

KANSAS FARMER



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The National Dairy Show

On February 15, at Chicago, there was opened in the Coliseum, an exposition that was an epoch-marker in the dairy industry of the United States and the world. This magnificent building, which is one of the largest assembly halls in the United States, was filled to its utmost capacity with the exhibits of everything pertaining to the dairy and the dairy industry. Indeed, a large part of the exhibit was of necessity placed in another building because of lack of room in the Coliseum.

This great show was the event of years of waiting and the result of years of working. Such a show has been earnestly desired by those interested for many years and attempts have been made to hold a National dairy show in Madison Square Garden in New York, but they resulted disastrously. The people of that city are not particularly interested in the dairy or the dairy cow, and the enormous expense attendant upon the making of an exhibit that would in some measure be a correct representation of this great industry,

proved too great a burden. Chicago, on the other hand, is in the center of the richest dairy region of the United States, and the Elgin market which is close by, sets the price for all dairy products.

It would be difficult to describe or even enumerate the vast number and variety of objects on exhibition in connection with this dairy show. Attempts have been made a number of times to make provision for the classes of dairy cattle in the International Live Stock Exposition, but without results on account of lack of room. The National Dairy Show, however, included an exhibit of dairy cattle in which Ayrshires, Guernseys, Holstein-Friesians and Jerseys were brought from the United States and Canada to contest for the prizes offered by the management. The entire annex of the Coliseum was used for the exhibit of dairy cattle of which there was a goodly showing of all the breeds named.

Cream-separators were there in abundance. All of the prominent man-

ufacturers of these indispensable dairy machines were represented in handsomely decorated booths and each served to attract its crowd of admirers. The DeLaval Separator Company, of New York and Chicago, had a fine exhibit, included in which were the first two separators sold in America in 1886. This afforded a wonderful object lesson by comparison with the modern and up-to-date pattern of machine. They also showed a new style 700-pound separator run by a small fan motor and one of the attractive features of their booth was a moving panorama showing how the cream-separator pays off the farm mortgage and gives new prosperity to the owner.

The Sharples Separator Company, of Westchester, Pa., and Chicago, made a magnificent showing with forty-eight separators of various sizes and kinds. Present in their booth during a part of the week was the inventor of the tubular machine. The exhibit was in charge of Mr. A. W. Rockwell who was assisted by a number of his hustling salesmen, each of whom did everything in his power to make the visitor at home.

The Empire Cream Separator Company, of Bloomfield, N. J., made a splendid showing. This company is now putting on the market a new-

