is in your home, but in mine, my wife makes me use them. Why? Because men excel in every line of endeavor! good or bad—especially bad. The greatest criminals in history were men. Why certainly. Didn't the teacher tell my boy—

My boy! Say, you haven't seen my boy, have you? Man, he's the finest blue-eyed scamp that ever stole watermelons. He'll be eight this corn-huskin'. Don't seem no time since he was a baby; and he was a good baby—the best baby that ever kept a clothesline full. He's with his mother now, and yesterday I got a letter he wrote. He printed it big—so his old

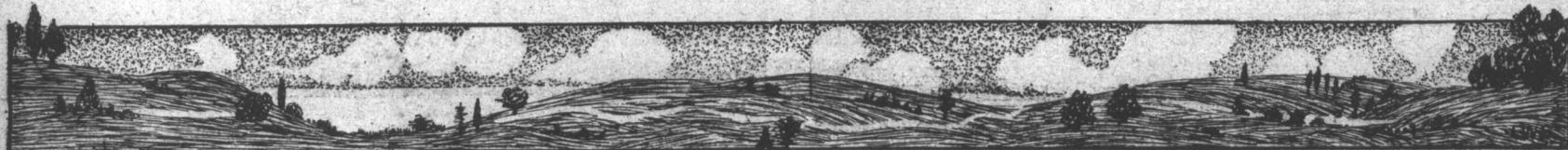
daddy could read it, I suppose. And he wrote: "I love you daddy and we are so lonesome without you," and, doggone it, my glasses got foggy, and a lump came in my throat as big as a turnip. The little rascal! Why, he can break more window panes in one shot than any boy that ever put his feet under his mother's table.

And his mother! God bless her—there's a woman! After ten years o' putting up with a good-for-nothing scoundrel like me, she's the same, only better. Yep, bigger and better—especially bigger. I love her more now than ever—there's about sixty-seven pounds more to love—but I don't let her sit on my lap any more 'cause our furniture is a bit old and rickety. Her dear eyes are just as pretty as ever only sometimes I see a tired look in them, and her smile is just as sweet and sunny. And one evening when we were sitting on the porch looking down over the meadow and I was holding her hands she said: "John, dear, my hands are not as soft as when we were married; but, thank God, you are!"

No, indeed, after ten years we haven't changed except that I used to hold her in my arms and now she holds me—she's grown beyond my reach. And she's got a hold on me that a whole flock of mules couldn't break—she with her sweet lips and loving ways, and that boy o' mine with his mother's eyes and his daddy's deviltry.

I wish to heck they'd come home—'cause I'm lonesome as a lost lamb. Hoping you are the same.

Yours truly, JOHN.



News of the Week

Wednesday, October 22.

THE latest returns from Ontario elections show that "drys" win on all four prohibition questions.—The National Industrial Conference at Washington rejects all collective bargaining resolutions and labor's proposals for intervention in the steel strike.—Federal grand jury investigation into the Ford-Newberry senatorial contest opens in Grand Rapids.—The attack of the anti-Reds on Petrograd has encountered increased resistance.—Failure of operators and miners to settle their differences in conference may force the government to forbid the strike called for November 1.—President Emeritus Jonathan L. Snyder, of the Michigan Agricultural College dies at his home in East Lansing.

Thursday, October 23.

THE United States Senate Foreign Relations committee adopts ten revised reservations to the peace treaty, including a provision that reservations must be accepted by three other great powers before the treaty ratification becomes effective.—Windsor, Ontario, entertains the Prince of Wales.—Secretary of Labor Wilson proposes to miners a wage increase but ignores demands for thirty-hour week.—The United Farmers of Ontario decide to accept the responsibility for forming a government.—The labor group quits the National Industrial Conference after capital delegates defeat collective bargaining proposals.—Russian Reds warn Germany that aid to the blockade by the allies will be considered an act of war against the Slavs.

Friday, October 24.

SECRETARY WILSON'S appeal to miners causes a reconsideration of proposals for settlement of difficulties with operators.—The expressmen's strike in New York City is ended.—It is reported that an official representative of the United States offers to submit peace proposals of the Russian Reds to the allies.—The British House of Commons unexpectedly defeats the government on the alien bill by a majority of seventy-two votes.—Mexican government takes prompt measures to release American consular agent at Puebla.—Both the delegates appointed by capital and labor have left the Industrial Conference at Washington, and only those representing the public remain.

Saturday, October 25.

WHILE mining operators agree to accept the proposal of President Wilson, the miners charge bad faith against the owners and reject the appeal. As a result 112 unions may affiliate to fight capital.—Four persons are dead in Detroit as the result of eating olives in which botulinus poisoning had developed.—The United States House of Representatives denies a seat to Victor Berger, Milwaukee socialist under conviction of violation of the espionage law.—Packages may now be sent by parcel post to Austria.—Ocean freight rates on dressed meats are reduced \$1 per hundred pounds.—Forty-nine witnesses are examined in the grand jury investigation being held in Grand Rapids.

Sunday, October 26.

PRESIDENT WILSON issues a formal statement with the approval of the full membership of his cabinet, declaring the projected strike of coal miners to be unjustifiable and unlawful under present circumstances, and calls upon officers of local unions to recall orders for the strike.—The American Federation of Labor threatens to tie up all industry should congress pass anti-strike legislation.—Clocks throughout the United States are turned back one hour to normal time.—Berlin protests to the allies that a blockade of Soviet Russia will promote Bolshevism.—Agreement between the British cabinet and members of the House of Commons may surmount the difficulty brought about by the recent vote on the alien bill when the government was defeated.

Monday, October 27.

LABOR leaders declare that President Wilson lacks power to force miners to remain at work. It is announced that United States troops will guard non-union miners if a strike is called.—The Austrian republic signs the treaty of peace with the allied and associate governments.—Despite the arrival of Bolshevik reinforcements, the anti-Red troops have resumed their march toward Petrograd.—Senator Poindexter from Washington announces his candidacy for the republican nomination for President.—Riots are quelled at Knoxville, Tenn., by state militia.—One person is killed and 15 injured in a Detroit street car accident.

(Continued on page 575).



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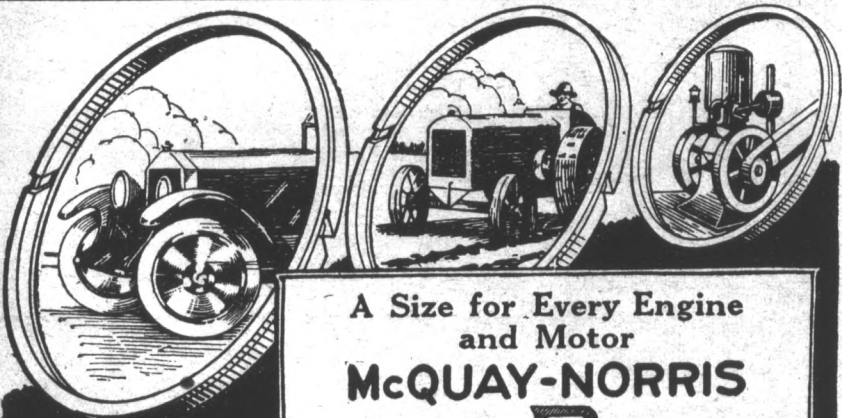
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Crooked Trails and Straight

By Wm. MacLeod Raine

Maloney pushed into the circle. "She's dead right, boys. There's nothing to this lynching game. He's only a kid."

"He's not such a kid but what he can do murder," Dutch spat out.

Kate read him the riot act so sharply that the little puncher had not another word to say. The tide of opinion was shifting. Those who had been worked up to the lynching by the arguments of Bonfils began to resent his activity. Flandrau was their prisoner, wasn't he? No use going off half cocked. Some of them were discovering that they were not half so anxious to hang him as they had supposed.

The girl turned to her friends and neighbors. "I oughtn't to have talked to you that way, but you know how worried I am about Dad," she apologized with a catch in her breath. "I'm sure you didn't think or you would never have done anything to trouble me more just now. You know I didn't half mean it." She looked from one to another, her eyes shiny with tears. "I know that no braver or kinder men live than you. Why, you're my folks. I've been brought up among you. And so you've got to forgive me."

Some said "Sure," others told her to forget it, and one grass widower drew a laugh by saying that her little spiel reminded him of happier days.

For the first time a smile lit her face. The boy for whose life she was pleading thought it was like sunshine after a storm.

"I'm so glad you've changed your minds. I knew you would when you thought it over," she told them chatily and confidentially.

She was taking their assent for granted. Now she waited and gave them a chance to chorus their agreement. None of them spoke except Maloney. Most of them were with her in sympathy but none wanted to be first in giving way. Each wanted to save his face, so that the others could not later blame him for quitting first.

She looked around from one to another, still cheerful and sure of her ground apparently. Two steps brought her directly in front of one. She caught him by the lapels of his coat and looked straight into his eyes. "You have changed your mind, haven't you, Jake?"

The big Missourian twisted his hat in embarrassment. "I reckon I have, Miss Kate. Whatever the other boys say," he got out at last.

"Haven't you a mind of your own, Jake?"

"Sure. Whatever's right suits me." "Well, you know what is right, don't you?"

"I expect."

"Then you won't hurt this man, our prisoner?"

"I haven't a thing against him if you haven't."

"Then you won't hurt him? You won't stand by and let the other boys do it?"

"Now, Miss Kate—"

She burst into sudden tears. "I thought you were my friend, but now I'm in trouble you—you think only of making it worse. I'm worried to death about Dad—and you—you make me stay here—away from him—and torment me."

Jake gave in immediately and the rest followed like a flock of sheep. Two or three of the promises came hard, but she did not stop till each one individually had pledged himself. And all the time she was cajoling him, explaining how good it was of them to think of avenging her father, how in one way she did not blame them at all, though of course they had seen it would not do as soon as they gave the

matter a second thought. Dad would be so pleased at them when he heard about it, and she wanted them to know how much she liked and admired them.

It was quite a love feast.

The young man she had saved could not keep his eyes from her. He would have liked to kneel down and kiss the edge of her dress and put his curly head in the dust before her. The ice in his heart had melted in the warmth of a great emotion. She was standing close to him talking to Buck when he spoke in a low voice.

"I reckon I can't tell you—how much I'm obliged to you, Miss."

She drew back quickly as if he had been a snake about to strike, her hand instinctively gathering her skirts so that they would not brush against him.

"I don't want your thanks," she told him, and her voice was like the drench of an icy wave.

But when she saw the hurt in his eyes she hesitated. Perhaps she guessed that he was human after all, for ar



Riding Slowly Down the Trail.

impulse carried her forward to take the rope from his neck. While his heart beat twice her soft fingers touched his throat and grazed his cheek. Then she turned and was gone from the room.

It was a long time before the bunk house quieted. Curly, faint with weariness, lay down and tried to sleep. His arm was paining a good deal and he felt feverish. The men of the Circle C and their guests sat down and argued the whole thing over. But after a time the doctor came in and had the patient carried to the house. He was put in a good clean bed and his arm dressed again.

The doctor brought him good news. "Cullison is doing fine. He has dropped into a deep sleep. He'd ought to make it all right."

Curly thought about the girl who had fought for his life.

"You'll not let him die, Doc," he begged.

"He's too tough for that, Luck Cullison is."

Presently Doctor Brown gave him a sleeping powder and left him. Soon after that Curly fell asleep and dreamed about a slim dark girl with fine longlashed eyes that could be both tender and ferocious.

CHAPTER IV. The Cullisons.

CURLY was awakened by the sound of the cook beating the call to breakfast on a triangle. Buck was standing beside the bed.

"How're they coming this glad morning, son?" he inquired with a grin.

"Fine and dandy," grinned back Flandrau.

So he was, comparatively speaking

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The pain in his arm had subsided. He had had a good sleep. And he was lying comfortably in a clean bed instead of hanging by the neck from the limb of one of the big cottonwoods on the edge of the creek.

A memory smote him and instantly he was grave again.

"How is Cullison?"

"Good as the wheat, doc says. Mighty lucky for Mr. C. Flandrau that he is. Say, I'm to be yore valley and help you into them clothes. Git a wiggle on you."

Buck escorted his prisoner over to the ranch mess house. The others had finished breakfast but Maloney was still eating. His mouth was full of hot cakes, but he nodded across at Curly in a casual friendly way.

"How's the villain in the play this mo'ning?" he inquired.

Twenty-one usually looks on the cheerful side of life. Curly had forgotten for the moment about what had happened to his friend Mac. He did not remember that he was in the shadow of a penitentiary sentence. The sun was shining out of a deep blue sky. The vigor of youth flowed through his veins. He was hungry and a good breakfast was before him. For the present these were enough.

"Me, I'm feeling a heap better than I was last night," he admitted.

"Came pretty near losing him out of the cast, didn't we?"

"Might a-turned out that way if the stage manager had not remembered the right cue in time."

Curly was looking straight into the eyes twinkling across the table at him. Maloney knew that the young fellow was thanking him for having saved his life. He nodded lightly, but his words still seemed to make a jest of the situation.

"Now enters the heroine. Spotlight. Sa-a-ved," he drawled.

The heart of the prisoner went out to this man who was reaching a hand to him in his trouble. He had always known that Maloney was as true and steady as a snubbing post, but he had not looked for any kindness from him.

"Kite just got a telephone message from Saguache," the Bar Double M man went on easily. "Your friends that bought the rustled stock didn't get away with the goods. Seems they stumbled into a bunch of rurales unexpected and had to pull their freight sudden. The boys from the ranch happened along about then, claimed ownership and got possession."

"If the men bought the stock why didn't they stop and explain?" asked Buck.

"That game of buying stolen cattle is worn threadbare. The rurales and the rangers have had their eye on those border flitters for quite some time. So they figured it was safer to dust."

"Make their getaway?" Curly inquired as indifferently as he could. But in spite of himself a note of eagerness crept into his voice. For if the men had escaped that would be two less witnesses against him.

"Yep."

"Too bad. If they hadn't I could have proved by them that I was not one of the men who sold them the stock," Flandrau replied.

"Like hell you could," Buck snorted, then grinned at his prisoner in a shamefaced way: "You're a good one, son."

"Luck has been breaking bad for me but when things are explained—"

"It sure will take a lot of explaining to keep you out of the pen. You'll have to be slicker than Dutch was."

Jake stuck his head in at the door. "Buck, you're needed to help with them two-year-olds. The old man wants to have a talk with the rustler. Doc says he may. Maloney, will you take him up to the house? I'll arrange to have you relieved soon as I can."

(Continued on next page).

"By the Way"

MIGHT BE LONELY.

"Look here, now, Harold," said father to his little son, who was naughty, "if you don't say your prayers you won't go to heaven."

"I don't want to go to heaven," sobbed the boy, "I want to go with you and mother."

NEW PET WORDS.

"See that man over there? He's a bombastic ass, a wind-jammer nonentity, a conceited humbug, a parasite, and an encumbrance to the earth."

"Would you mind writing all that down for me?"

"Why in the world—"

"He's my husband, and I should like to use it on him some time."

UNCONSCIOUSLY LUDICROUS.

The cases are quite numerous, As well as quite mysterious, When men appeared most humorous When trying to be serious.

SOUR GRAPES.

A judge questioning an Irishman at a recent trial. "He took you by the throat and choked you, did he?" asked the judge.

"He did, sorr," said Pat. "Sure, sorr, he squazed me throat till I thought he would make cider of me Adam's apple."

HIS PROBABLE ACTION.

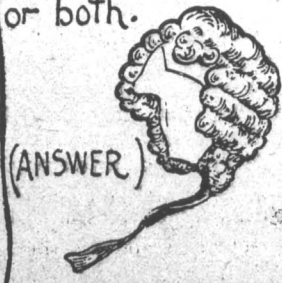
"I notice a good deal in the papers about our soldiers taking up farming when they return from overseas," musingly said honest Farmer Hornbeak. "So, probably, by this time next year I'll be deferentially saying, 'Pardon me, Colonel, but the dinner horn has just blown,' or a trifle more briskly, 'Captain, them hogs is out again,' or yelling in no uncertain tones, 'Lieutenant, dad-durn your ornery picture, do you want to lay abed all day?'"

SOME JOB FOR DAD.

A school teacher received the following note: "Dear Madam, Please excuse my tommy today, he won't come to skule because he is acting as timekeeper for his father, and it is your fault. U gave him a example, if a field is 5 miles around how long will it take a man walking 3½ miles per hour to walk 2¼ times around it? Tommy ain't a man, so we sent his father. They went early this morning, and father will walk around the field and tommy will time him, but please don't give my boy such examples agin, because my husband must go to work every day to support his family."

Today's Riddle

Perfect with a head, perfect without a head, perfect with a tail, without a tail, perfect with either, neither, or both.



(ANSWER)



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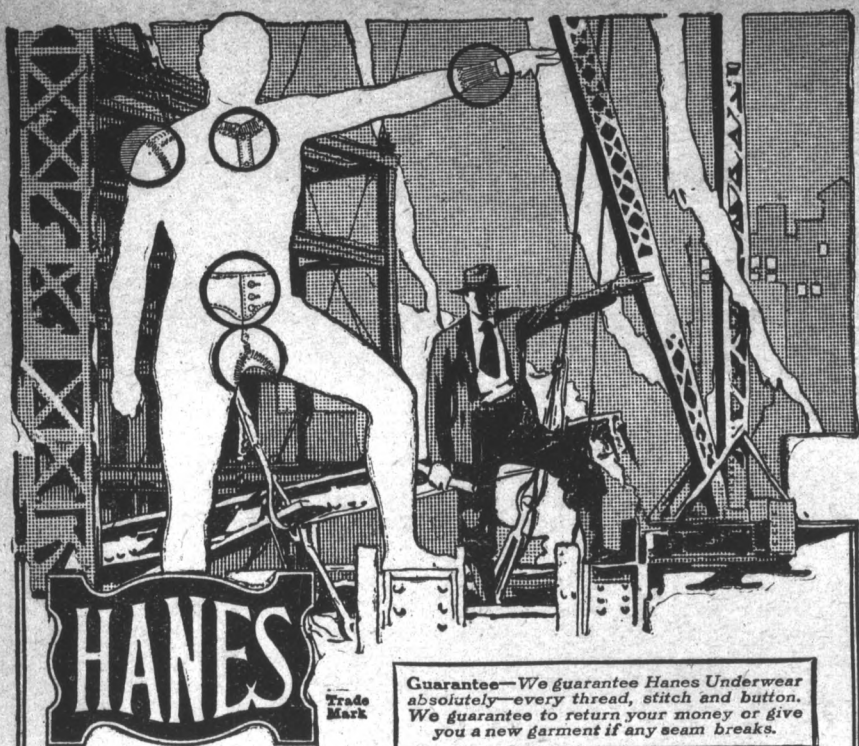
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A Mexican woman let them into the medicine without squealing. chamber where the wounded man lay. "Maybe it is and maybe it isn't." It was a large sunny southeast room with French windows opening upon a long porch. Kate was bending over the bed rearranging the pillows, but she looked up quickly when the two men entered. Her eyes were still gentle with the love that had been shining down from them upon her father.