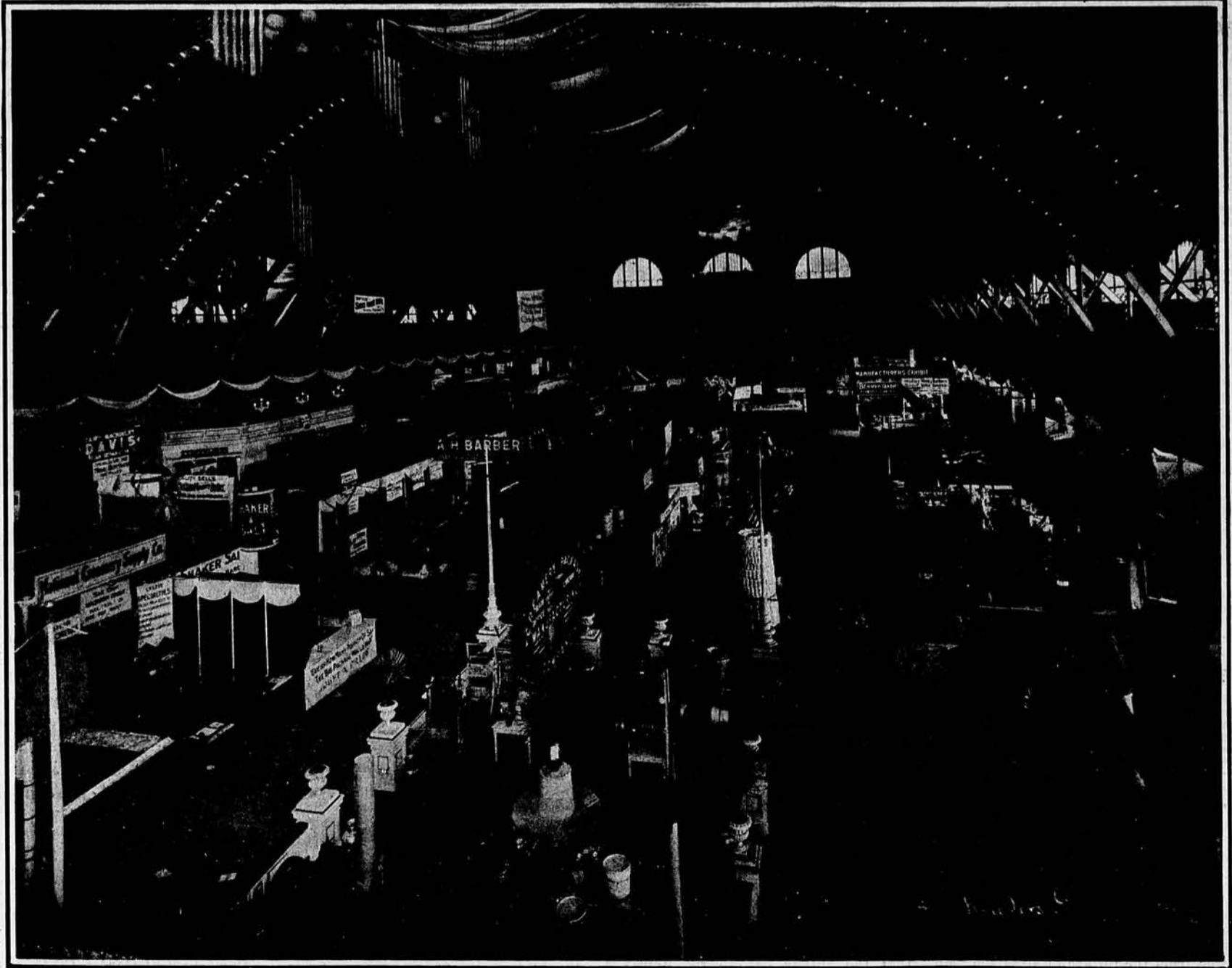
style, frictionless, hand separator which seems absolutely perfect. The name "frictionless" is apt, but the visitor is astonished to see the machine run for thirty minutes after the power has been removed. The new frictionless Empire is bound to be a winner.

The Vermont Farm Machine Company, of Bellows Falls, Vt., had a comprehensive exhibit of United States cream-separators of various sizes, together with tread powers and creamery supplies. The United States cream-separator is a well-known and popular machine, and is one of the mortgage-lifters of the country.

The Omega Separator Company showed four different sizes of their hand separators together with a sectional view of the machine as exhibited at the World's Fair. This proved a very attractive exhibit.

Other separators were shown in their several booths and all proved attractive. A further step in advanced methods of butter-making was shown in the operation of the radiator. This machine makes butter direct from the milk by first separating the cream and then extracting the butter-fat. This is an old idea, which is worked out practically now for the first time. Its predecessor was the butter-extractor which

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Birds-Eye View of Interior of the Chicago Coliseum during the National Dairy Show.

Editorial

WHAT HAVE THE PROMOTERS ACCOMPLISHED.

The year 1905 was a great one for "promoters." Among the various projects in which individuals, especially farmers, have been asked to join and to which they have been asked to subscribe various sums—a dollar and upwards—some have claimed to be able to influence prices of farm products.

The record price for wheat at Chicago for the year was \$1.54 in February. The decline was almost constant until December for which month the top price was 90 cents. The official record closed March 5 at 80 cents.

But perhaps the promoters prefer to consider corn. The Chicago price for corn in March, 1905, was 45 1/2 to 48 1/2 cents; in July it was 53 1/2 to 59. The year closed at 42 to 50 1/2; to March 5 this year the record is 40 to 40 1/2.

Potatoes have done better. The year opened at St. Louis with 35 to 42 cents for January, 1905, and closed at 58 to 66 for December. To March 5 this year the price is 52 to 55.

The promoters have had little to say as to what they would do to the price of hogs. Hogs are given to perverseness—to going the other way, as it were—so that the fixers of future prices have been little inclined to tackle the hog. Well, the hog started in at \$3.90 to \$5 for January, 1905, and closed the year at \$4.50 to \$5.35. He marched nobly up to \$5.90 to \$6.52 1/2 up to March 5, in Chicago.

Butter began 1905, at 23 to 29 1/2 for January. After some fluctuations it closed the year at 24 to 25 for December at Elgin. To March 5 the price was 27.

It is fair to assume that the various schemes whereby prices were to be fixed for farmers, at a dollar and upper farmer, had nothing to do with the general declines.

The KANSAS FARMER has been cordially invited to boom some of these schemes, has been threatened with loss of patronage if it refused. There may be those who will not like the above showing from U. S. Government official records of prices. But the KANSAS FARMER's first duty and purpose is to be true to its readers. It is yet to be shown how any of the schemes so far worked has affected the general markets to the advantage of the farmers.

This does not allude to cooperative enterprises which, under honest and capable management, have assisted their members in both buying and selling. These are legitimate business undertakings. But the promoter who claims to be able by some occult methods to influence general prices, and wants pay for exercising his claimed powers—what shall we say of him?

WHEAT CROP OF THE WORLD.

The official estimates of the wheat crops of the world for the last five years are as follows: 2,954,763,000 bushels in 1901; 3,125,227,000 in 1902; 3,221,551,000 in 1903; 3,163,845,000 in 1904; 3,337,748,000 in 1905.

The production by the several grand divisions in 1905 was as follows:

Table with 2 columns: Division, Bushels. Rows include Total for the world, North America, South America, Europe, Asia, Africa, Australasia.

It will be seen that Europe continues to produce more than half of the wheat crop of the world and that her crop is more than double that of North America.

The 1905 crop of North America came from the several divisions as follows:

Table with 2 columns: Division, Bushels. Rows include Total for North America, United States, Ontario, Manitoba, Rest of Canada, Mexico.

The total for Canada is only 109,695,000 bushels.

The largest producer in Europe is Russia with 568,532,000 bushels; France is second with 338,785,000 bushels. Of South America's total of 175,120,000 bushels, Argentine produced 154,420,000.

In a horrible railroad accident in Colorado, a few days ago, about thirty persons lost their lives and a large number were injured. The collision resulted from the failure of a station man to deliver modified orders to a passing train. It is reported that the station

man had been for seventy-two hours on duty and slept as the train passed. Very many collisions result from similar long-continued work of train men. There should be most stringent legal restrictions preventing any such overworking of persons upon whose ability and alertness of mind the safety of users of public conveyances depends.

A VOICE FROM THE PACIFIC.

"Hawaii" is the title of a pamphlet issued by the Hawaii Promotion Committee, Honolulu. It contains plain and evidently conservative statements on the agriculture and agricultural possibilities of the most interesting group of islands of the Pacific. The subjects treated are sugar, pineapples, sisal, bananas, coffee, tobacco, vanilla, dairying, poultry, silk, vegetables, fruits, bees, stock-raising, and rubber.

Farming in these islands is so different from farming in the grain- and meat-producing sections of the United States, that those who contemplate a change to Uncle Sam's sea-girt possessions in the middle of the Pacific should write to H. C. Wood, secretary, Hawaii Promotion Committee, Honolulu, Hawaii, for full information.

BOYS' CORN CONTEST IN FRANKLIN COUNTY.

As was to be expected the corn-growing contest for boys has received proper attention in Franklin County, Kansas. The Farmers' Institute organization has taken charge. This means that the contest will be a great success. Following is a copy of the Franklin County poster:

Boys' CORN CONTEST.—About \$300 offered in prizes to the farmers' boys of Franklin County, between the ages of 12 and 18, by the Franklin County Farmers' Institute. Each boy who enters will receive free one quart of pure seed corn. The cash prizes and the number of special prizes insures nearly every boy a good prize; also the experience will be of great value. It's all free and for your good, boys, so send your name and address to the secretary at once and it will be published by the county papers with the others each week. The rules have been published and will be published again, but they are simple and can be easily carried out.

"C. W. GREEN, President. "E. P. PENDLETON, Sec'y. "Franklin County Farmers' Institute." The KANSAS FARMER would like the names and addresses of all boys entered in the contest.

THE KANSAS AGRICULTURAL COLLEGE AT WASHINGTON.

On the evening of March 2, at the Teacup Inn in Washington, D. C., there was held the fifth annual reunion of the Washington branch of the Kansas State Agricultural College Alumni Association. The evening was spent in the discussion of a literary program, games and light refreshments, and a very enjoyable time is reported.

The Kansas Agricultural College enjoys the distinction of having more of its former students and teachers in Government employ than any other institution in the Union, and these reunions are usually attended by more than half a hundred of those who call this great college their Alma Mater.