Cullison spoke. "Sit down, Dick." And to his prisoner: "You too."

Flandrau saw close at hand for the first time the man who had been Ari-ona's most famous fighting sheriff. Luck Cullison was well-built and of medium height, of a dark complexion, clean shaven, wiry and muscular. Already past fifty, he looked not a day more than forty. One glance was enough to tell Curly the kind of man this was. The power of him found expression in the gray steel-chilled eyes that bored into the young outlaw. A child could have told you he was not one to trifle with.

"You have begun early, young fellow," he said quietly.

"Begun what?" Curly asked, having nothing better to say.

"You know what. But never mind that. I don't ask you to convict yourself. I sent for you to tell you I don't blame you for this." He touched the wound in his side.

"Different with your boys, sir." "So the boys are a little excited, are they?"

"They were last night anyhow," Curly answered, with a glimmer of a smile.

Cullison looked quickly at Maloney and then at his daughter.

"I'll listen to what you've been hiding from me," he told them.

"Oh, the boys had notions. Miss Kate argued with them and they saw things different," the Bar Double M rider explained.

But Cullison would not let it go at that. He made them tell him the whole story. When Curly and Maloney had finished he buried his daughter's little hand in his big brown fist. His eyes were dancing with pride, but he gave her not a word of spoken praise.

Kate, somewhat embarrassed changed the subject briskly. "Now you're talking too much, Dad. Doctor Brown said you might see him for just a few minutes. But you're not to tire yourself, so I'll do the talking for you."

He took his orders with the smiling submission of the man who knows his mistress.

Kate spoke to Curly. "Father wants me to tell you that we don't blame you for shooting at him. We understand just how it was. Your friend got excited and shot as soon as he saw he was surrounded. We are both sorry he was killed. Father could not stop the boys in time. Perhaps you remember that he tried to get you to surrender."

The rustler nodded. "Yes, I heard him holler to me to put my gun down, but the others blazed away at me."

"And so you naturally defended yourself. That's how we understand it. Father wants it made clear that he feels you have done nothing else."

"Much obliged. I've been sorry ever since I hit him, and not only on my own account."

"Then none of us need to hold hard feelings." The girl looked at her father, who answered her appeal with a grim nod, and then she turned again to the young rustler a little timidly. "I wonder if you would mind if I asked you a question."

"You've earned the right to ask as many as you like."

"It's about— We have been told you know the man they call Soapy Stone. Is that true?"

Flandrau's eyes took on a stony look. It was as if something had sponged all the boyishness from his face. Still trying to get him to give away his partners in the rustling, were they? Well, he would show them he could take his

medicine without squealing. "Oh, but you don't see what we mean. It isn't that we want to hurt you." She spoke in a quick eager voice of protest.

"No, you just want me to squeal on my friends to save my own hide. Nothing doing, Miss Cullison."

"No. You're wrong. Why are you so suspicious?"

Curly laughed bitterly. "Your boys were asking that question about Soapy last night. They had a rope round my neck at the time. Nothing unfriendly in the matter, of course. Just a casual interest in my doings."

Cullison was looking at him with the steel eyes that bored into him like a gimlet. Now he spoke sharply.

"I've got an account running with Soapy Stone. Some day I'll settle it likely. But that ain't the point now. Do you know his friends—the bunch he trails with?"

Wariness still seemed to crouch in the cool eyes of Flandrau.

"And if I say yes, I'll bet your next question will be about the time and the place I last saw them."

Kate picked up a photograph from the table and handed it to the prisoner. "We're not interested in his friends—except one of them. Did you ever see the boy that sat for that picture?"

The print was a snapshot of a boy about nineteen, a good looking handsome fellow, a little sulky around the mouth but with a pair of straight honest eyes.

Curly shook his head slowly. Yet he was vaguely reminded of someone he knew. Glancing up he found instantly the clew to what had puzzled him. The young man in the picture was like Kate Cullison, like her father too, for that matter.

"He's your brother." The words were out before Flandrau could stop them.

"Yes. You've never met him?"

"No." Cullison had been watching the young man steadily. "Never saw him with Soapy Stone?"

"No." "Never heard Stone speak of Sam Cullison?"

"No. Soapy doesn't talk much about who his friends are."

The ex-sheriff nodded. "I've met him."

Of course he had met him. Curly knew the story of how in one drive he had made a gather of outlaws that had brought fame to him. Soapy had broken through the net, but the sheriff had followed him into the hills alone and run him to earth. What passed between the men nobody ever found out. Stone had repeatedly given it out that he could not be taken alive. But Cullison had brought him down to the valley bound and cowed. In due season the bandits had gone over the road to Yuma. Soapy and the others had all sworn to get their revenge some day. Now they were back in the hills at their old tricks. Was it possible that Cullison's son was with them, caught in a trap during some drunken frolic just as Curly had been? In what way could Stone pay more fully the debt of hate he owed the former sheriff than by making his son a villain?

The little doctor came briskly into the room.

"Everybody out but the nurse. You have had company enough for one day, Luck," he announced cheerily.

Kate followed Maloney and his prisoner to the porch.

"About the letters of your friend that was shot," she said to Curly. "Doctor Brown was telling me what you said. I'll see they reach Miss Anderson. Do you know in what restaurant she is working?"

"No. Mac didn't tell me." The boy gulped to swallow an unexpected lump in his throat. "They was expecting to get married soon."

"I—I'll write to her," Kate promised,

her eyes misty.

"I'd be obliged, Miss. Mac was a good boy. Anyone will tell you that. And he was awful fond of her. He talked about her that last night before the camp fire. I led him into this."

"I'll tell her what you say."

"Do. Tell her he felt bad about what he had done. Bad companions got him going wrong, but he sure would have settled down into a good man. That's straight goods, too. You write it strong."

The girl's eyes were shiny with tears. "Yes," she answered softly.

"I ain't any Harvard A. B. Writing letters ain't my long suit. I'm always disremembering whether a man had ought to say have went and have knew. Verbs are the beatingest things. But I know you'll fix it up right so as to let that little girl down easy."

"I've changed my mind. I'll not write but go to see her."

Curly could only look his thanks. Words seemed strangely inadequate. But Kate understood the boy's unspoken wish and nodded her head reassuringly as he left the room.

CHAPTER V.

Laura London.

KITE BONFILS and Maloney took Curly back to Saguache and turned him over to Sheriff Bolt.

"How about bail?" Maloney asked.

The sheriff smiled. He was a long lean leather-faced man with friendly eyes from which humorous wrinkles radiated.

"You honing to go bail for him, Dick?"

"How much?"

"Oh, say two thousand."

"You're on."

"What!"

A cowpuncher with fifty dollars two weeks after pay day was a rarity. No wonder Bolt was surprised.

"It's not my money. Luck Cullison is going bail for him," Maloney explained.

"Luck Cullison!" Maloney's words had surprised the exclamation from Curly. Why should the owner of the Circle C of all men go bail for him?

The sheriff commented dryly on the fact. "I thought this kid was the one that shot him."

"That was just a happenstance. Curly shot to save his bacon. Luck don't hold any grudge."

"So I should judge. Luck gave you his check, did he?"

Bolt belonged to the political party opposed to Cullison. He had been backed by Cass Fendrick, a sheepman in feud with the cattle interests and in particular with the Circle C outfit. But he could not go back on his word. He and Maloney called together on the district attorney. An hour later Dick returned to the jail.

"It's all right, kid," he told Curly. "You can shake off the dust of Saguache from your hoofs till court meets in September."

To Flandrau the news seemed too good for the truth. Less than twenty-four hours ago he had been waiting for the end of the road with a rope around his neck. Now he was free to slip a saddle on his pony Keno and gallop off as soon as he pleased. How such a change had been brought about he did not yet understand.

While he and Maloney were sitting opposite each other at the New Orleans Hash House waiting for a big steak with onions, he asked questions.

"I don't savy Cullison's play. Why-for is he digging up two thousand for me? How does he know I won't cut my stick for Mexico?"

"How do I know it?"

"Well, do you?"

Maloney helped himself to the oyster crackers to pass the time. "Sure I do."

"How?"

"Search me. But I know you'll be here in September if you're alive and kicking."

Flandrau persisted. "But Luck don't owe me anything, except one pill sent promiscuous to his address. What's he going down into his jeans for? Will you tell me that? And shove them crackers north by east. Got to fill up on something."

"Ain't you as good a guesser as I am, Curly?"

"Well then, here's my guess. Miss Kate made him."

"I reckon maybe she influenced him. But why did she? You don't figure that curly topnot of yours is disturbing her dreams any, do you?"

"Quit your joshing and tell me why."

"I can't tell you for sure. But here's my guess. Don't cost you a cent if you ain't satisfied with it. First off, there was poor Mac shot by the Circle C boys. Course Mac was a horse thief, but then he was a kid too. That worried the little girl some. She got to thinking about brother Sam and how he might be in the same fix one of these days as you are now. He's on her mind a good deal, Sam is. Same way with the old man too, I reckon, though he don't say much. Well, she decided Soapy Stone had led you astray like he's doing with Sam. It got to worrying her for fear her brother might need a friend some time. So she handed over her worry to the old man and made him dig up for you."

"That's about it. Tell me what you know of Sam. Is he as white as the rest of the family?"

"Sam is all right, but he has got off wrong foot first. He and the old man got to kind of disagreeing, for the kid was a wild colt. Come by it honestly from the old man too. Well, they had a row one time when Sam got into trouble. Luck told him he never wanted to see him again. Sam lit out, and next folks knew he was trailing with Soapy's gang. Consequence is, Sam's hitting the toboggan for Tophet by all accounts."

"Looks like someone ought to be able to pry him loose from that bunch," Curly mused aloud.

Maloney grinned across at him. "You try it, son. You've always led a good pious life. He sure would listen to you."

He had said it in a jest, but Curly did not laugh. Why not? Why shouldn't he hunt up Sam and let him know how his folks were worrying about him? What was to hinder him from trying to wipe out some of the big debt he owed the Cullison family? He was footloose till September and out of a job. For he could not go back to the Map of Texas with his hat in his hand and a repentant whine on his lips. Why not take a hike into the hills and round up the boy? Of course Sam might not listen to him, but he could not tell that till he had tried. It had taken him scarcely a moment to make up his mind. The smile had not yet died out of Maloney's eyes when he spoke.

"Darned if I don't take a crack at it."

The man on the other side of the table started at him.

"Meaning that, are you?"

"Yep."

"Might be some lively if Soapy gets wise to your intentions," he said in a casual sort of way.

"I don't aim to declare them out loud."

That was all they said about it at the time. The rest of the evening was devoted to pleasure. After dinner they took in a moving picture show. The first film was a western melodrama and it pleased them both immensely.

"I'd be afraid to live in a country where guns popped like they do in moving picture land," Curly drawled. "Where is it anyhow? It ain't Texas, nor Oklahoma, nor Wyoming, nor Montana, nor any of the spots in between, because I've been in all of them."

(Continued next week.)

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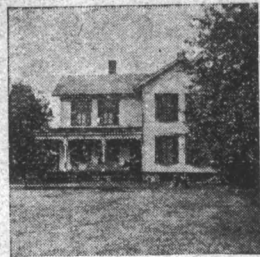
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Woman's Interests



The New Coat Materials

THE coat question is one which is causing wrinkles in more than one feminine forehead these fall days, with their hint of winter in the air. During the war we wore our old one from motives of patriotism, bond-buying, or inherent thriftiness. Anyway, prices were rather high, and we looked forward to peace and lower prices. Peace came a year ago, but alas, and alack! Prices seem even higher than last year. The coat you can buy for \$50 this fall is of about the same quality as you got for \$15 or \$18 in those good old days that a certain class of citizenry tell us have gone never to return.

Many women are solving the problem of the new winter wrap by making their own coats. It sounds like a tremendous undertaking, but those who have tried it declare that making a coat is easier than making a dress, and with the simple loose styles of this winter it really should be. Half the battle in coat making is in first securing a pattern that fits, and the other half is in pressing. Keep a hot iron by you all the time, press every seam thoroughly as you go along, stick exactly to the directions given with your

pattern, and when the coat is finished pay a tailor a half dollar, or perhaps it will be a dollar this year, to give the garment a thorough pressing. If you have had any experience at all in sewing you need not be ashamed of the garment you will have created.

In making the coat the really important question is deciding on the material and color. There is such a wide latitude in materials and prices and colors that the decision is rather hard to make. If you feel that you need not limit yourself too closely, nothing is lovelier than the Bolivia cloths. These lovely coatings are so soft and light that a coat made of them is hot burdensome and yet is warmer than the heavier and cheaper materials. The Bolivias come in every color, brown, radium, copper, blues, greens, old purple, in solid colors and in the silver-tipped blues, browns, greens, in fact, every desired color.

Particularly beautiful is the radium, a blending of blue and gold that is indescribably beautiful in the sunlight. If you are one of the fortunate mortals who can buy a coat when you get tired of the old one, this would be a good choice. But if you must wear a gar-

ment three or four seasons it would be unwise to choose so noticeable a piece of goods. Choose rather, a brown—browns are always good—or a blue. Or perhaps one of the very deep reds, if that color is becoming.

Not so light in weight nor so soft in texture are the Bolivias at \$7.00 a yard. But nevertheless they make handsome and warm wraps. Two of the pieces noted were particularly good colors, one a dark brown background with threads of blue instead of "silver tip," and the other in taupe.

Silver-tone at \$6.00 the yard comes in a variety of brown and tan shades, one particularly pretty one being exactly the color of cinnamon and sugar blended.

A heavy, coarse weave man's suit, in mottled brown and green is called heather. This makes a good, durable all-weather garment. It may be bought for \$6.00 the yard and would make a good coat for the woman who rides a great deal in winter. Lighter in weight, and really more suitable for suits than for coats are the velours for \$5.00. These would need a warm interlining, and for this there is an extra heavy outing flannel which may be

bought in a variety of shades.

For the lining of the coat the pretty Persian silks would be first choice, though conservative women choose linings of a plain color. They range in price from \$2.50 a yard up, the higher priced ones, of course, being much heavier and consequently better wearing. If you feel that you can not pay so much for the lining there are good values in mercerized linings—sateens we used to say. These are much cheaper, coming as low as seventy-five cents and may be bought in solid or figured patterns.

As to the amount of coating required, the radium Bolivia is sixty inches wide and a woman of medium height and weight could get a coat out of three yards. The other materials vary in width from fifty-five inches to fifty-eight. Of these narrower cloths three and a half yards would be necessary unless you are a small woman. The usual way of determining is to measure twice your length. Careful cutting allow the sleeves to come off the body. Plan to have the coat full length, loose and with a big storm-defying collar. It may be in dolman style or with fitted sleeves.

Keep the Mouth Clean---By E. W. Gage

DR. MAYO, the celebrated surgeon says that the next forward movement to be undertaken in the prevention of disease is the procuring of clean mouths among the people. This will be a surprise to many folks, but the fact remains that the human mouth is one of the worst germ-carrying agents.

The mouth, which should be the cleanest part of the body, becomes the filthiest when neglected. There is nothing more disgusting than a mouth which is a stranger to the tooth brush, or one that is treated only occasionally to a half-hearted scrubbing with this highly necessary toilet article. A person with such a mouth, when sneezing or coughing, forces into the air disease germs which immediately become attached to dust particles, poisoning the air which others must breathe, with myriads of disease-producing germs such as pulmonary tuberculosis, pneumonia, diphtheria, tonsillitis, la-grippe, the common cold, and many others. Imagine, then, the result when the person drives these germs into the stomach.

Medical authorities advise us that fully seventy-five per cent of diseases either originate in the mouth or enter the system through it. Few people have any conception of the enormous number of germs (bacteria) to be found in the human mouth. A conservative estimate, however, is that the ordinary varieties which are to be found in a diseased mouth number about fifteen. Bacteria multiply so rapidly that tens become millions in a few hours if the condition of the mouth is favorable to their reproduction.

A noted bacteriologist has estimated that in a certain unclean mouth there were not less than 1,140,000,000 bacteria. Think of the condition of the atmosphere of a room inhabited by a person with such a mouth! Some of

these germs are more poisonous or disease-producing than others, but it is a fact that the human mouth when in a diseased condition contains many of the most virulent germs known. This is especially true of germs associated with decayed teeth having abscesses at their roots, and those with pus which may be pressed out from around the necks of the teeth.

These conditions are not out of the ordinary, but are quite common. In fact, it is an accepted fact that dental disorders are the most widespread that affect the human race, and that many obscure ailments affecting the general system, such as chronic dyspepsia, gastritis, certain nervous affections and general diseased conditions of the blood as pernicious anaemia, may be traced to a diseased mouth. This condition is the result of failure to use the tooth brush regularly and properly and to consult a dentist when decayed teeth or red, swollen gums are first noticed.

Fully twenty-five per cent of the people suffer from pus at the roots of

one or more teeth. This poison may find its way into the stomach or intestines by being swallowed, or may be absorbed into the blood and circulate to all parts of the body. The health of any person with an unclean mouth is always in danger. The time is sure to come sooner or later when, owing to a cold or other cause, the individual becomes "run down" and his power of resistance is lowered, resulting in a serious illness, the infection of which came from the mouth.

Statistics show that over ninety per cent of the children in our public schools have decayed teeth or those abscessed. In some communities there are regularly held medical examinations of the children, and if the parents fail to correct the evils found existing, the community bears the expense. We are coming to appreciate that the nation's welfare is the individual's health.