The following is a list of those who were present: Mr. and Mrs. L. W. Call, Mr. and Mrs. M. A. Carleton, Mr. and Mrs. C. P. Hartley, Mr. and Mrs. C. F. Doane, Mr. and Mrs. W. L. Hall, Mr. and Mrs. L. A. Fitz, Mr. and Mrs. R. S. Kellogg, Mr. and Mrs. J. M. Westgate, Prof. and Mrs. A. S. Hitchcock, Prof. and Mrs. D. E. Lantz, Miss Margaret Butterfield, Prof. G. H. Failyer, Prof. J. B. S. Norton, Prof. Thos. E. Will, Major J. F. Morrison, E. C. Butterfield, R. A. Oakley, Nicholas Schmitz, Harry Umberger, A. B. Gahan, Earl Wheeler, W. R. Ballard.

Upon reading Luther Burbank's article on "How Plants are Trained to Work for Man," printed in "The Youth's Companion" for March 22, one can not help thinking that only a Methuselah could reap the full rewards of his own plant-breeding. The article indicates that the author has already achieved the end aimed at in some of his experiments. On the other hand, many

of them involve so many crosses, such careful selection season after season, that the result of them can hardly be known within the span of three-score years and ten. This contribution to "The Youth's Companion" is said to be the first word that Luther Burbank has ever yet said about himself or his work in print, and it is likely, therefore, to be read with interest by every one interested in horticulture.

THE ADVERTISING.

Do you read the KANSAS FARMER advertisements carefully? They are worth reading. Good advertising matter is a valuable feature in any paper or magazine, and the writer would not take a paper that did not have such advertisements in it. Some of the brightest men in this country are paid high salaries to prepare advertisements and they put brains into their work. Much timely information and many practical suggestions are included in the advertisements, and they are worth reading. You can not afford to skip the advertisements especially such as appear in the KANSAS FARMER. They are clean; they are reliable; and they are interesting. This paper contains no whisky or other objectionable advertisements to go into your home each week in the year with their baleful influence upon your children.

SWEDISH BROWN BEANS.

EDITOR KANSAS FARMER:—I enclose you samples of a bean, known as Swedish Brown Bean among merchants. I have looked in vain in seed catalogues for a description that would tally with them. Can you tell me if seed merchants of this country handle the bean? I suppose they do, for the bean does well in some States. How are they designated? I bought a few out of the common stock of a grocery store and planted two years ago, and they did fairly well that year. I would like to try them again this year if I can find reliable seed. E. E. LINDEHOLM. McPherson County.

The samples sent have been identified by Prof. Robt. E. Eastman, of the Kansas Experiment Station as the "Swedish Brown Bean." They have not been grown at the Station, and are not named in the seed catalogues. Undoubtedly they can be obtained through any of the enterprising seed-houses advertised in the KANSAS FARMER. Cut this notice out and send it with the order.

BLOCKS OF TWO.

The regular subscription price of the KANSAS FARMER is one dollar a year. That it is worth the money is attested by the fact that thousands have for many years been paying the price and found it profitable. But the publishers have determined to make it possible to secure the paper at half price. While the subscription price will remain at one dollar a year, every old subscriber is authorized to send his own renewal for one year and one new subscription for one year with one dollar to pay for both. In like manner two new subscribers will be entered, both for one year, for one dollar. Address, The Kansas Farmer Company, Topeka, Kans.

"The Horseman" promises to present in a midsummer number, a complete history of the development and progress of the trotting horse. This number will be profusely illustrated and will in every respect be in the highest style of the printer's art.

"Forest Belts of Western Kansas and Nebraska" is the title of a valuable bulletin by Royal S. Kellogg, forest assistant of the U. S. Forest Service. Mr. Kellogg is a Western Kansas product, a thorough investigator and a conscientious writer. It would be worth while for the Government to place a copy of this excellent bulletin in the hands of every farmer in the region considered.

Congressman Jones, of Washington, has introduced a bill which provides that the Secretary of Agriculture shall be authorized and directed to investigate systems of farm management and types of farming prevailing in different sections of the United States, the means used for maintaining soil fertility, the methods employed in the production, utilization, and marketing of crops, to conduct demonstrations in improved methods of farming, and to disseminate the information concerning the foregoing, and for this purpose the sum of one hundred and twenty thousand dol-

lars be appropriated, to be available during the fiscal year ending June 30, 1907.

A bill just passed the National House of Representatives providing for increasing appropriations to the several agricultural experiment stations. Under the Hatch bill which was passed in 1887 these experiment stations each receive \$15,000 annually. The present bill proposes to add \$5,000 a year to the \$15,000 and to increase the amount each year until the added appropriation shall be \$15,000, making the total \$30,000 for each station. Well used, such an amount will be a good investment.

The Government free-seed graft by which some Congressmen seem to hope to buy the favor of farmer constituents by sending to some of them, at Uncle Sam's expense, a few cents' worth of garden or flower seeds seems likely to come to an end. The House committee on agriculture has stricken out the appropriation for next year. It is almost past belief that our National lawmakers should expect to influence farmers to support them for renomination and election by bribes of a few cents' worth of common seeds. It is even more surprising that they should have consciences so dull as to permit them to pay these petty bribes out of the National Treasury. The Grange and other representative organizations have resolved against the scheme under which, while the bribe sent to a single constituent is small, a large sum is drawn from the public treasury for other than public purposes. The day has arrived when graft, whether large or petty, is disreputable. It is to be hoped that no Kansas Congressman will be guilty of voting for this unwarranted appropriation to buy a few thousand small bribes to be used in his interest.

Voice of the People.

John H. Pugh, Carbondale, Ill.: "Enclosed find \$1 to pay my subscription for one year. On account of so many accounts to meet at this time, I dislike to spare the money, but I would be lost indeed without my paper, the KANSAS FARMER."

J. J. Hysell, of Geneseo, Kans., writes: "I find that by reading and following the instructions in the 'old reliable' KANSAS FARMER I am learning more about farming all the time."

Mr. J. Riblett, Jr., writes: "Please find enclosed check for \$3 to pay on my back subscription to the KANSAS FARMER. I am running a hardware store now but I still get time to read the KANSAS FARMER."

Newton Bros., Whiting, Kans., write: "The KANSAS FARMER is a puller. We have received more inquiries from our card in the KANSAS FARMER than any medium we ever used. We have no Duroc-Jersey bred sows or gilts left and have only 3 or 4 August and September pigs left. Will price them right."

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Table listing various articles and their page numbers, including Alfalfa on prairie sod, Alfalfa on wheat ground, Ants, uncles and cousins, Bedtime storybook, the (poem), Bread, Breton, Jules, Catalpa speciosa, Cereals crops, the improvement of, Club, a new, Corn contest in Franklin County, Corn-growing contest in Marion County, Corn, yellow vs. white, Cream, a premium for good, Dairy show, the National, Dairy cow, some points in the selection of a modern, Dairy, why the Kansas farmer should, Dairy, why you should, Dairy, why we should, Dairy school on wheels, Dairy, how we should, Dairy cows, the breeding and handling of, Docking horses, Douglas County Horticultural Society, End crowns all, the (poem), Fruits and nuts, Grandma's story—a talk about dogs, Grange in Cowley County, the, Grange, tell us how to create an interest in our, Holidays, observance of legal, Japan millet, Kansas Agricultural College at Washington, Mutual Helpers, the, Orpington breed of fowls, Pacific, a voice from the, Pasture, Pigs, care of young, Pigs, prevent lying on, Poultry notes, Poultry pointers, Promoters accomplished? what have, Rhubarb, Sunday-school lesson, Swedish brown beans, Uncle Sam at Garden City, Vegetables, winter, What have we done to day (poem), Wheat crop of the world.

Agriculture

The Improvement of Cereal Crops.

PROF. C. A. ZAVITZ, AGRICULTURAL COLLEGE, GUELPH, CANADA.

The subject of the improvement of our cereal crops is presented under four headings, each of which I consider essential in order to do the best work in the breeding of cereals, namely, the selection of varieties, the selection of seeds, the selection of plants, and the production of hybrids.

SELECTION OF VARIETIES.