The tongue is often the seat of ulcers due to the mechanical irritation of decayed teeth having sharp edges,

and to deposits of tartar. Ulcers of this kind when neglected, are often the starting point of cancer. As cancer is much more prevalent than tuberculosis in those above forty years of age, it is important to attend to any ragged edges or points of irritation.

Due to its close proximity, the throat may be infected from a diseased mouth. Periodic attacks of tonsillitis have been traced to an unsanitary mouth. A number of diseases result from infected tonsils, and in many cases the tonsils are infected from the mouth. The spread of diphtheria is much more rapid and its virulence greater among children with neglected and diseased mouths than among those whose mouths are in a fairly hygienic condition.

An English physician discovered in an examination of 2,406 people with stomach trouble, including indigestion, that bacteria existed in eighty-seven per cent. In an examination of one thousand chronic cases, thirty-six per cent had less than half their natural chewing powers owing to loss of tooth tissue, while twenty-two per cent had mouths containing germ-laden teeth.

To prevent as much as possible, therefore, the contracting of disease, two rules must be observed: First, keep the mouth as free from bacteria as possible. This condition can best be obtained by the proper and regular use of the tooth brush, using it in such a manner as to brush every part of the mouth, the spaces between the teeth and the top of the tongue.

Second. Keep at a distance from those suspected of having unclean mouths, especially if they are in the habit of coughing or clearing their throats. The power of resistance can be maintained by proper mastication of the food with a good set of teeth and by closely observing the proper laws of living.

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A stimulated public conscience and a broader effort to promote the general welfare of your community.

DISCOVERED—A HOUSEHOLD
CONVENIENCE.

AN indulgent aunt presented a watch to one of our young sons and to the other a flashlight. For thirteen nights it was absolutely necessary for those boys to ascertain the time seven times between going to bed and getting up. Then the novelty wore off, both flash and watch were turned over to me with the remark, "Here, Mother, you take them nights. They're awful handy."

The very first night that flash registered me as a firm friend, but it had only just begun to show the reason for its existence. It has proved just the thing, so that we are thinking of getting another to ease up on the demands made for it.

Those who doubt it as a sensible investment are referred to the following occasions when it has played first aid:

All nightly excursions to the woodshed, coal bin, etc.

Hunting up the baby chicks at nightfall.

Unharnessing the family horse after dark.

Reading the incubator thermometer.

Hunting in dark closets for mysterious disappearances.

Examining sore throats in children or wounds in animals.

It has proved invaluable nights when the children were ailing, doing away with the necessity of a lamp, often so annoying.

Mail-order houses quote these flashes for very little; local merchants for a little more, but it will pay to invest in one, wherever you buy it.

ESTHER E. LINC.

Apples the Base for Five Different
Jellies.

Cook a peck of tart, juicy apples until they are done, but not over-cooked. Strain the juice and boil down until it will jell with an equal amount of sugar. Add lemon juice and a little lemon extract if you wish lemon jelly. Pineapple can be sliced in with the apples for pineapple flavor. In the same way strawberry, peach and quince flavors may be used.

Mock Beef Steak.

Slice several large, firm green tomatoes about one-half inch thick. Season well, roll in flour and drop in a hot greased frying pan. When they are well browned on one side, turn them over, being careful not to break them. Serve hot.—Mrs. Z. I. D.

Beef Fricassee.

Purchase a piece of meat cut from the flank, weighing between two and three pounds. Simmer the meat slowly in water to cover, with two or three onions, and seasoning of salt and pepper, until very tender. Take up the meat and cut in one-inch pieces. Make a gravy with the stock, and reheat the meat in this. Pour the whole over split baking powder biscuits, as with chicken fricassee.—Mrs. M. M.

Savory Custard for the Invalid.

Warm one cupful of strong beef tea or chicken broth, and to it add a beaten egg, a little salt and a dust of white pepper. Pour into a buttered cup, sprinkle a little chopped parsley over the top and set in a steamer over boiling water until the egg sets.—L. M. T.

HERE'S ONE WORKER WHO
NEVER STRIKES.

The trolley men went on a strike,
The waiters followed suit;
The housemaids' union wants more pay,
And six nights out to boot.
The janitors have quit and left,
Us for ourselves to shirk,
The railroad brotherhoods walk out,
And make us hike to work.
The painters drop the brush and pot,
Demanding wages high,
The miners leave the coal unmined,
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The plumbers will not mend the pipes,
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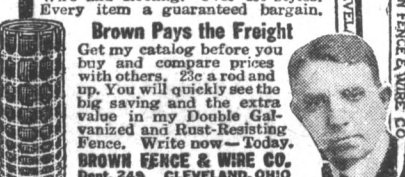
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THE national dish of France is—pot-au-feu. Its origin dates far, far back, Henry IV, when he became king of France, had the words put into his mouth that he wanted everybody in his kingdom to have poule-au-feu (a fowl in the pot) every Sunday, and ever since the working classes and the people in the country districts look upon the pot-au-feu as the great Sunday dish.

In the time of Henry the IV, it is quite probable that fowls were more plentiful than beef, for now the proverbial fowl is replaced by beef, though the people who can afford it use at least parts of the fowl with a portion of beef. Properly, pot-au-feu means the bouillon and the boiled meat that is used to make it, whether it be beef or chicken, or both, and one understands in France that both will be served. Both are eaten, not as a matter of economy alone, but by preference. This dish is made alike by both rich and poor. Of course, there are different prices for different pieces of meat, and to be sure the poor people take a much cheaper cut, but their bouillon does not suffer unless they economize in the quantity of meat used for each quart of water. It is said that eating in France is a very serious function and surely the eating of pot-au-feu is that.

Everyone knows that freshly killed meat is the best for making soup, as its juices have not been impaired and partially lost by preservation in cold storage. The best cuts of beef for this are the low and top rounds, the neck and shinbone, and some like shoulder.

The following are the necessary things to be used in making the national dish of France: Two pounds of lean meat from the neck, a knuckle bone and a pound of the lower round, or a medium sized chicken, three quarts of water, three teaspoonfuls of salt, a heart of celery, two large car-

rots, two medium sized turnips, three large leeks, two small onions, four sprigs of parsley, three-fourths of a teaspoonful of kitchen bouquet and four cloves.

And the soup is prepared in the following manner: The carrots are scraped and the turnips peeled and cut in slices. The leeks are cleaned and the white ends cut off. The green portion of the leeks and the parsley and the cel-

not be allowed to boil until the scum is all removed and the broth is clear. If the scum is not removed it sinks to the bottom and makes the bouillon muddy. When the pot begins to boil, put in the onion with the cloves, the carrots, the turnips and the bundle of green things, cover the pot again and simmer gently for three hours. At the end of the three hours place the white portion of the leeks in the pot and boil one hour. About four minutes before the dish is to be served, put in the kitchen bouquet.

The manner of serving the dish is quite as characteristic of France as anything could possibly be. Cut the slices of bread and then cut them in rounds with a biscuit cutter. Place them on a browning sheet in the oven and brown them through and through. Place them in a soup tureen and then set the soup pot on the stove and let it boil. Fill a ladle with the soup when it is boiling the hardest and pour it through a skimmer into the soup tureen. A skimmer is used to take out the vegetables, which are served on a separate plate. When the bouillon is served in this manner it is called croute-au-pot. After the soup, the beef is served elaborately garnished with parsley. Tomato sauce, mushroom sauce or mustard is generally served with it.

The French cook insists on having a special pot for this especial dish. Nothing else is cooked in it because if used promiscuously for the cooking of various foods the fine delicate flavor of the pot-au-feu is lost.

This may seem considerable space to devote to the preparation of one dish, but to be less explicit would not be doing justice, both to the national dish and the housekeeper in France.



Walnut georgette blouse embroidered in the same color. The fitted peplum gives a trim waist-line, an improvement on the loose "Russian" or "Cossack" over-b blouse.

ery are tied together; the cloves are stuck into the peeled onions; the meat is put into a pot with cold water to extract the juice and the pot is then covered and set over a slow fire. Just as soon as the scum begins to rise it is removed with a skimmer and it should

Housekeepers' Exchange

The Handy Crochet Needle.—Try making a solution of chloride of lime, keeping a small steel crochet needle in your sewing machine drawer. It will be found invaluable in pulling out bastings, ripping, catching the under thread, and other details incidental to sewing.—M. A. P.

Handling Small Garments.—When making children's dresses do not sew up the back seam until the last, as it is much easier to sew on panel fronts, yokes, belts, trimming braid, etc., if the dress can be laid flat.—Mrs. T. McK.

To Prevent Needles from Rusting.—A good way to keep needles from rusting is to place them in booklets made from the waxed paper that comes around crackers. Damp weather causes needles to rust, but this precaution will prevent it. A little child would enjoy making some of these little booklets, and they will last a long time.—Mrs. J. J. O'C.

Sewing on Lace.—When sewing lace on a garment, don't forget that the thread at the edge was put there purposely for a drawstring, and you can gather the lace to just the right fullness without the use of a needle and thread. When one is sewing insertion on a garment where there is a corner to be turned, this gathering thread comes handy also.—Mrs. E. S. T.

Renewing Velvet.—When steaming velvet over a teakettle, insert a funnel in the mouth of the kettle. This will spread the steam over a larger surface, and the work will be quickly accomplished.—Mrs. J. J. O'C.

Bleaching Laces and Linens.—One housekeeper has found a way of bleaching out linens and laces when they become stained or turn yellow, which she considers excellent. She

makes a solution of chloride of lime, as follows: In a clean pail, she puts two and a half quarts of water and stirs into it, with a stick, two ounces of fresh chloride of lime. She covers this carefully, to keep the dust out, and lets it stand undisturbed over night. The next day she strains it through a coarse strainer and then through a piece of clean muslin, and bottles it for later use. When she wishes to remove stains from linen, she mixes some of this solution with half as much water and lays the articles to be bleached in it, letting them remain for five or ten minutes. Next she wrings them out gently and carefully and lays them in a basin of clean cold water, letting them soak for about an hour.—M. M.

Pressing Woolen Goods and Silks.—When pressing a wool fabric or a piece of fine silk, lay unbleached muslin over it, in order to prevent glossing. After passing the iron over woollens, lift up the cloth and brush the nap with a stiff brush.—Miss Z. I. D.

Reinforcing Stockings.—A good way to strengthen the children's stockings is to sew strong black muslin on the bias, inside the heels and knees. It will not show and will treble the life of the stocking.—Mrs. J. J. O'C.

Convenient Rubber Lined Bag.—A rubber-lined sponge bag is a handy thing to have when traveling, but if you cannot buy one the size you wish, you can make an oilcloth bag. Take a piece of white oilcloth of the required size for the lining, and make the outside of dark cloth or pretty cretonne. Make the bag in the shape of an envelope and fasten with a dress snap, or it may be made square and gathered with a drawstring.—M. C. R.

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Are You Worth a "Chance"?

NOT long ago a magazine devoted several pages to the confession of a criminal. At least the article was called a confession, though it was really an arraignment of society, the criminal's parents, and the church, and an exoneration of the culprit. Everyone except himself was to blame for his blasted life. He never had a chance. The article was in a sympathetic vein, the writer evidently sharing the criminal's opinion.

I couldn't help wondering when I read it just how many really great and good we'd have if everybody took the same attitude towards life. There was Abraham Lincoln. Just how much chance did Lincoln have when he was a boy? As I recall it he made all the chances he ever got. And to go away, way back, how much chance would a great, shambling, stammering boy seem to have to become the greatest orator the world ever knew? Yet Demosthenes got to the top without anybody offering him a chance.

As I see it, success or failure doesn't depend upon chances. It lies deeper. Like the Kingdom of Heaven, it "is within you." We make our own choice when we decide whether we will become a worker or a shirker, whether the thing we think we want is worth sacrificing for or whether the moment's pleasure is worth more to us than the final attainment.

I know one girl who thought she "had it in her" to be a great musician. She was to graduate from an American conservatory and then go to Europe. Just before the European trip her father died and when the estate was settled she discovered that instead of going to Europe she must go

to work. Ever since then she has sighed about losing "her chance." It has never once occurred to her that if she was really half as anxious over studying in Europe as she thinks she is, she would go without summer furs and eighteen-dollar shoes and save her money. If she was really worth a chance she would make it. But clothes and pleasure mean more to her than study.

Another girl I know who thinks she is worth a chance. There is no prospect of anyone giving her the money for her music, so she is going after it herself. No work is too hard nor hours too long if she can advance herself. She loves pretty clothes, but she is willing to do without them temporarily and spend the money for efficient teachers. She hasn't a chance at all, compared with the first girl, but she is making one for herself.

There's the same latitude of choice when it comes to a question of going right or wrong. Unquestionably it is easier to do right in some surroundings than in others. But the choice to do well or ill lies with you. You can do right wherever you are, and if you stick at it long enough you will lift yourself out of your surroundings. It is rather popular to blame society for criminals, but that seems hardly fair. To be sure, the world at large is a little more ready to give the cold shoulder to the criminal than to hold out the helping hand. But if he really wants to do the right thing, if he makes his choice and adheres to it, he can always win out.

It all resolves itself into the general truth that one who is worth a chance makes it for himself. DEBORAH.

Sharing Our Good Things

IN these days of variety of interests and occupation we sometimes do not see our family together until some uplifting message we have come across in our reading, and which we long to share, has grown hazy in our minds. Here is the way one mother shared the good things with her family, and it answered so well it deserves being passed on so others may profit by her experience.

She found on the front page of a magazine Stevenson's beautiful prayer: "The day returns and brings us the petty round of irritating concerns and duties. Help us to play the man; help us to perform them with laughter and kind faces; let cheerfulness abound with industry. Give us to go blithely on our business all this day; bring us to our resting beds, weary and content and undishonored; and grant in the end the gift of sleep."

The prayer was in large type and could be read across the room, and that gave her the idea. She cut out the page, and pinned it to the casing in the archway between the living-room and the dining-room. The husband came in while she was fastening it up, and having read it, said, "That is good; I'm glad I saw it!"

Not a word was said about it but every member of the family read it and commented on it. In a few days the oldest daughter asked to have it in her room and the mother gave it to her thankfully.

Very often she would find a beautiful poem, or a prose extract on a page by itself, and this was always suitable for "Mother's Bulletin Board," as the children came to call it. It was not always a lesson selection. Often an unusually funny story was put up for the family to laugh at and talk of at the table.

If she was reading a book and found something she wanted to share, she copied it on a typewriter, using a large sheet of paper and spacing the lines

far apart so that it might be easily read. Different members of the family claimed what especially appealed to them, so this led to the custom of passing the extracts on to the children's rooms.

Having something new, pleasant, and uplifting constantly brought to their attention, gossip was seldom resorted to in this family circle. So by sharing her good things this mother bestowed a priceless blessing upon her loved ones.—Mrs. J. D.

CANNING POULTRY.

JUST at this season, many poultry keepers are culling their flocks, preparatory to the winter laying season, and the "slacker" hens are being disposed of. Many housewives find that it pays to can them for an emergency meal or for use next summer.

Canning of poultry is not radically different from the canning of fruits or vegetables, the same general principles being followed. Among the general rules, however, are these: Birds should be killed and dressed the same day of canning; they should be singed, washed, cut up, and cooled as for table use; new rubbers should always be used; covers should be fitted and tested; the time of sterilization is important and should not be shortened a minute (count time after water around cans begins to boil). The length of sterilization varies from one and one-half to three hours, according to the method used.

Detailed information on the canning of poultry may be had by writing to the Home Demonstration Agent, Extension Division, M. A. C., East Lansing, Mich.

Pieces of felt pasted on the bottom of lamps or bric-a-brac that stands on polished surfaces, will prevent ugly scratches from marring the furniture.—Mrs. R. D.



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Our Boys' and Girls' Department

Good Friends for Farmer Young Folks

By E. L. Vincent

EVERY now and then I get a peep into the bookcase of a farmer home? Not many boys and girls can boy and it always gives me a warm feeling around the heart; because it helps me to know that this boy is making some friends that will stand him in stead in years to come. I wonder if boys and girls on the farm very often think of their books in this way, as if they were friends, silent, it is true, and still very eloquent, speaking in words that no other friend may

Now and then good books by present-day authors can be had, but be careful about these and take the advice of some good friend before you invest in one of them. There are some books coming from the press in our day that never ought to be in a young person's library—nor an old one's either, for that matter.

Then, too, it is a good thing to take some good young people's paper and after reading it file it away for future reference. I would also like to see every young reader of the Michigan Farmer begin keeping a diary and starting a scrap book of choice poetry and prose selections. These are surely invaluable treasures.

Books are a joy and a well of inspiration. Begin now to get them.

HISTORY OF THE MONTCALM CALF CLUB.

BY CLINTON GREEN.

ON the evening of May 9, 1919, about fifteen men with their sons, met at the city hall in Greenville to organize the Montcalm Boys' and Girls' Calf Club. Dr. Wm. Hansen, V. D. M., and Gifford Patch, Jr., county agricultural agent, were the leaders. The advantages of pure-bred stock, the purpose of organizing a calf club, were clearly outlined by them. They explained that the purpose of the club was to bring more pure-bred stock to the farms and to create an interest in the farm for boys and girls.

Clinton Green was elected president, and Elden Noggles secretary. Eleven boys joined the club. Two boys bought a calf together and of the ten calves, seven were Shorthorns, two Guernseys and one was a Holstein.

The calves were either bought and paid for by the boys with cash or by a note to the Greenville State Bank. The notes were drawn up for a year, and seven per cent interest charged. A mutual insurance company was formed in the club, each boy deposit-



Having a Good Time with the Family Pet.

speaking and helping in the development of character in a way that can scarcely be overestimated! For books do have an appeal to us, whether we know it or not.

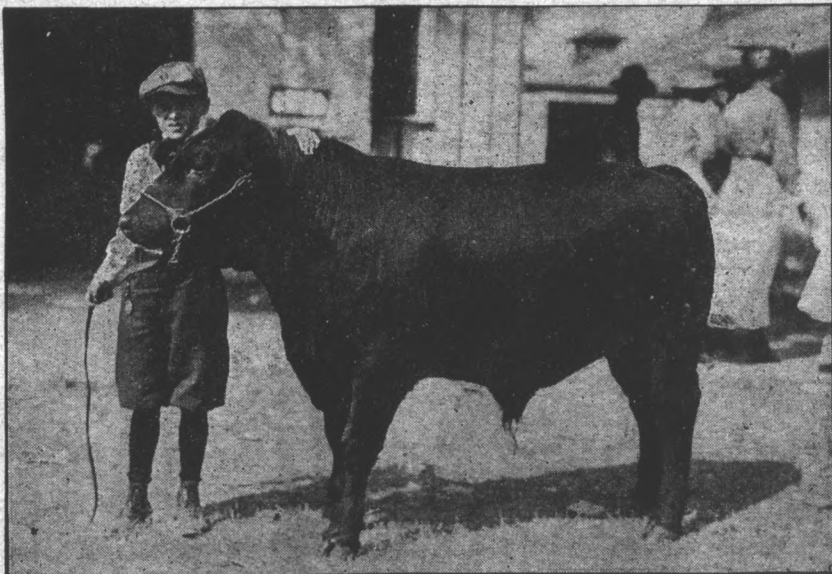
Since this is so, it is a good plan to begin early to gather about one the best and choicest of books. Few in these days will ever know the real hunger I used to know when I was a boy for something to read. We lived away out in the country. Papers were very rare in those days. We had none after my father went into the Civil War. There were no libraries we could step into and get books as town boys and girls can now. In a district two miles from our house there was a small school library, but it had pretty serious reading for a young boy. I well remember how my mother laughed when I came home from that library tugging a big volume of "D'Aubigny's History of the Reformation." But I had to have something to read and I waded through the whole five volumes of that set of religious histories. And I made up my mind then that if I lived I would have some books for myself and for my children, if I ever had any. I began buying now and then a book and slowly added to my library until now I have many hundreds of the choicest books to be had.

That is the way every farmer boy and girl may begin. When there is a bit of money that can be spared, buy some good book. If you have a bookcase, well and good. If not put up a shelf yourself, and keep all your books on it, always within easy reach. Dust them off now and then and do not let the sunlight fall on them, for that will cause the colors of the covers to fade.

It is a good thing to have some books about the life of the country. Take it in birds and flowers and trees. We may learn a great deal more about these than we do now. Do you know all about the trees? Can you name

lot know how to use it to the best advantage. A well informed voter is a tower of strength to the nation.

Now for reading of a different nature. Be sure that some of the world's best books are on your shelf. Trash never made any reader better or helped him to live a good, clean life. Begin reading the best literature early. If you do not, your taste will lead away from such books and you will surely regret it. Some of Dickens' works, a few of Hawthorne's, some



Good Stock Increases Young Folks' Interest in Farming.

choice books of good poetry, histories, biographies—these are helpful and can be had without heavy outlay of money. In most large cities there are dealers in books that will buy for us anything we want at the lowest possible figure. By getting in touch with these men I have enriched my library lately with a set of The Historian's History of the World and The History of the Nations. Another almost necessary book is a good dictionary.

The meetings are devoted to the study of the pure-bred cattle. We meet every Saturday in the afternoon at the home of a member of the club. The Greenville Fair of this year will never be forgotten. Most of the boys were there from Tuesday morning to Friday night and, of course, all had a good time.

There were five prizes, ranging from \$1.00 to \$5.00, for the boys standing highest in scoring, as directed by the judge. Contestants had to be members of a calf club. Our club was the only one represented. Eight boys entered, and David Kroft took the first prize. So far our club has been a great success, not one calf has been sick, and the club has in every way accomplished its purpose. Most of the boys are going to keep their calves and many say, "It's fun going for the cows now, because my calf is with them." One reason for our success is that our fathers are as enthusiastic over the prize.



Bumper the White Rabbit Plays King

By George Echelbert Walsh

PLAYING king was not an agreeable role for Bumper. In the first place, he felt unequal to it; and in the second, he felt a good deal like an impostor. How Jimsy and Wheedles, his two brothers in the city, would laugh at the idea! They didn't think he possessed any kingly qualities. They would even dispute his leadership in their own family.

But one thing gave Bumper considerable self-confidence. He was the only white rabbit in the woods. None of the wild animals, except Buster the Bear, who had spent a few years in a city Zoo, had ever seen a white rabbit. They didn't believe such a creature lived. And the pink eyes! Why, they alone were enough to distinguish him from his country cousins, and set him apart as one to be admired.

There was no question about the admiration all the rabbits felt for him. Respect amounting almost to awe for his wonderful fur of white, and his eyes of a delicate shade of pink, made them feel that he was a real king of their tribe.

Bumper, after a while, grew accustomed to this admiration, and he began to feel pardonable pride in his beautiful fur. Perhaps, after all, there was something to the story the Old Blind Rabbit told. If looks made one a king then certainly Bumper was entitled to the position. He recalled the words of his mother, when she told him he was the handsomest of her children, with the purest white fur and the pinkest of pink eyes. Was that another indication that he was designated by nature to rule over his wild people?

But one one point Bumper entertained no illusions. He was conscious of his ignorance of the woods and the ways of the wild creatures. Why, he hardly knew one from another! He had failed to recognize Mr. Crow on their first meeting, and it is doubtful if he would have known Mr. Fox immediately if Mr. Bull-Frog hadn't pointed him out. Buster the Bear he had recognized, for he had seen bears in the city Zoo, and the Bats and Mr. Sewer Rat were old city friends of his.

But the woods were full of other strange animals. He heard Spotted Tail, a big gray rabbit, and Fuzzy Wuzz, a demure little maiden of a rabbit with soft brown eyes, refer repeatedly to Billy the Mink, Mr. Beaver, Sleepy the Opossum, Brown the Muskrat, Washer the Raccoon and Curly the Skunk. Now to Bumper all these names meant nothing, for he had never met the owners of them.

Were they friends or enemies of the rabbits? If by chance he should meet one what would he do? Run away as from a great danger, or greet him pleasantly? Which were the dangerous animals, and which were the harmless ones?

Unable to answer this question, and dreading lest he make a mistake that might cause him embarrassment if he went out hunting with the pack, he pleaded weariness from his travels, and remained in the burrow for three whole days.

During this time he made it a point to ply the Old Blind Rabbit with questions, storing up in his mind for future use any words of wisdom that dropped from the shrunken lips of the former leader. His attention flattered the Old Blind Rabbit, who told Bumper many tales and stories of his people, and of the troubles they experienced in the woods.

"My gravest fear for my people is," he said, "that they will never learn to be fearless and self-possessed. A very little thing frightens them and makes them panicky."

Bumper stored this bit of information away in a corner of his mind. "I must not get panicky even if the others do," he said to himself.

"And another weakness of theirs is that they always do the same thing over and over again," continued the Old Blind Rabbit, "and our enemies know it, and thereby trap them."

"I must never do the same thing twice alike," Bumper reflected. "That's dangerous in the woods."

Many other bits of wisdom fell from the lips of the Old Blind Rabbit, and Bumper remembered all of them.

Of course, he couldn't stay in the burrow forever. Sooner or later he had to hunt with the pack. They went out every day to get their food, and to enjoy the sunshine. So on the fourth day of his coming, when Spotted Tail asked him if he was going to accompany them, he said, yes, and prepared to lead the way.

And on that first day he applied some of the Old Blind Rabbit's wisdom, which greatly increased the respect of his cousins for him. They were feeding on birch leaves and bark in a clearing a long, long distance from the burrow when they were startled by the baying of hounds.

"The dogs and hunters are coming," Spotted Tail exclaimed in great fright. "When they appear we must run to the left."

"Why to the left?" asked Bumper curiously.

"Because rabbits always run that way, making a wide circle to throw the hounds off their track."

"But if you do that you're sure to come back to the starting point, aren't you?" asked Bumper.

Spotted Tail didn't know. He had never given it much thought; but now that Bumper mentioned it he did recall many mishaps where rabbits pursued by the dogs ran plump into the arms of hunters who seemed to be waiting for them.

"It's a simple trick," added Bumper. "They send the dogs after you, and then stand still until you make a wide circle and come back to the starting point. Then they shoot you."

"I don't know," replied Spotted Tail. "But we've always circled around to the left."

"Well," said Bumper quickly, "we're going to run straight ahead today, and then when we have left the hounds behind we'll go back to the burrow in another way."

"But all our people have circled to

(Continued on page 569).

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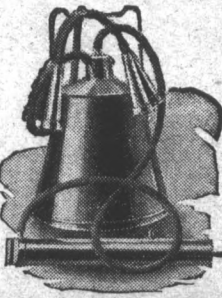
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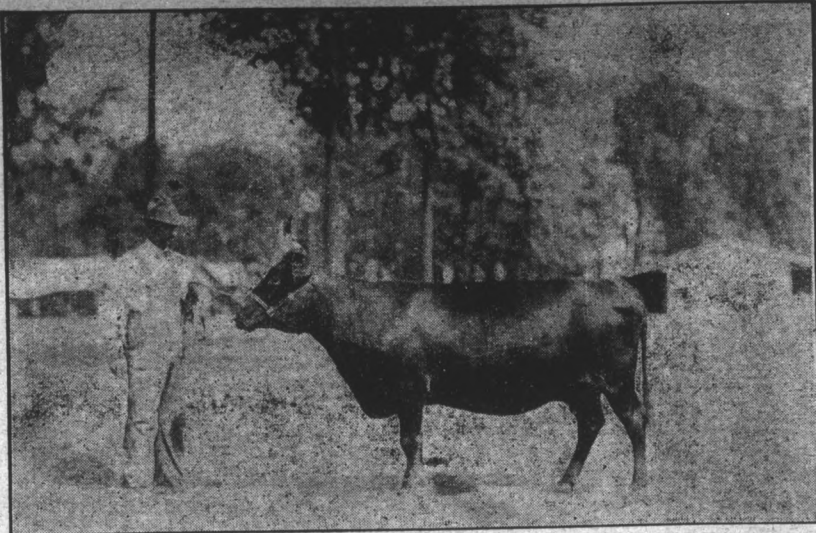


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RATION FOR YEARLING BULL.

Please tell me what would be a suitable ration for a yearling bull. I have ensilage, corn stover, timothy hay, oats and corn. What will I have to get? Osceola Co. W. F. W.

A moderate amount of ensilage is a good feed for a young growing bull, say twenty pounds a day or ten pounds night and morning. The corn stover is also all right for part of the roughage. You could feed timothy hay once a day and corn stover once a day. To the grain ration of oats and corn mix bran, part for part, that is one hundred pounds of corn, one hundred pounds of oats, and two hundred pounds of bran would make a good ration, feeding him a sufficient amount to keep him growing nicely. He ought to have probably six or eight pounds of grain per day. L.

GROUND RYE FOR COWS.

I am writing for information as to the feeding value of ground rye for dairy cows. I have heard that rye was a poor cow feed, but I have no corn; have plenty of rye, some oats, and will feed bran. Will equal parts of rye, oats and bran, with corn fodder and mixed hay make a balanced ration, or would it pay me better to trade my rye for corn? If rye is fed cows or horses, should it be ground fine or coarse? H. K. Allegan Co.

The chemical analysis of rye shows that it is a very good feed, much like wheat. The greatest difficulty is that cows do not like it very well, and they will not eat enough of it for any length of time, but if you mix ground rye, wheat bran and ground oats, and feed with corn fodder and timothy hay as roughage, the results ought to be satisfactory. Rye should be ground fine, otherwise it is not very digestible. It will pay you to feed to freshened cows, after they have grown accustomed to the feed, about one pound of this grain mixture for every three or four pounds of milk a cow produces in a day. If a cow produces better than four per cent milk they ought to have a pound of grain for every three pounds of

milk. If they produce less than four per cent milk then one pound of grain to four pounds of milk. C. C. L.

ENSILING BEET TOPS.

Could you tell me whether sugar beet tops can be put in silo, and how are they put in? Sanilac Co. V. S.

Sugar beet tops can be kept indefinitely in a silo. I have tried this, so I know from experience. We have put them into the silo by running them first through an ensilage cutter, chopping them up, and we have put them in whole. As they are wet they settled down and keep nicely, except that when put in whole they are so loose on top that there is some loss. If you can cover them with corn silage or if you can get some wet beet pulp from the factory to put on top to exclude the air, you can obviate this loss. Otherwise there is no more trouble in ensiling sugar beet tops than there is in ensiling corn. L.

STRINGY MILK.

Can you tell me what is the matter, or what causes milk and cream to look slimy or stringy when pouring it from one dish to another? St. Joseph Co. G. W.

Stringy milk is caused by a bacteria. Of course, sour milk is caused by a bacteria, but a different kind. Lactic acid bacteria causes milk to sour, but the stringy milk bacteria causes it to become stringy while the milk is yet sweet. This bacteria gets onto the cow's teats and falls into the milk pail, and there germinates and develops. It can be done away with by washing the cow's teats and udder after milking, with a weak solution of sulphuric acid. The dairy utensils—skimming cloth, pails, etc., should also be rinsed with water containing a small amount of sulphuric acid. You will only have to give this treatment a few times to obviate the trouble. This bacteria gets onto the cow's udder usually from muddy pastures.



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ENSILOING CORNSTALKS.

I partially filled my silo. The corn was good and well eared, which made very good silage. Now, I still have eight feet of available space in silo, and have four acres of corn in the shock. This I intend to husk. Will it be advisable to put this fodder in the silo after husking, which will be about the end of October? It is Learning green and the stalks were quite green and very leafy when cut. Will it make good silage? Will it need much water when put in? Will it have any effect on the silage which is now in the silo?

Oakland Co.

L. A.

It is entirely practicable to finish filling your silo with your cornstalks after the corn is husked. The only precaution is to use plenty of moisture in filling. You ought to have a nice stream of water running through the ensilage cutter continuously. This will make the stalks none to wet, then they will pack down closely and heat up and keep well. Of course, cornstalks will not make as good a food as the corn would before it was husked, but you get a greater value out of the cornstalks by putting them into the silo than by feeding them dry.

It will in no way affect the silage already in the silo. If there is any silage in the silo that is spoiled probably it will be better to take off some of the spoiled silage and throw it away before you fill it with cornstalks. If you leave this on and put the stalks over it will probably spoil some of the cut stalks, and this spoiled stuff will have to be thrown away, so clean it off before refilling.

L.

RATION FOR WEANING PIGS.

What is the best thing to mix with ground rye on which to wean young pigs when there is no milk available?

Midland Co.

J. M.

If you have no skimmilk at all it would pay you if you could get it without too much trouble, to purchase tankage to mix with the rye. If your dealers do not keep tankage you could purchase it by sending to Chicago for it. Wheat middlings is the best home-grown feed that I know of to feed to young growing pigs, and the more middlings you mix with rye the better. I would mix equal parts of rye and middlings made into a rather thick slop and then if you had a little tankage to add it would make about the best ration you can get where you have no milk. If you can't get the tankage the pigs will do very well on middlings and rye.

C. C. L.

BUMPER THE WHITE RABBIT.

(Continued from page 567).

the left—" began Spotted Tail.

"Come, follow me, straight ahead," interrupted Bumper.

There was surprise and consternation at this order. Old habits were strong, and Bumper was too new yet as a leader to impress all. Some followed him, and others without really intending to do it began circling round to the left.

Bumper and his followers reached home in safety. They easily shook off the dogs, and returned to the burrow without sighting the hunters.

Not so with Spotted Tail and the few older ones who had followed him. They had run plump into the hunters, and while no one of them was seriously wounded by the shots fired at them several limped and showed blood on their coats. The Old Blind Rabbit listened to the accounts of the chase, and then said:

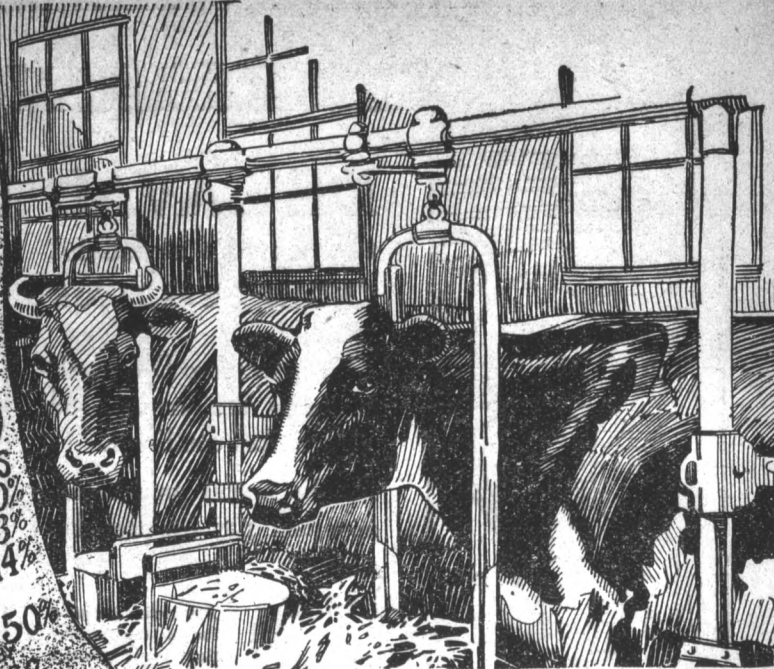
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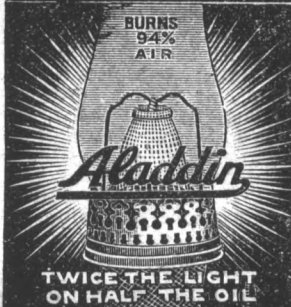
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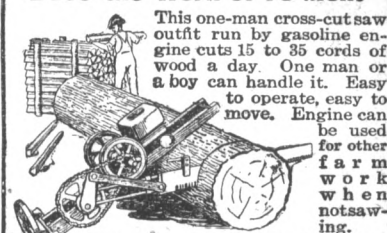
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Awards at the National Dairy Show

Holsteins.

Winning exhibitors: N. Dickinson, Lake Geneva, Wis.; Iowa State College, Ames; A. E. Hulet, Norwich, Ont.; Mayowood Farm, Rochester, Minn.; A. J. Lashbrook, Northfield, Minn.; Inst. for Feeble Minded, Glenwood, Ia.; J. M. Hackney, St. Paul, Minn.; Iowana Farms, Davenport, Ia.; R. E. Haeger, Algonquin, Ill.; E. C. Schroeder, Moorhead, Minn.; Grahamholm Farm, Rochester, Minn.; Egil Boeckmann, White Bear Lake, Minn.; H. Skrei, Glyndon, Minn.; Maxwell Farm, Waterloo, Ia.; G. G. Davis, Columbia, Mo.

Bull 4 yr., Dickinson, 1; Iowa College, 2; bull 3 yr., Hulet, 1; bull 2 yr., Mayowood, 1; Hulet, 2; bull 18-24 mo., Lashbrook, 1; Haeger, 2; bull 1 yr., Inst. Feeble Minded, 1; Mayowood, 2; senior bull calf, Dickinson, 1; Iowana, 2; junior bull calf, Maxwell, 1; Hackney, 2.

Cow 5 yr., Haeger, 1; Schroeder, 2; cow 4 yr., Dickinson, 1; Grahamholm, 2; cow 3 yr., Boeckmann, 1; Haeger, 2; cow 2 yr., Skrei, 1; Haeger, 2; heifer 18-24 mo., Dickinson, 1; Maxwell, 2; heifer 1 yr., Maxwell, 1 and 2; senior heifer calf, Maxwell, 1; Dickinson, 2; junior heifer calf, Hulet, 1; Maxwell, 2; A. R. cow over 5 yr., Davis on Campus Chief Bis. Exhibitor's herd, Dickinson, 1; Haeger, 2; calf herd, Dickinson, 1; Maxwell, 2; get-of-sire, Dickinson on Iowana Sir Ollie; produce of cow, Mayowood on Buffalo Glenda Doede; dairy herd, Haeger; senior and grand champion bull, Dickinson; senior and grand champion cow, Haeger; junior champion bull, Dickinson; junior champion cow, Maxwell.

Brown Swiss.

Winning exhibitors, Hull Bros., of Painesville, Ohio; L. S. Marshall, Leslie, Mich.; W. O. Bohart, Bozeman, Mont.; A. E. Bower, Cleveland, Ohio.

Bull 3 yr., Marshall, 1; Hull, 2; bull 2 yr., Hull, 1; Bohart, 2; bull 1 yr., Bohart, 1; Marshall, 2; junior bull calf, Bohart, 1; Marshall, 2.

Cow 5 yr., Hull, 1; Marshall, 2; cow 3 yr., Bower, 1; Hull, 2; cow 2 yr., Bower, 1 and 2; cow 18-24 mo., Marshall 1 and 2; heifer 12-18 mo., Bower, 1 and 2; senior heifer calf, Marshall, 1 and 2; junior heifer calf, Marshall, 1; Bohart, 2; cow (with record) 5 yr., Bohart; cow (with record) 2-5 yr., Hull on Reuben's Ruth; exhibitor's herd, Bower, 1; Hull, 2; young herd, Marshall, 1; Bohart, 2; calf herd, Marshall, 1; Bohart, 2; get-of-sire, Bower, get of Reuben; produce of cow Bohart, Master's Lady D; senior and grand champion bull, Hull on Gallatin Brown; senior and grand champion cow, Bower on Bettie of Lake View.

Jerseys.

Winning exhibitors, A. V. Barnes, of New Canaan, Conn.; Brookwood Farms, Barryville, N. Y.; Longview Farm, Lee's Summit, Mo.; Ed. C. Lasater, Falfurrias, Texas; F. S. Reynolds, Dayton, O.; B. H. Bull, Brampton, Ont.; E. S. George, Detroit.

Bull 4 yr., Barnes, 1; Brookwood, 2; bull 3 yr., Brookwood, 1; Longview, 2; bull 2 yr., Longview, 1; Brookwood, 2; bull 18-24 mo., Longview, 1; Lasater, 2; bull 1 yr., Reynolds, 1 and 2; senior bull calf, Longview, 1; Bull, 2; junior bull calf, Brookwood, 1; Bull, 2.

Cow 5 yr., Lasater, 1; Brookwood, 2; cow 4 yr., Bull, 1; Lasater, 2; cow 3 yr., George, 1; Longview, 2; cow 2 yr., Barnes, 1; Longview, 2; heifer, 18-24 mo., Longview, 1; Bull, 2; heifer, 12-18 mo., Lasater, 1; Brookwood, 2; senior heifer calf, Reynolds, 1; Longview, 2; junior heifer calf, Longview, 1 and 2; senior and grand champion bull, Brookwood on Leda's Raleigh; junior champion bull, Reynolds; senior and grand champion cow, Lasater; junior champion cow, Longview; exhibitor's herd, Longview, 1; Brookwood, 2; young herd, Longview, 1; Brookwood, 2; calf herd, Longview, 1; Lasater, 2; get-of-sire, Brookwood with Golden Fern's Noble, 1; Longview with Flora's Queen Raleigh, 2; produce of

cow, Longview with Imp. Blue Feather, 1.

Guernseys.

Winning exhibitors, Shorewood Farm, Crystal Bay, Minn.; W. H. Dupee, Santee, Cal.; H. J. Schmidt, Cedar Falls, Ia.; G. Kingston & Son, Waukesha, Wis.; W. W. Marsh, Waterloo, Ia.; Dairyland Farm, Storm Lake, Ia.; John Ebels, Holland, Mich.

Bull 4 yr., Shorewood, 1; Dupee, 2; bull 3 yr., Kingston, 1; Schmidt, 2; bull 2 yr., Marsh, 1; Dairyland, 2; bull 18-24 mo., Dupee, 1; Marsh, 2; bull 12-18 mo., Ebels, 1; Shorewood, 2; junior bull calf, Dupee, 1; Dairyland, 2; senior champion bull, Marsh on Cherub's Prince; junior and grand champion bull, Dupee on Dauntless of Edgemoor.

Ayrshires.

Winning exhibitors, Adam Seitz, of Waukesha, Wis.; J. A. Ness, Auburn, Me.; Wendover Farm, Bernardville, N. J.; Stephen Bull, Racine, Wis.; Woronoake Heights, Woronoake, Mass.; Middlesex Meadows Farm, S. Lincoln, Mass.; Hugh Chisholm, Port Chester, N. Y.; Gossard Breeding Estates, Chicago, Ill.

Bull 4 yr., Ness, 1; Wendover, 2; bull 2 yr., Bull, 1; Woronoake, 2; bull 18-24 mo., Wendover, 1; Middlesex, 2; bull 12-18 mo., Chisholm, 1; senior calf, Seitz, 1; Wendover, 2; junior calf, Seitz, 1; Gossard, 2.

Cow 5 yr., Seitz, 1; Wendover, 2; cow 4 yr., Wendover, 1; Middlesex, 2; cow 3 yr., Middlesex, 1; Gossard, 2; cow 2 yr., Seitz, 1; Middlesex, 2; heifer 18-24 mo., Chisholm, 1; Middlesex, 2; heifer, 12-18 mo., Seitz, 1 and 2; senior calf, Seitz, 1; Wendover, 2; junior calf, Seitz, 1; Wendover, 2; A. R. cow over 5 yr., Wendover, 1; Seitz, 2; A. R. cow under 5 yr., Bull, 1; Gossard, 2; senior champion bull, Ness on Strathglass Cold Chink; junior and grand champion bull, Wendover on Admiral Beatty of Wendover; senior champion cow, Seitz on Cavalier's Kilford Bell 3d; junior champion cow, Chisholm on Strathglass Orange Blossom.

EMMET COUNTY COOPERATIVE COW-TESTING ASS N, No. 1.

THE Emmet County Cooperative Cow-testing Association No. 1, was organized in the office of the Emmet County Farm Bureau at Petoskey, Michigan, Saturday, October 11. This association is the first of its kind in the upper part of the lower peninsula of Michigan. The live stock industry in Emmet county is going largely to dairying, with the Holstein and Guernseys as the predominant breeds. Eight pure-bred dairy bulls have been brought into the county this year, also a number of grade and pure-bred cows. The testing association has twenty-four men signed up, with a number of others who will shortly do so. The following men were elected as directors: H. H. Starmer, Clyde Mörford, Paul Schnelle, F. A. Zerby, F. W. Cook, Edward Cetas and G. L. Hicks. The association is looking for a competent tester and will start operations as soon as the same is obtained.

H. K. V.

EXPLOSIVES FOR FARM USE.

Four books, entitled as follows: "The Use of Explosives in Making Ditches," "Clearing Land of Rocks for Agricultural and Other Purposes," "Clearing Land of Stumps," and "The Use of Explosives in the Tillage of Trees," published by the Institute of Makers of Explosives, 103 Park Avenue, New York City, will be sent free to anyone writing to the above address requesting same.



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We want to send every farmer in this state a big sample of **RYDE'S CREAM CALF MEAL**, the complete food for calves—the most successful substitute for milk.

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"Purchased 8 of your Tank Heaters last Winter, worked very satisfactorily and are well worth their cost. Every Stockman should use one." W. H. Felt, Prof. of Animal Husbandry, Iowa State College, Ames, Ia.

Get a Heater early. Write now for illustrated circulars and dealer's name. **THE WILLS MFG. CO., 56 Seventh St., MENDOTA, ILL.**

When You Write to Advertisers Please Mention This Paper.

Milk Producers' Meeting

(Continued from page 544).

Erf, was delivered in cities at \$3.60 per cwt.

While the early attempts at organization in Ohio failed to gain the advantages hoped for, the dairymen's association recently took on a more promising air. For a time the situation continued to improve, but last year a group of men apparently made up their minds to wreck the farmers' organization. First they advanced the price for milk and then charged that the officers of the association were appropriating unto themselves the margin between what this group of men offered and the price paid by the association. In a short time, however, these men failed and they then owed the farmers \$154,000. These men then declared that the farmers' organization was operating in restraint of trade and that the farmer members were profiteers. Later the officers of the association were arrested at midnight and afterwards indicted. Other farm organizations offered assistance so that good attorneys were secured to defend the indicted officials. While these men were released they are not now allowed by the court to get together as an organization for the purpose of considering milk prices for fear of contempt of court.

Professor Erf holds that in a general way the law of supply and demand works. One of the functions of the producers' organization is to see that this law works freely. In some Ohio cities it has been the habit of distributors and merchants to import powdered milk and secure supplies of fresh milk outside the regular area when there is a shortage, but in other seasons when a surplus occurs the distributors invoke the assistance of the boards of health to impose additional sanitary requirements upon farmers to reduce the quantity of milk delivered by refusing to permit milk supplies from certain farms to enter the cities because of minor infractions of health board regulations.

It is the opinion of Professor Erf that keeping of a cost sheet to know what each cow is doing for its owner and the organizing for the improvement of production and marketing conditions will go far in paving the way for the solution of the dairymen's problems.

The dairymen themselves are largely to blame for the present uneconomic conditions under which they are working, according to D. D. Aitken, president of the National Holstein-Friesian Association. He held that men are not entitled to sympathy unless they make an effort to relieve themselves of their handicaps. He related an instance where a man and wife who twenty years ago were scarcely making a living on a dairy farm near Flint, are now receiving an annual income of over \$1,000,000 in the automobile business. It requires a larger amount of executive ability and skill to successfully operate a farm than to succeed in almost any other line of endeavor. Farmers must learn to create a demand for surplus products and help the consumer to an appreciation of value in the goods they buy.

Mr. Aitken contended that while other industries were offering more attractive salaries, dairying had certain advantages that appealed to many people. In the agricultural towns of Vermont the saving deposits in the banks average \$1,000,000 to every one thousand of population. In Minnesota towns the savings are \$1,250,000 per thousand, while in manufacturing cities it frequently does not average over \$200,000 per thousand.

The officers and board of directors

of the Milk Producers' Association need the moral support of the members in the legitimate enterprises undertaken. Consumers should be educated to feed their children on a liberal milk ration. An increase in the quantity of milk used has been noted in the Detroit area since this organization started its publicity work. Consumers will pay higher prices for milk more readily when they thoroughly understand its relative food value. The association should also urge the production of good milk. The producer who persists in delivering poor milk should be eliminated from the organization.

This meeting showed an unusually fine spirit prevailing among the dairymen of the state, and this notwithstanding the fact that questions vitally affecting their incomes were debated on the floor. These men are convinced of the necessity of maintaining a strong organization. They apparently do not propose to allow minor matters to destroy the efficiency of the institution they have worked so hard to build up.

HISTORICAL DATA WANTED.

HISTORIC sites in Michigan are numerous and important.

Marking these historic spots has been going on for many years. Markers of all kinds have been placed, from the bronze tablet to the statue or memorial building, but nowhere can there be found a complete descriptive list of these memorials.

From frequent inquiries received at their office the Michigan Historical Commission with headquarters at Lansing believes that such a list would be a great convenience to citizens, writers and researchers, and the commission is therefore trying to gather the list.

A feature story about the sites marked in your vicinity would be of historical interest. The items of most interest to citizens seem to be:

1. Significance of site, historic setting.
2. When and by what organization marked. Important features of the occasion.
3. Nature of the marker. Inscription, if it bears one. Picture of the marker.
5. Plans now forming to mark historic sites.
6. Memorials erected to public citizens.
7. Plans for a memorial to the soldiers and sailors of the great war.

SUCCESSFUL SALE.

ENCLOSED find check for \$48.00 for advertisement in Michigan Farmer. Our sale was a great success, the weather was fine, and a good crowd was present. The selling was done under a large tent. Everyone was in good spirits.

The cow, Lady Ophelia of Cornelius 2d, a six-year-old cow, topped the sale at \$580. She is a cow of great capacity, weighing about 1,600 pounds. Joseph Drumheller, Jr., of Bath, Mich., was the lucky buyer. The cow, Laura Korn-dyke Clothilde De Kol, a two-year-old heifer, took second place at \$500. She is bred in the purple, being strong in the blood of Pontiac Korndyke and Pontiac Butter Boy. She also went to Mr. Drumheller. Queen Model Korn-dyke took third place at \$460. She went to George Leffler, of Woodland, Mich. There were fifty-four head sold for \$12,300.

G. F. BALDUF & SON.

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Ask Your Father

if some of his happiest memories do not center around boyhood days spent with his rifle in field and forest.

He doesn't want you to grow up without such golden days.

Some day he is going to bring home a rifle, and is going to train you fully in its use and care.

He is not going to let anyone else do this—he wants the fun of it himself—it is part of your education he need not delegate.

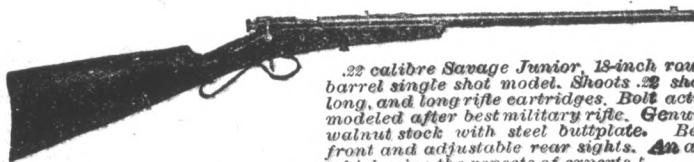
Your future will be safeguarded by such knowledge, and you will have merry times together.

The sturdy, accurate Savage Junior Rifle will please you both. See it at your dealers or write for a catalogue.

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.22 calibre Savage Junior, 13-inch round barrel single shot model. Shoots .22 short, long, and long rifle cartridges. Bolt action modeled after best military rifle. Genuine walnut stock with steel buttplate. Bead front and adjustable rear sights. An arm which wins the respects of experts.

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Hustles Heavy Hogs to Market

Cuts your feeding costs. Have bigger pigs, fatter hogs. Get them ready for market in far less time. You can do it. Prove at our risk that Milkoline is the surest farm money maker known.

Guaranteed Trial Offer We will ship you ten gallons, half a barrel, or a barrel. Take 30 days—feed half to your hogs and poultry. If not absolutely satisfied return the unused part and we will refund every cent you paid us—no charge for the half you used.

Milkoline has a base of Pure Modified Buttermilk to which essential fats and acids are added. Milkoline comes in condensed form. Will keep indefinitely in any climate. Will not mold, sour or rot. Flies will not come near it.

2¢ a Gallon For feeding mix one part Milkoline with 19 parts water or swirl and feed with your usual grain feeds. It helps keep hogs healthy, their appetites keen and makes more pork per bushel of grain. Stop buying buttermilk of uncertain quality. Use Milkoline and you will always be sure of uniform acidity, and at a cost of 2¢ a gallon or less when fed as directed. Many users say Milkoline saves them one-third on feed bills because it makes their hogs and poultry assimilate all their feed.

1400% Profit W. H. Graham, Middleton, Mo., writes that he got an extra \$420 worth of pork from \$30 worth of Milkoline in a sixty day feed. He made an actual test of this lot of hogs in comparison with another bunch. We could quote hundreds of testimonials, but the best proof is that we legally guarantee Milkoline to be satisfactory or refund your money, (you are the judge) and refer you to S. W. Blvd. Bank of Kansas City, Mo., and R. G. Dunn & Co. **MILKOLINE is just as good for Poultry as for Hogs.**

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No charge for hogs or barrels. Prices F. O. B. Nearest Dealer or Kansas City, Mo. 350 Creamery Bldg. **THE MILKOLINE MFG. CO. KANSAS CITY, MO.**

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A bull calf, sired by our imported "EDGAR of DALMENY"

recently sold in Scotland at the Perth
Bull Sale for the record price of 2,100
guineas, or \$10,584.00 in our money.
This goes to show the quality of the

ABERDEEN ANGUS

that Mr. Scripps is breeding. He enjoys see-
ing good stock on "Wildwood" and believes that
THE BEST IS NONE TOO GOOD.

"Edgar of Dalmeny" won the Michigan Grand
Championship last September at the Michigan
State Fair and was a winner in his class at the
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We have a few females with calves at foot and
re-bred to "Edgar of Dalmeny" that Mr. Scripps
has consented to sell to reduce the fast-grow-
ing herd. Write To

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

WOODCOTE ANGUS

1919 Winnings to Date				
Mich. State Fair	12 1sts	2 cham.	1 gd. ch.	
N. Y.	9 1sts	2 "	1 "	
West Mich.	11 1st	3 "	2 "	
Saginaw	10 1st	4 "	2 "	

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WOODCOTE STOCK FARM, Ionia, Mich.

Cloverly Angus, 5 cows with calves, re-bred; 2 bred cows;
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Young bulls of quality for sale,
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We have a fine bull calf—worth the money.
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2 bulls, 2 bull calves. Priced to sell.
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Bennie of the Ridge No. 41837. His dam is Trixey of
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GUERNSEYS must reduce herd, so offer
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Guernsey Bulls for sale from 2 months old to year-
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A. HATT & SON, Napoleon, Mich.

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We have what you want in **BULL CALVES**, the
large fine growthy type, guaranteed right
in every way. They are from high producing A. R.
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Registered Holstein: bull calf born Nov. 17, 1918.
A good individual straight and thrifty.
His dam an untested daughter of a 24½ lb. cow. Sire's
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Registered Holstein heifers bred to a double grand
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\$100 Liberty Bonds or terms get 6 mo. old ¾ white
good individual gdson of Flint Heng. Sr. 27.09
lb. butter, 561 lbs. milk and cal. F. A. 20.12 lb. butter
512 lb. milk. M. L. McLAULIN, Redford, Mich.

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The young bulls we have for sale are
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yearlings. Consisting of 10 richly bred heifers and
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This is a great foundation for a herd and a fortune.
It also have 8 cows, two to five years old, fresh or soon
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His dam's record is 1344.3 lbs. butter, 23,421.2
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One of his sons from our good record dams will
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A doz. fine, large cows for sale from three to six years
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Herd Headed by

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A 32 lb. grandson of Michigan's great 35 lb. champion
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Some from 25½ lb. dams 11 cows bred to 33 lb. sire.
Will separate if desired. Easy terms. Also have
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Bred heifers, bull and heifer calves of the choicest
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LILLIE Farmstead Jerseys. A few heifers bred to
L freshen this fall, also yearling heifers; and two or
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chix. IRVIN FOX, Allegan, Mich.

The Wildwood Jersey Farm

Bulls for sale by Majesty's Oxford Fox 134214 and Em-
inent Lady's Majesty 150934, and out of R. of M. Ma-
jesty dams. ALVIN BALDEN, Capac, Mich.

Jersey Bulls For Sale From R. of M.
Lad.-Raleigh-St. Lambert breeding. Meadowland
Farm, Waterman & Waterman, Ann Arbor, Mich.

Bulls ready for service from our herd bull Marguerites
B. Premier, gdson, of Pogi's 99th of Hood Farm, and cows
now on test for R. of M. Smith & Parker, Howell, Mich.

HARWOOD HEREFORDS

Young stock both sexes for sale.

"Keep On 508019" heads the herd. Write us
your wants. Visitors welcome.

JAY HARWOOD, Ionia, Mich.
Farm six miles south of Ionia.

Herefords Polled and Horned blood lines
embrace Fairfax. Polled Per-
fection and Prime Lad 9th breeding. Prices reasonable.
COLE & GARDNER, Hudson, Mich.

What
does it
cost to
fill the
milk-pail?



JERSEYS

IT'S not how much milk you get, but how much it costs you to get
the milk that counts. Jerseys feed for their well-rounded udder
—not beef and bone.
Jersey Milk is of the richest quality with a butter fat average of
5.37%. Jersey milk, Jersey butter and Jersey cheese sell for more
on the markets.

Jerseys are adaptable to any climate. They are an asset to their
owners, for they mature earlier for milking and are still producing
long after other cows have gone dry. Let us tell you more about
Jerseys. Write for our free literature.

THE AMERICAN JERSEY CATTLE CLUB
322-M W. 23rd St., New York, N. Y.

O. I. C. BOARS FOR SALE

One of the Best Herds in Michigan

Big type, growthy boars of all ages. I ship C. O. D., pay express and reg-
ister in buyer's name. If you want a real choice boar, guaranteed right
in every way, write me.

J. CARL JEWETT,

R. 5, Mason, Michigan.

Herefords Bob Fairfax 494027 at head of herd.
Stock for sale, either sex, polled or
horned, any age. Priced right. EARL O. McCARTY,
Sec'y. H. B. Ass'n. Bad Axe, Mich.

HEREFORDS: young stock of either
sex for sale.
RALPH S. SMITH, Kewadin, Mich.

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

For Sale Shorthorns of Quality Scotch and
Scotch Topped descendants of Archers
Hope, Avondale, Maxwellton Sulton and White Hall
Sulton. Model Type, by the Oecola Co. Shorthorn
Breeders Ass. John Schmidt, Sec. Reed City, Mich.

BIDWELL SHORTHORNS

For Beef and Milk

Registered bulls, cows and heifers. Good Scotch and
Scotch-Topped for sale. In prime condition. Modern
sanitary equipment. Herd under state and federal
supervision. Farm 10 minutes from N. Y. C. depot,
1 hour from Toledo, Ohio. Automobile meets all
trains. Write

BIDWELL STOCK FARM

Box B, Tecumseh, Mich.

Richland Stock Farm

SHORTHORNS

HOME OF THE MICH. CHAMPIONS
We offer for sale a few good dual pur-
pose cows with calves at foot. Also
two three year old bulls suitable for
range purposes. We invite inspection.

C. H. PRESCOTT & SONS,

Office at Tawas City, Mich. Herds at Prescott, Mich.

Ionia Co. Breeders Ass'n

Have for sale Reg. Shorthorns, Herefords, Angus,
Holsteins, Jersey, Red Polls and Brown Swiss Cattle.
Shropshire, Hampshire and Rambouillet sheep.
Poland China and O. I. C. swine.

FRED W. BRICKLEY, Sec., R. 3, Ionia, Mich.

Shorthorns New list, 27 bulls; 28 females. Feb. list
all sold. Central Mich. Shorthorn
Breeders' Ass'n., Oscar Skinner, Sec'y., Gowen, Mich.

NO STOCK for sale at present. Kent Co.
Shorthorn Breeders' Assn.
L. H. LEONARD, Sec., Caledonia, Mich.

SHORTHORNS A young Mary cow and
calf also a young bull for
ale. Louis Bubbitt, Williamston, Mich.

Meadow Hills Shorthorns—For sale females
of all ages, including one roan bull
ready for service. Geo. D. Doster, Doster, Mich.

MILKING SHORTHORNS. Clay
bred
bull calves. Davidson and Hall, Tecumseh, Mich.

Special Offer Shorthorns—Cows \$250 to \$300.
Wm. J. Bell, Rose City, Mich.

SHORTHORN BULL CALVES
FOR SALE. Chas. Metzel & Sons, Ithaca, Mich.

Milking Shorthorns of best Bates breeding 2
bulls 7 mo. old and 2 heifers
3 and 7 months old for sale. E. H. Kurtz Mason, Mich.

Milking Shorthorns No stock for
sale.
ROSEMARY FARMS, Williamston, Mich.

For Sale Several choice young Shorthorn cows and
heifers. Airdrie Duchess and Rose of Sharon
families. E. S. Batchelor, R. 6, Howell, Mich.

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

Shorthorn Bull calves for sale, 4 to 17 months old
dams are good milkers.
FRANCIS BENNETT, R. 3, Big Rapids, Mich.

Red Polled Bulls For Sale

also cows and heifers. G. A. Calhoun, Bronson, Mich.

HOGS

Registered Berkshire Boars: ready for service. A few
R. gilts and sows bred for May and June farrow. Also
spring pigs. CHASE STOCK FARM, Mariette, Mich.

Berkshire boars for sale. Satisfaction
guaranteed also Ancona cockerels. Prices
right.
JOHN YOUNG, Breckenridge, Mich.

DUROC JERSEYS Boars sired by a son
of King the Col.
E. D. HEYDENBERG, Wayland, Mich.

DUROC BOARS
ready for service; excellent breeding and individuality.
The large growthy kind, also Aug. & Sept. boar pigs,
prices very reasonable. RUSH BROS.,
Oakwood Farm, Romeo, Mich.

DUROC JERSEYS

CAREY U. EDMUNDS, Hastings, Mich.

DUROC BOARS
of size, quality and breeding. All are sired by State
Fair Winners. Come see herd.
NEWTON BARNHART, St. Johns, Mich.

Duroc Opportunity

What would the earning capacity of a Brook-
water Boar be in your herd? A mid-west breeder
states that the Brookwater boar he used added
from \$75 to \$100 to every gilt bred to him.
It paid this man to use one of our boars it will
pay you.

We have several that we are offering at prices which
appeal to the small breeder who must of necessity
be a conservative buyer. We have a few that are
good enough to be used in high class herds at
prices in keeping with their individuality and
breeding. Money invested in a good herd boar
very speedily increases the value not only of
what you sell but what you keep. Send for price
list or better, visit the farm.

BROOKWATER FARM, Ann Arbor, Mich.
HERBERT W. MUMFORD, owner,
J. BRUCE HENDERSON, Manager.

FREE DUROCS

To introduce the merits of our pure bred Durocs,
we will give the following away.

No. 1. sow pig 8 weeks or over for heaviest pig
either sex purchased from us, weight reported at
9 mos. of age.

No. 2. Boar 8 weeks or over for largest order of
of 8 weeks weaning pigs taken by one customer
before Jan. 1, 1920

No. 3. Gilt bred to farrow for largest order of 6
mos. or over pigs, 1 not less than \$200 before
March 1, 1920.

All ages and both sex for sale by Satisfaction
10th 104971 and a grandson of Orion Cherry King.

We ship C. O. D. and guarantee satisfaction.

EAGER BROS., HOWELL, MICH.

Mr. Boar Buyer. The best bargains in the state
type and price considered, is at Michigan Farm.
All ages. Sired by Panama Special. Brookwater
Orion Specialty, and the Principle 19th. Satisfaction
guaranteed. O. F. Foster, Mgr., Pavilion, Mich.

Duroc spring boars. Sired by Orion Cherry King
Col. 2nd, first aged boar at State Fair. These
boars priced reasonable. W. C. Taylor, Milan, Mich.

Registered Duroc Boars

We have a choice lot of spring boars, sired by Michigan
Cherry Col. No. 18478. Ira Jackson selected this boar to
head our herd. Our prices are within every farmer's
reach. The Jennings Farms, Bailey, Mich., B.F.D. No. 1

Duroc Jerseys Two good yearling boars that
are good enough to head the
best herds in Michigan, also spring boars large enough
for service. Sired by the Grand and Junior Champion
boars. F. J. DRODT, R. 1, Monroe, Mich.

Duroc Jerseys For sale: spring and fall pigs
of both sex.
CHAS. BRAY, Okemos, Ingham Co., Mich.

Duroc Jerseys July pigs \$20 for one or \$35
a pair, either sex.
J. D. MONTGOMERY, Fairgrove, Mich.

Pure bred Duroc Jersey, fall pigs both sexes big bone
type. Reasonable prices, send your orders early.
ORMAL J. GINGELL, R. 1, Box 17, Orion, Mich.

Raise Chester Whites

Like This
the original big producers



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

Reg. Chester Whites, Petroleum Giant breeding.
8 week old pigs \$15.00. Regis-
tered free. R. L. WITTER, Breckenridge, Mich.

THE WORLD'S CHAMPION
big type O.I.C.S. Stock of all ages for sale. Herd
headed by Calloway Bdd, the World's Champion O. I.
C. boar assisted by C. O. Schoolmaster, Grand Cham-
pion boar of Michigan, New York and Tennessee state
fairs. Also, C. O. Giant Buster, undefeated Senior
boar pig wherever shown and Grand Champion of Ok-
lahoma state fair. Get our catalogue of Grandell's
prize hogs, Cass City, Michigan.

O. I. C. and Chester White Swine

Strictly Big Type with quality. Spring pigs of March
and April farrow. A choice lot of boars. Will only
spare a few more gilts at present. Will ship C. O. D.
and record them free.
Newman's Stock Farm, Mariette, Mich. R. No. 1.

Selling the Farm Piecemeal

By Lee Hilco

I HAVE seen a lot of farms that are being sold piecemeal, though their owners don't seem to be aware of the fact. They think they are keeping their farm in their own possession, but in many cases they have sold quite a chunk of it already. Then, again, it isn't such an easy matter as it appears at first thought to keep from selling some of the farm as we go along. It is a pretty good farmer that has developed a system that prevents this fully.

Every crop we grow takes a certain amount of plant food from the soil—a fact we all recognize. There is plant food stored in the soil that gradually becomes available to meet this demand, but under ordinary conditions this is insufficient to make up the loss, and if the cropping is continued a time must come when the plant food available each year will not produce a paying crop—the farm will have been about all sold.

Farmers have learned that it pays to put back on the farm as much of the plant food removed as they can conveniently, but still a good many neglect to do it that know, and some others will not give the matter much consideration. These go right along selling their farm's fertility, which measures the farm's real value. Farm buyers are coming to take these things into consideration and a wise buyer will find out how the farm has been treated and whether a large part of the fertility has been sold before he invests. He can build up the soil in time but he knows that he will be the loser for the time it takes him to do this.

Now to keep the farm from losing any of its fertility we will be obliged to replace somewhat more than the manure that stock eating the crops will produce, but many farmers do this by judicious feeding of boughten feeds, as well as by growing legumes. Alfalfa is a very strong soil builder, for it not only takes nitrogen from the air and stores it in its roots to become a part of the soil, but it is very rich in plant food which it returns, and when we buy alfalfa to feed we are buying a valuable fertilizer at the same time—one that contains about fifty pounds of nitrogen, ten pounds of phosphoric acid, and forty pounds of potash to the ton. If we buy bran to feed with it we get with each thousand pounds twenty-six pounds of nitrogen, twenty-nine pounds of phosphoric acid, and sixteen pounds of potash. Fattening animals make the greatest use of the carbon in the feeds and return almost ninety per cent of the plant food, and while dairy cows return a low percentage direct—about sixty per cent—where the milk is fed on the farm and only the butterfat sold the percentage returned altogether is high. From these ordinary farm feeds we can see how we can supplement the fertilizer returned to the farms and get profit from the use of the feed. There are other feeds as rich in plant food as these, and feeds differ greatly in this. Cottonseed meal contains about the same phosphoric acid and potash, but nearly three times the amount of nitrogen, and this feed would be worth over two dollars a hundred pounds for the plant food returned if the manure was taken care of properly so its plant food would not be lost.

Then the value of the manure to the soil is not all in the plant food that is returned, for humus is necessary to profitable production on any soil, and from the manure we get this humus. There are sources of plant food that are unavailable that the chemical action of the gasses released by the decomposition and fermentation of the

manure make available that would not be available but for the manure, or at least not so quickly. Then the manure makes the soil more suitable for the roots to penetrate and helps to hold moisture, thus in a mechanical way, assisting in production.

Where we systematically work to improve the soil continually we are adding to our farm instead of selling it off piecemeal. It is like depositing money in the bank, but it is where we can be sure to draw it when we want it, and no absconding bank cashier, or bandits, or panics, can touch it.

ADVANTAGES IN HANDLING UNIFORM TEAMS.

THERE is great advantage to the farmer to have all his work horses of similar size, condition and temperament. Then they can be hitched in any combination without having to tie one back, use a jockey stick, a gag or urge one with the whip. You frequently see one horse in a team prancing all day long. If cultivating this frays the driver's temper outrageously. It makes hired hands quit their jobs. Such a horse is equally objectionable in a multiple hitch, a constant source of agitation and unsteadiness. A team that is made up of all prancers or one composed entirely of laggards is much more desirable than a mixture of the two sorts. One can gradually calm down a bunch of prancers, or enliven a sluggish outfit with a surprisingly short course of vigorous treatment. But to calm one horse and hurry another in close proximity is beyond the skill of the average farm hand.

The effort to secure uniformity is certainly well paid for in results. It costs little. If one is purchasing his work stock from time to time, it is commonly as cheap to pick the disposition he wants as to take some other. If he gets a bad actor the animal is usually salable at first cost. The breeder has a distinct advantage. The kind, active, willing and durable old mare has populated many a farm with a class of work stock as alike as peas from the same pod in appearance and behavior. They can be hitched anywhere and worked in any way with entire satisfaction. They come nearly doing their own driving after a few rounds at any new job. And a uniform lot of horses gain for their owner considerable distinction and respect. The fact is that such a characteristic is the exception rather than the rule throughout the countryside. The real horseman, with horses all alike, becomes locally famous for his distinctive teams. Stock which he has developed is deemed desirable. He has accomplished something at once unusual and practical, and men respect him for it. And best of all, he himself enjoys the practical advantages of his uniform lot of work horses.

FARM SALE PRICE RAISED.

THAT the sale price of farms is usually raised enough by landscape gardening around the house to pay for the cost many times over is the opinion expressed by I. T. Pickford, Extension Specialist in Horticulture at the Michigan Agricultural College.

In response to inquiries from various parts of the state in regard to effective landscape work for the farm home, Mr. Pickford is planning demonstration work for several counties. The planting of public highways will be taken up at the same time, with the idea of beautifying Michigan roads. Nurseries of the state are cooperating in the work by agreeing to furnish trees and shrubs.

DREW LITTER CARRIERS



Drew Fixtures
Increase your milk supply by keeping your stock healthy and contented. They keep your barn clean at the lowest cost.

Drew Litter Carriers

like all members of the "Drew Line" have exclusive features of design and construction which add greatly to their value to the dairy farmer. Simple and especially strong where the strain comes. They lift easily and run smoothly.

There is practically no limit to the service that Drew Carriers will give. Farmers who use them look upon them as permanent fixtures—everlasting in their strength and durability—indispensable Labor Savers.

Clean Barns Mean More Profits

Drew Barn Fixtures—Stalls, Stanchions, Litter Carriers, Waterbowls, Feed Carriers, Hay Carriers, Bull Pens, Ventilators, Bull Staffs, Barn Door Hangers—can help every farmer increase his profits. You can use them whether you are milking registered or grades.

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WEDNESDAY, NOV. 5 1919 ANNUAL SALE OF BIG TYPE POLAND CHINAS

AT SALE PAVILION ON FAIR GROUNDS, IONIA, MICH.
47 HEAD OF REGISTERED POLAND CHINAS 47
Sale Will Begin At 1:00

Choice offering of real Big Types; every individual carefully selected and grown out for future usefulness as a breeder. Every one guaranteed and registered free in buyer's name. Some of the choicest boars and gilts in all Mich. go in this sale. This is your opportunity. Write for catalog.

Auctioneers: Col. Ed. Bowers, South Whitley, Ind. Col. E. E. Slye, Ionia, Mich.
Wesley Hile, R. 6, Ionia, Mich.

HOGS

Big type O. I. C. boars of good size and quality also a few choice gilts. Will ship C. O. D. and register free. Elm Front Stock Farm, WILL THORMAN, Prop., Dryden, Mich.

O. I. C. 20 Choice Young Boars and a few fine gilts. Clover Leaf Stock Farm, R. 1, Monroe, Mich.

O. I. C's. I will ship C. O. D., pay the express and record free of charge every boar sold in Oct. and Nov. F. C. Burgess, R. 3, Mason, Mich.

O. I. C's. Last spring boars all sold. Have an extra good lot of last spring gilts, good fall pigs not akin. Good stock, registered free, 1/2 mile west of Depot. OTTO B. SCHULZE, Nashville, Mich.

POLAND CHINAS

Spring boars and gilts for sale sired by our 1000 lb. boar at 24 months old and their dams weigh 700 lb. These are the best lot of young boars and gilts we have ever raised.

We can furnish pairs and trios not related, inspection invited.

ALLEN BROS.
PAW PAW, MICH.

Boars also sows and pigs. Real Big Type Poland B. Chinas. Bred big for 25 years. Sired by Mich. B. B. by Giant Buster, litter 14 out of Mow's Miss Queen 2nd, some breeding, also by Butler's Big Joe by Rust's Big Joe, out of a Wonder Queen, not said. Write us your wants, we will treat you right, our prices are low. J. C. BUTLER, Portland, Mich.

SALE—72 MEDIUM P. C.

All ages. Nov. 12, 1919. Tony B. Fox, Pawamo, Mich.

LARGE Type P. C. the largest in Mich. Spring boars now ready to ship. Boars for the breeders and boars for the farmers. Come and see the real large type with quality. Free livery from Parma furnished visitors. Look up my exhibit at the Great Jackson Co. Fair, Sept. 8th. to 12th, expenses paid if not as advertised. W. E. Livingston, Parma, Mich.

Big Bob Mastodon Sire is Caldwell Big Bob Champion of the world, his dam's sire was the Grand Champion at Iowa State Fair, Boars ready to ship. C. E. Gannant, Eaton Rapids, Mich.

L. S. P. C. Ten husky spring boars. Well bred and well fed ready to ship. F. T. Hart, St. Louis, Mich.

For Sale Medium T. P. C. Hogs

All sizes. J. E. Mygrants, St. Johns, Mich.

Big Type P. C. Spring Pigs

Either sex. A. A. WOOD & SON, Saline, Mich.

Miller Meadows L. T. P. C. Ready to ship immune. None better in 3' inch. Write or come and see. 2 1/2 miles west of Marshall. Clyde Weaver, Ceresco, Mich.

P. C. Boar Long bodied, heavy boned, with best of breeding. Satisfaction guaranteed. R. W. MILLS, Saline, Mich.

Two gilts for sale, sired by C. A. King Joe. Dam is sired by Great Big Half Ton, by Big Half Ton and out of a Dishier's Giant Sow. (Breeding.) Bred to Monster Big Bob by Lukan's Big Bob (same breeding as the Grand Champion of the World, Caldwell's Big Bob). A very valuable litter to possess. Fall pigs farrowing now. Book orders early. C. A. Boone, Blanchard, Mich.

BIG TYPE POLAND CHINAS

with quality, that make big money for buyers. Pigs of both sex, of different ages; and bred sows for sale. Write or call anytime. G. A. BAUMGARDNER, R. 2, Middleville, Mich.

Additional Stock Ads. on Page 575

LATEST MARKET REPORTS

SECOND EDITION.

The markets in this edition were revised and corrected on Thursday afternoon, October 30.

WHEAT.

There is still some speculation as to what effect the removal of the wheat embargo will have upon the marketing of this grain. Prices remain firm although the market is fairly well supplied for current requirements. The acreage seeded to winter wheat is considered on a pre-war basis, while fall plowing in the spring wheat territory is below normal. The visible supply increased 1,581,000 bushels during the past week. One year ago No. 2 red wheat was quoted at \$2.23½ on the local market. Present Detroit prices:

No. 1 red	\$2.27
No. 1 mixed	2.25
No. 1 white	2.25
No. 2 red	2.24
No. 3 red	2.20

CORN.

Several factors have aided in the strengthening of the corn market. The farmers are not selling liberally, due to the extreme pressure of fall work. Inclement weather has further restricted delivery from farms. The shortage of cars is a considerable handicap to trading and causes marketing to be a little "spotted." Stocks are low and exports from Argentine are expected to run below normal. Rumors that Germany had negotiated a loan strengthened Chicago's market Wednesday. The visible supply has scarcely changed since a week ago. At this date in 1918 No. 3 corn was quoted at \$1.35 on the local market. At Chicago No. 3 mixed corn is quoted at \$1.41@1.42; No. 2 yellow \$1.42@1.42½; December \$1.27½; May \$1.23½. Detroit prices are as follows:

No. 3 corn	\$1.46
No. 3 yellow	1.48
No. 4 yellow	1.46
No. 5 yellow	1.45

OATS.

The oat market is firmer in sympathy with corn. Eastern shippers were taking this grain early in the week. The slow movement of the grain from country places has been a bullish factor. The visible supply shows a decrease of 78,000 bushels. One year ago standard oats were quoted locally at 72c. Present Detroit prices are:

No. 2 white	76
No. 3 white	74½@75
No. 4 white	73¾@74

RYE.

This cereal has recovered some of last week's loss. Investment buying has been a strengthening factor. Eastern brokers are taking the grain. Cash No. 2 is quoted on the local market at \$1.36½ per bushel.

BARLEY.

Active trading has resulted in a higher level of prices. In the east commission houses are investing in this grain. Prices on the local market have advanced to \$2.60@2.75 per cwt. for cash No. 3.

BEANS.

The bean market is weak and inactive. Rumors persist to the effect that some of the big jobbers have sold short and are thereby making impossible an early recovery of the market. Many feel, however, that when the reaction comes it will carry the market well above the present level of prices, so the majority of the farmers who were not obliged to sell early are inclined to hold. The Detroit Board of Trade has marked cash beans down to \$6.75 per cwt. In New York the trade is dull and easy with domestic white beans of choice variety quoted at \$7.75 and do common to fair \$7@7.50 per cwt. In Chicago prices are easy and buying is in small volume. Pea beans hand-picked, choice to fancy are quoted there at \$7.25@7.75; red kidneys at \$12@13.

SEEDS

The tone of this market is a little easier with prices slightly lower. At Detroit prime red clover is now quoted at \$30.50; December \$29.50; alsike \$29; timothy \$5.50.

FEEDS.

Feed prices are ruling steady with last week as follows: Bran \$45; standard middlings \$49@50; fine middlings

\$59; coarse corn meal \$60@61; cracked corn \$65; corn and oat chop \$53@54 per ton in 100-lb. sacks.

HAY.

Trading is steady and firm. Detroit quotations are: No. 1 timothy \$28.50@29; standard and light mixed \$27.50@28; No. 2 timothy \$26.50@27; No. 1 mixed and No. 1 clover \$24@25.

Pittsburgh.—Receipts of good hay continue light. Prices are steady as follows: No. 1 timothy \$29@29.50; No. 1 clover mixed \$30@30.50; No. 1 clover \$31.50@32.

POTATOES.

Growers in Wisconsin are receiving slightly more at warehouses than are Michigan growers, according to the Bureau of Markets report. In the sister state farmers are receiving from \$1.80@2 with the majority going at \$1.90@2 per cwt. for U. S. No. 1 round whites in bulk, while in Michigan the price quoted is \$1.60@1.75, with the majority selling at \$1.60@1.65 for the same grade. Detroit prices are firm and slightly higher, with U. S. No. 1 Michigan round whites selling at \$4 per 150-lb. sack. The same grade brings \$3.85@4 per 150-pound sack in Cleveland; \$3.90 in Pittsburgh, and \$2.35@2.45 per cwt. in Chicago.

APPLES.

The local market is feeling the effects of shipments from both the east and west. Advertised apples from the northwest are selling readily where home-grown stock moves slowly. At Detroit Michigan A-2½-inch Baldwins

and Greenings are selling at \$7.50@7.75 per bbl. Bushel packed lots of various varieties, fancy grade, are now bringing \$2.25@2.75. Fancy Michigan Baldwins, Greenings and Twenty-ounce are quoted at \$8.25@9 per bbl. in Chicago.

BUTTER.

Butter prices are held quite firmly. Export buying continues notwithstanding the fact that the longshoremen's strike prevents the movement of stock out of the country. Local prices are slightly firmer. Fresh creamery is jobbing here at 60c and in one-pound bricks at 62@63c. The Chicago market is higher with creamery stock at 50@65½c. In New York the range is from 60@70½c, and western creamery extra brings 71c in Philadelphia.

EGGS.

Eggs are jobbing in Detroit at 60@63c per dozen, according to quality, with firms buying well-graded and carefully packed lots from farmers at 71c, cases included. The Chicago market is somewhat unsettled with firsts quoted at 57½@58c; ordinary firsts 50@52c, and storage packed firsts at 60c. An irregular trade is reported at New York, with nearby western stock ranging from 70@95c. In Philadelphia the price has advanced to \$20.10 per case for western extra firsts.

CHEESE.

This market is strong and prices are firmly held. The relative cheapness of cheese in comparison to the price of butter is encouraging holders to ask

for higher prices. Production is decreasing. At Detroit Michigan flats June make are now quoted at 33½c and do new make at 31½c; single daisies 32c; bricks 33c. The New York market is steady with whole milk flats at 31@33½c. Full milks bring 31@31½c on the Philadelphia market.

WOOL.

While the dearth of fine wools has sent agents of the manufacturers to every corner of the world for additional supplies, medium grades have been piling up. What was to be done with these had become a matter of concern to holders, but it now appears that a demand for three-eighths blood and near related grades is showing itself in the comparatively heavy transfers in Boston the past week. Approximately 250,000 pounds of the above grade went under the hammer there at 68c per pound, the lowest price paid for the grade since the signing of the armistice.

DETROIT CITY MARKET.

Inclement weather and the finish of the season for summer crops have reduced the number of farmers appearing at the city markets. Potatoes are the principal commodity offered and are selling from \$1@1.65 per bushel. Fancy apples are selling slowly at \$3@3.50 per bushel, and apples of good average quality at \$2@2.75; No. 2 at \$1.50@1.75; carrots \$1@1.25; grapes at \$3.50; onions \$2.50; parsnips \$1.50@1.75; keifer pears at \$2@2.50; live hens 28c; heavy springers 30c; light springers 25@26c; fresh eggs 62c.

NEW YORK PRODUCE MARKET.

Butter.—The market is beginning to show signs of sensitiveness, which is very natural under the conditions that prevail at the present time. The price of butter is high, deliveries are uncertain because of the continued strikes among longshoremen and the pressmen, butter is scarce and local demand is becoming somewhat uncertain. The consumer up until the present time has apparently been willing to pay an enormous price for his butter. At present, however, he is beginning to curtail his purchases. Export demand continues to develop strength and it is reported that Belgium has purchased several million pounds of butter for future delivery. Production seems to have about reached the low mark, as some sections are beginning to show an increase. Receipts were somewhat higher this past week. The increase, however, was due principally to the fact that 17 cars of Canadian butter and 20 cars of interior storage butter were received. The price of butter advanced one cent on Monday. That advantage was lost on Thursday but was recovered on Friday and established quotations that day were as follows: Extras 70c; higher scoring than extras 70½@71c; firsts 59@69c; seconds 54@57c.

Eggs.—The receipts of eggs have decreased materially this week but as the price of eggs is curtailing the consumer's purchases the market gained no strength. On the whole the market can be said to be weak and irregular. The quality of the eggs being received is generally poor. It is expected that as soon as the strike situation becomes better there will be large shipments of eggs to European countries which will draw materially on the stocks in local cold storages. Quotations are: Firsts 61@64c; extra firsts 65@68c; extras 69@70c.

Poultry.—Receipts of live poultry have been great and consumption following the Hebrew holidays, has been comparatively small. As a result, there has been a natural weakening of the market. Prices of all classes of poultry have decreased.

MANAGERS OF LIVE STOCK SHIPPING ASS'NS TO MEET.

The managers of local cooperative live stock shipping associations of the state are to meet November 6-7 at Lansing to assist in outlining the work for the coming year, and to establish a uniform system of business. This meeting is called by E. E. Compson, manager of the Michigan Live Stock Exchange.

Live Stock Market Service

Reports for Thursday, October 30th

BUFFALO.

The market today transferred pigs at \$14 and other grades at \$15. Lambs brought \$14.75@15 and calves \$21.

DETROIT

Cattle.

Receipts 2,623. Market steady. Best heavy steers \$12.00@13.00. Best handy wt bu steers 9.50@10.50. Mixed steers and heifers 8.50@9.00. Handy light butchers 7.50@8.00. Light butchers 6.00@7.00. Best cows 8.50@9.00. Butcher cows 7.00@7.50. Cutters 5.50@6.00. Canners 5.00@5.25. Best heavy bulls 7.50@8.00. Bologna bulls 6.50@7.00. Stock bulls 5.50@6.50. Feeders 8.50@9.50. Stockers 7.00@8.75. Milkers and springers \$75@150.

Veal Calves.

Receipts 1,618. Market dull. Best \$18.00@19.00. Receipts 15,789. Market steady. Best lambs \$14.00@14.25. Fair lambs 12.00@13.50. Light to common 8.00@11.00. Fair to good sheep 6.50@7.00. Culls 3.00@5.00.

Hogs.

Receipts 7,491. Market 10c higher than Wednesday. Mixed hogs \$13.75@13.85. Pigs 13.00.

CHICAGO.

Hogs.

Estimated receipts today are 34,000; holdover 5,332. Market 10@15c higher. Bulk of sales \$13.50@14.10; tops at \$14.15; heavy, 250 lbs up, medium, good and choice \$13.60@14.10; medium 200 to 250 lbs medium, good and choice \$13.60@14.15; light 150 to 200 lbs, common, medium, good and choice \$13.60@14.10; light lights 130 to 150 lbs, common, medium, good and choice at \$13.35@13.85; heavy packing sows 250 lbs up, smooth \$13@13.50; packing sows 200 lbs up, rough \$12.75@13; pigs 130 lbs down, medium, good and choice \$12.75@13.75.

Cattle.

Estimated receipts today are 20,000. Best steers strong; others steady to lower. Beef steers, medium and heavy weights 1100 lbs up, choice and prime \$17@19.50; do medium and good at \$10.50@16.75; do common at \$8.25@

10.50; light weight 1100 lbs down, good and choice \$14@19.25; do common and medium at \$7@13.75; butcher cattle, heifers, common, medium, good and choice \$6.75@14.50; cows, common, medium, good and choice \$6.50@13; bulls, bologna and beef \$6.50@10.50; canners and cutters, cows and heifers \$5.35@6.50; do canner steers \$5.50@7.50; veal calves, light and handy weight, medium, good and choice \$17@18.25; feeder steers, common, medium, good and choice at \$6.75@13; stocker steers common, medium, good and choice \$6@10.25; do cows and heifers, common, medium, good and choice at \$6@7.75; do calves, common, medium, good and choice \$7.75@11; western range cattle, beef steers, medium good and choice \$10.75@15.50; do cows and heifers, medium, good and choice \$7.75@13.

Sheep and Lambs.

Estimated receipts today are 26,000. Market steady to 25c lower. Lambs 84 lbs down, medium, good, choice and prime \$12.25@15.50; do culls and common \$8.50@12; spring lambs, medium, good choice and prime \$9.50@12; ewes medium, good and choice at \$6.75@8; breeding ewes, full mouths to yearlings \$6.75@12.50; yearling wethers, medium, good and choice at \$10.50@13.25.

BUFFALO.

October 29, 1919.

Cattle.

Receipts ten cars. Market is slow; prime heavy steers \$15@16; best shipping steers \$13.50@14.50; medium shipping steers \$11.50@12.50; best native yearlings, 950 to 1000 lbs, \$15@16.30; light native yearlings, of good quality \$12@13; best handy steers at \$11.50@12; fair to good kind \$9.50@10; handy steers and heifers, mixed at \$9.50@10.50; western heifers \$10@11; state heifers \$8@9; best fat cows \$10@11; butchering cows \$7.50@8; cutters \$6.50@7; canners at \$4.50@5.50; fancy bulls \$10@11; butchering bulls \$8@9; common bulls \$6.50@7; best feeders, 900 to 1000 lbs \$10@11; medium feeders \$8@9; stockers at \$7@8; light to common \$6@7; best milkers and springers \$100@150; mediums at \$75@90.

Hogs.

Receipts ten cars. Market is higher. Heavy and yorkers \$14.50@14.60; pigs \$13.50.

Sheep and Lambs.

Receipts five cars. Market is slow. Top lambs \$14.50@14.75; yearlings \$10@11; wethers \$9@9.50; ewes \$7.50@8.25; calves \$8@20.

More Cash For Your Raw Furs

Ship to the
Co-operative Raw Fur Company

And get more cash for your Raw Furs. This the big year—the opportunity to make big money trapping. Ship to a responsible house that

**PAYS YOU PROMPTLY
CHARGES NO COMMISSION**

Mail and express charges paid by us. You get the biggest net returns, quickly, without waiting or delay. Send us your first catch and get

10 PER CENT MORE CASH

More than you can get from any other house in America. Years of satisfactory service to trappers have made us the foremost fur exchange.

PRICE LIST FREE

Write at once.

Get on our list and keep up-to-date on latest prices.—prices that enable you to make the most money. Send name at once. A postal card will do.

The Co-operative Raw Fur Co.
85 Jefferson Ave., Detroit, Mich.

SHIP YOUR

POULTRY, VEAL and HOGS

TO

J. W. Keys Commission Co.

470 Riopelle St., Detroit, Mich.

Eastern Market

You Will Get a Square Deal
and Returns Daily.

Potatoes, Hay & Marsh Hay Wanted

We want good quality, graded ripe potatoes, preferably grown on sand. Can use carlots or bag lots. We furnish sacks. Write quantity and lowest price in your first letter.

We are in market for large quantity of baled marsh hay, also good timothy and clover hay. What have you and what is your price?

We sell cull beans. Get our prices.
Reference: Federal Commercial and Savings Bank, Port Huron, Mich.

Port Huron Storage & Bean Co.
Port Huron, Mich.

SHIP YOUR HAY

to
Albert Miller & Co.
192 N. Clark St. Room 210,
Chicago, Ill.

For Best Net Results

Ship to

CULOTTA & JULL
Detroit, Mich.

"Enough Said!"

Mr. POULTRY FARMER:

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

GEO. R. ELDRIDGE CO.

494-18th Street, Detroit, Mich.

Remember! We guarantee your satisfaction with every shipment.

EGGS

We will pay 70c per dozen delivered here for strictly fancy new-laid eggs, cases included. Shipments via express direct from farmers. This price good until

November 8th. Watch our price each week.
American Butter & Cheese Company, Detroit, Mich.

Holmes, Stowe Co., 445 Riopelle St.

Commission Merchants. Dressed Beef, Hogs, calves, Poultry, Live & Dressed, Provisions, etc. Correspondence Solicited. Ref. Wayne County & Home Savings Bank, Bradstreet. Detroit, Mich. Cad. 2878

HAY Ship To The Old Reliable House
Daniel McCaffrey's Sons,
623-625 Wabash Bldg., Pittsburgh Pa.

Please mention The Michigan Farmer
when writing to advertisers.

SHALL WE BUY FEEDS IN CAR- LOTS.

(Continued from page 545).

a half per ton than I have known of its being sold elsewhere, because everybody was ready to take the fertilizer without question and pay for it just as they had agreed to do. If everyone pays promptly for feed on arrival of the car it is not necessary to keep any money in the business. Let us see what this means. A car of feed at almost any time during the last year, would cost fifteen hundred dollars or more, and in our case we are handling from ten to twelve cars a year. Now, suppose I were obliged to keep fifteen hundred dollars on hand all the time to take care of sight drafts when they come in. Somebody must pay interest on that fifteen hundred dollars. Either I must lose it, or the people who buy the feed must pay it in additional cost per ton. As it now is, not a cent of money is necessary on my part.

Often a car is unloaded in a single day, with the exception of a few sacks, and as fast as the feed is taken, the money is left at the bank. The sight draft helps collections. The knowledge that the draft had to be settled before the car was opened, either with cash, or the credit of the one who had ordered it, tends to quick collections, because everyone feels that the honor of the one who does the business for the community is at stake, and looking at it in this way, no good reason is left for delay in paying for what has been ordered.

Again, if feeds are to be purchased in this way, the one who does the business must get enough out of it to pay him for his time and labor. I have known people who tried to order and deliver large quantities of goods for nothing, and while it was to the temporary advantage of those who bought, it did not last. No, the one who does this work must have his pay, but the cost will be very light if the person in charge is a good organizer, and a careful, consistent business man.

Our creamery has handled a good deal of feed for its patrons, and has done it at a very small advance always, without the least difficulty in a single case. Dealers in our little town have always taken a share of the contents of the car when they could get it, as they have done in our case if they needed it, and we could spare it for them. The success of this enterprise depends upon the attitude of the people toward it. If even the dealers use their influence against the practice of direct buying, it is not so easy to succeed. The writer realized at the beginning, that it would be much better to have an understanding with them, and so we talked it all over. Our dealers are as fine a lot of men as ever did business in any town. They could not buy their feed in carlots, and so were more than willing to take their supply from our car, along with the rest of us, when we had what they wanted.

If the dairymen of Michigan would buy their feeds in carlots, paying promptly at the car, much money might be saved. Much more might be saved by the services of a man who will study market conditions and buy at the right time, either directly from manufacturers or from a broker whose experience and fair dealing have made him a safe man to patronize.

NEWS OF THE WEEK.

(Continued from page 557).
Tuesday, October 28.

THE United States Senate defeats the Johnson amendment to the peace pact providing for an equal number of votes to this country and to England and her possessions. Government health officers are becoming anxious over the use of cold-packed canned goods and are analyzing samples to determine the presence of botulism poisoning.—King Albert, Queen Elizabeth and Prince Leopold of Belgium, are guests at Washington.

INTERNATIONAL LIVE STOCK SHOW

NOV. 29th to Dec. 6th

UNION STOCK YARDS—CHICAGO

The Victory Carnival
of the Live Stock World.

The Criterion of All
Stock Shows.

Daily Sales of Pure Bred Stock

POLLED HEREFORD SALE
Tuesday, Dec. 2nd, 1:00 P. M.
For catalog write B. O. Gammon,
324 Valley National Bank Bldg.,
Des Moines, Iowa.

POLLED SHORTHORN SALE
Thursday, Dec. 4th, 10:00 A. M.
For catalog write J. H. Martz,
Greenville, Ohio.

HEREFORD SALE
Friday, Dec. 5th, 1:00 P. M.
For particulars write R. J. Kinzer,
1009 Baltimore Avenue,
Kansas City, Mo.

ABERDEEN-ANGUS SALE
Wednesday, Dec. 3rd, 1:00 P. M.
For particulars write Chas. Gray,
Union Stock Yards, Chicago.

SHORTHORN SALE
Thursday, Dec. 4th, 1:00 P. M.
For catalog write F. W. Harding,
Union Stock Yards, Chicago.

Study Intimately the Art of Breeding.
Learn to Reduce the High Cost of Living by Economic Feeding Methods.
The International Hay and Grain Show for Chicago Board of Trade Trizes
The Brilliant Evening Horse Shows and A TRIP TO CHICAGO

Lowest Rates on all Railroads

Oxford Sheep Sale

TUES. NOV. 18, 1919, 1.00 P. M.

40 Yearling and Lamb Rams 40

50 Breeding Ewes (Bred) 50

This lot of sheep is of the best Canadian breeding and from Mich. leading flock. A great chance to improve your flock. This will be Mich. Greatest Sheep Sale.

6--SCOTCH SHORTHORN BULLS--6

These bulls are real herd-headers and are from a Son of Avondale. Sale to be held at Feed Barn at Elsie, Mich.

H. B. PETERS & SON,

Carland, Mich.

It Does More and Goes Farther Than Any Product Known



Wise Stockmen Everywhere
are TIX-TON Users

Tix-Ton ANTISEPTICS

the year around keep stock healthy and free from disease germs, worms, and ticks. A \$5.00 box makes \$60.00 worth of medicated salt, or stock conditioner—saves you big money.

Send \$2.00 for a box of "TIX TON-MIX" by parcel post. It will medicate a barrel of salt. For hogs, sheep, cattle, horses, and poultry.

PARSONS CHEMICAL WORKS, Grand Ledge, Michigan
Leona Park Farms Experiment Station

Write for Club Offer



ECONOMY FEEDER

A perfect working self-feeder for hogs. A 100-lb. pig pays for it. Saves on purchase price, time, floor space, repairs and feed. Will feed 40 hogs. Sold direct, \$18.50. Money refunded if not satisfied. For further information address, THE ECONOMY FEEDER CO., Box 536, New Washington, O.



DICKEY GLAZED TILE SILOS

"The Fruit Jar of the Field"

Dickey silos are guaranteed
Send for Catalog No. 9

W. S. DICKEY CLAY MFG. CO.,
MACOMB, ILL.

Kansas City, Mo.

Chattanooga, Tenn.

HOGS.

Sale of Big Type Poland Chinas

Nov. 5. Choice offering of 24 sows and 23 boars at Fair Grounds, Ionia. Catalog now ready. If interested in the good ones write for catalog.

WESLEY HILE, R. 6, Ionia, Mich.

Big Type Poland Chinas. Spring boars by BIG BOB. Out of sows by Grand Master and Hillcrest Wonder. Also Fall Pigs.
HILLCREST FARM, Kalamazoo, Mich.

Big type Poland China boars for sale. Sired by Big Giant No. 257587 O's Orange No. 33023 and Reish's Col. Jack No. 322507. L. L. Chamberlain, Marcellus, Mich.

Large Type Poland Chinas for sale: something good in spring boars; write or see them; free delivery from Manchester. A. A. Feldkamp, R. 2, Manchester, Mich.

LARGE TYPE Poland China springs pigs.
E. H. EISELE, Manchester, Mich.

Big type P. C. Choice spring boars from Iowa's great-est herds out of 100 lb. sire and mammoth sows; big boned, fellows. E. J. Mathewson, Burr Oak, Mich.

FOR SALE P. C. April pigs either sex.
ARMSTRONG BROS., R. 3, Fowlerville, Mich.

BIG Type Poland Chinas. Sired by Smooth Mastro don litter mate to the Ill. Grand Champion. The big boned, deep, long bodied kind at farmer's prices. Wah-be-me-me Farms, White Pigeon, Michigan

L. T. P. C. Sow and 9 pigs price \$100, spring boars long and tall will be ready to ship after Nov. 1st. H. O. SWARTZ, Schoolcraft, Mich.

B. T. P. C. The best males I ever raised, none better in Mich. Recorded free. Priced reasonable. 175 lbs. to 200. John D. Wiley, Schoolcraft, Mich.

Large type P. C. Spring boars and gilts now ready to ship. Also one fall yearling boar and fall pigs. CLYDE FISHER, R. 3, St. Louis, Mich.

Leonards Big Type Poland China boars, all ages fall boar pigs at a bargain, none better. Call or write, E. R. Leonard, St. Louis, Mich.

When In need of something right good in A. L. T. P. C. boar just come and see or write W. J. HAGELSHAW, Augusta, Mich.

Must make room for brood sows. Will sacrifice L. T. P. C. spring boars, priced for quick sale. Fall pigs either sex. R. M. JEFFRIES, St. Louis, Mich.

Pine Grove Hampshires, "Quality First" Michigan Boy, Grand Champion boar of Michigan, Bred and owned by us. Many other prize winners at Michigan State Fair 1919. Hog's for sale all ages, both sex. "Lookout Joe", a \$1000 boar heads our herd. GEO. COUPAR & SONS, R. 1, Marlette, Mich.

Spring Hampshire, boar pigs for sale. Fall pigs from new blood lines.
JOHN W. SNYDER, R. 4, St. Johns, Mich.

Fairview Stock Farms Tamworths. Registered massive ancestors. W. H. Warner, Concord, Mich.

REGISTERED YORKSHIRES
from Imported strains. Hatch Herd, Ypsilanti, Mich.

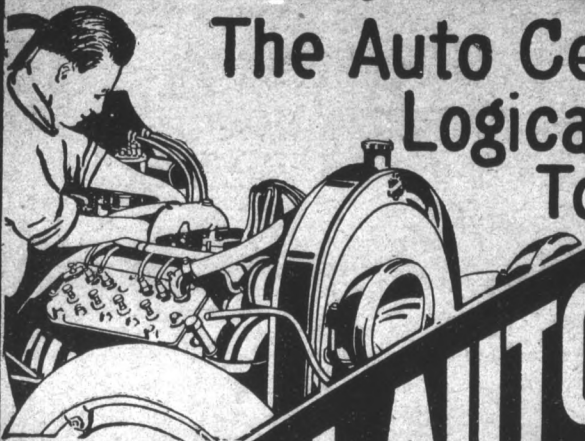
HORSES

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

Sheep ads will be Found on Page 563

DETROIT

The Auto Center is the
Logical Place
To



Training for
Head and
Hand

LEARN AUTO AND TRACTOR BUSINESS

There were 6,353,233 cars and trucks licensed in the United States up to July 1st, 1919. Thousands are being added to this astounding list every day until the number is now well over seven million. At the present rate it will reach the eight million mark before the end of the year, and still the demand is far ahead of production. And Detroit is the Heart of this tremendous industry.

Big Field With Wonderful Future

The coming year will be the greatest in the history of the Auto Industry. Producers and distributors of every kind of Auto, Truck and Tractor will be tremendously busy. Garages and Service Stations will be rushed to the limit. Already this condition is being felt as never before. Everywhere there is an insistent demand for men,—trained men who know how to adjust, repair and care for these thousands of machines. And the constantly increasing number of cars means an ever increasing demand for trained men.

Previous Experience Makes No Difference

It makes no difference what you have done nor what you are doing, you can successfully learn the Auto and Tractor Business if you so desire. Our Course will positively teach you this remarkable business with its wonderful future and unlimited field of opportunities. Grit, perseverance, determination, a willingness to work and a desire to get ahead are the chief requisites. If you have these, Our Course will teach you this work,—will fit you to command big money.

Earn \$100 to \$400 Monthly

Really, there is no limit to your earning capacity after you have mastered this business. This can be made the stepping stone to a most successful business career. The training you get here will fit you to hold positions which before were out of your reach. Factories, Garages and Service Stations all over the Country are continually asking for our men. They know the value of the training we give and do not hesitate to give our graduates the preference.

Your success in the Auto Business depends upon your training,—what you know plus what you are taught and trained to do correctly. Here at the M. S. A. S. you are thoroughly instructed in every phase of the Auto Industry. You learn every part of the work by actually doing it. Such a training enables you to earn the biggest salaries in the business.

Unlimited Opportunities

Hundreds of our students go right from Our School into business of their own,—many of them who had never before thought such a thing possible. Our Course convinced them that they had received a training that was invaluable, capable of placing them in business for themselves. And these students are successful. They write us of having incomes way beyond their expectations, all because of the training received at the M. S. A. S.



Here is shown the Electrical Lecture Room where the elementary principles of auto electrics are explained to the students.

What We Teach

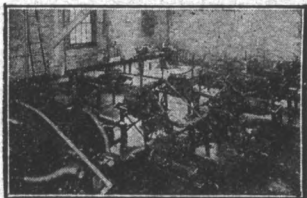
Each student is thoroughly taught the common principles of auto, truck and tractor construction. Every part of a car and its operation is explained in detail. Starting, lighting, ignition, carburetion, combustion, lubrication, transmissions, differentials, chassis construction, etc.—all are covered thoroughly and practically. Not one thing is omitted. You are taught automobiles, trucks and tractors as no other school can possibly teach them because of our unequalled equipment and the fact that our School is located "In the Heart of the Auto Industry."



The growing importance of the tractor industry led us to include a complete tractor course with our regular auto course thereby giving our students the broadest possible training.

Sell Autos, Trucks and Tractors

Here is a big field for our students. The training we give helps you to know machines as no average salesman can know them. Your thorough knowledge of the various makes enable you to give expert advice on autos, trucks and tractors. It gives you a big advantage in the selling of these machines.



View of our block test department where we have from 18 to 25 motors all the time for students to work on. Sprague Electric Dynamometer shown in center background.

Complete Tractor Course Included

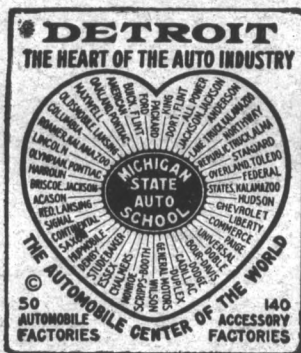
Our Students are also given complete and thorough instruction on the care, repair and operation of Farm Tractors as a part of our regular Auto Course. The constantly increasing use of tractors has created a big demand for trained tractor men, hence this addition to our Course without extra charge. Further assistance is realized from Manufacturers who have placed machines with us for the benefit of our Students.



Not a One Man School

Our course is not made up of one man's ideas. It represents the combined experience of many,—it consists of the latest, newest and most practical ideas of the biggest men in the auto, truck and tractor business. Our School enjoys the fullest co-operation with manufacturers, service stations, garages and owners,—a factor of vital importance to our students.

A. G. Zeller, President



Our School Recognized by Garagemen

The record made by Our Graduates has led hundreds of Garage Owners to send men to us for training. These men have recognized the value to them of having trained, competent men and they know that our Course gives them that kind. We are also able to place Garage Owners in touch with men in their own vicinity who have taken Our Course, thereby helping both these Garage men and our students.



In this room the student becomes thoroughly familiar with every type of starting, lighting and ignition systems.

Complete Training In Auto Electrics

This is a very important feature in our Course of instruction. Students are made familiar with every known type of starting, lighting and ignition system. So thoroughly are our students taught this subject that none of them have any difficulty in locating and correcting any trouble occurring in auto electric systems.



A practical working knowledge of all cars is required of each student before he can pass our final examination. This test is made in our repair department.

Brazing, Welding and Tire Repairing Taught

These subjects are fully covered in complete Course separate from the Auto Course. Brazing and Welding have become a most important part of the Auto Industry and Students taking the Course are thoroughly instructed on the subject. Our Tire Repair Course is most complete and comprehensive and furnishes a valuable addition to the equipment of a student entering the Auto Industry. There is always a big demand for trained, competent tire repair men.



This shows a section of our brazing, welding and cutting department. Each student actually handles the torches and works with an individual outfit.

Read the Money Back Guarantee

We guarantee to qualify you for a position as chauffeur, repair man, demonstrator, auto electrician, garage man, automobile dealer or tractor mechanic and operator paying from \$100 to \$400 monthly in a reasonable time, or refund your money.

Constant Demand for Detroit Trained Men

Every city, town and village in the country are calling for trained auto and tractor men. Big factories want Detroit trained men; garage men and service stations are constantly asking for our graduates; owners in towns and villages write us for names of our graduates who are competent to care for their cars. Everywhere there are big opportunities for M. S. A. S.—Detroit Trained men, either to enter good paying positions or go into business for themselves.

School Open All Year

There is no need to lose time because of vacations, etc. Our instruction never stops. No matter when you arrive, our Welfare Department helps you to find a place to live; gives every assistance you need either of a personal or business nature and keeps in touch with you throughout the Course and after graduation.

Start Any Time—Don't Wait

Instructions can begin same day you arrive,—no wasted time. We have three classes daily. Students are given every possible assistance. If necessary, we aid you to get a job where you can earn money to help pay expenses.

Ask For Catalog—Write Today

Get a letter,—or the coupon,—on the way to us Right Now asking for our new, 175-page catalog. It tells the complete story of our School and our several Courses. Gives the names and letters from our graduates who have made good because of the training received here at the Old Reliable M. S. A. S.—"The Detroit Auto School". Mail the coupon TODAY and get this wonderful book of opportunity. Or, better still, say when to expect you, then jump train and come. Hundreds have done it,—and were well paid. Don't delay! Don't wait! Write—or come—NOW—Today!

SEND THIS COUPON TODAY

MICHIGAN STATE AUTO SCHOOL
1011 Auto Bldg., 687-89-91 Woodward Ave.
DETROIT, MICHIGAN, U. S. A.

Gentlemen: Please send me absolutely FREE, New 176 page Illustrated Catalog, "Auto School News" and information as checked below.

☐ Auto and Tractor Course ☐ Tire Repairing Course ☐ Brazing and Welding Course
(Mark each course you are interested in.)
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