I am convinced that the proper selection of varieties of cereals is of great importance, not only from the farmers' standpoint, but also as the basis of work for the improvement of cereals by plant-breeding. After growing and examining over two thousand varieties of farm crops in each of five years, and afterwards observing the behavior of some of those varieties in general cultivation, I wish to emphasize strongly the importance of variety in this work. As some breeds of live stock have been bred for many years to fulfil certain purposes, so have certain varieties of farm crops been raised for long periods of time with different objects in view. Some varieties are well adapted to rich, loamy soils, others to heavy clay land, and still others to soil of a light character. For instance, in Ontario, it would be unwise to grow the Joannette oats on a light, weak soil, or the Black Tartarian oats on a rich bottom-land. It would be equally unwise to grow the White Wonder peas on a poor soil or the Prussian Blue variety on land which naturally produces a large amount of straw. The best results could not be expected from growing the Turkey Red wheat where the crop is apt to lodge, or the Black Hullless barley on rich alluvial soil. Decidedly better results can be obtained from growing the Longfellow corn in Northern Ontario and the Leaming variety in Southern Ontario than if this order was reversed. Many greater yields can nearly always be expected from the Siberian than from the Black Tartarian oats; from the Dawson's Golden Chaff than from the Surprise winter wheat; from the Mandcheuri than from the Common Six-rowed barley; from the early Britain than from the Golden vine peas; from the White Wonder than from the common, small, white, field-bean, etc. Certainly great differences exist between different varieties of grain crops in length of straw, strength of straw, susceptibility to rust, and quality of grain, as well as yield per acre and in many other respects. In regard to the yield per acre, there is a very great difference in different varieties. For instance, we have grown a number of varieties of oats and barley under uniform conditions in each of sixteen years, and, for the sake of illustration, I wish to say that the results of these experiments show an average yield of grain per acre of 88 bushels from the Siberian and 72 bushels from the Black Tartarian, a difference of 16 bushels per acre per annum in favor of one variety over another. Again, the case of barley, the Mandcheuri gave an average of 70 bushels and the Mansury an average of 59 bushels per acre during the same period of sixteen years. Here we have a difference of 11 bushels per acre per annum between two strains of the six-rowed barley. When we see such marked differences between varieties, we are led to the conclusion that variety has an important place in the work of plant-breeding as well as the practice of the farm. Mr. Hugo de Vries, of Holland, after visiting the apt Luther Burbank last year, wrote an account of his trip, and, among other things, he stated that "as a general rule, it holds true that the results of crossing depend primarily on the selection of the varieties used for that purpose. These indicate the list of possibilities from which the choice and combinations have later to be made. Outside of this list, very little good is obtained, and then only by accident. This occurs very seldom in Burbank's cultures."

SELECTION OF SEEDS.

Within the past twelve years we have done a large amount of very careful work in order to determine the influence of different selections of seed on the resulting crop. Fresh seed has been taken each year from the general crop of grain grown on the farm, or from seed of the leading varieties of roots and rape as obtained from some of the best seedsmen. The results, therefore, represent simply one

year's influence from seed-selection, but in order to obtain the influence from one year's work of this selection, the experiments have been repeated from season to season, in order to secure a good average of conditions of soil, temperature, and rainfall. For the large seed, none but well-developed grains were selected; for the medium-sized sample, the grains selected were of a uniform character, plump and of medium size; and for the small, none but sound, plump, and apparently good seeds of small size were used. In the selection of large, plump grain, one-half pound of each class was carefully weighed and counted. A corresponding number was then taken of the medium-sized and of the small, plump grains. The different selections were sown upon plots of similar size. Four tests were made annually with the different selections of seed of both the root and the rape crops. Duplicate experiments were conducted, in which the seeds of the different selections were planted separately, and a duplicate experiment was also conducted by dibbling the large, five medium and eight small seeds at each place where it was desirable for a root of a rape plant to grow. The plants were afterwards thinned, leaving one in each place and having the plants of the different selections of each class at an equal distance apart. The results of the duplicates of each method were then averaged and afterwards those of the two methods were averaged together. It will therefore be seen that the results of all the selections with roots and rape are those of four distinct tests made in each of the years in which the experiment was conducted.

	Number of years of tests	Yield of crop per acre		
		Large seed bu.	Medium sized seed bu.	Small seed bu.
Grains:				
Oats.....	7	62.0	54.1	46.6
Barley.....	6	53.8	50.4
Spring wheat..	8	21.7	18.0
Winter wheat..	6	46.9	40.4
Field peas.....	6	28.1	23.0
Field Roots:				
Mangels.....	5	33.2	29.6	21.5
Sugar beets...	5	22.9	21.9	14.3
Swede turnips..	5	17.1	15.2	8.7
Fall turnips...	4	25.4	21.7	16.2
Field carrots..	5	24.5	22.2	16.2
Rape:				
Rape.....	5	17.4	15.0	12.4

From the figures here presented in tabulated form, it is most interesting to observe the marked influence of one year's selection of seed on each of the eleven different crops here enumerated. The large, well-formed seeds produced stronger and more vigorous and more productive plants.

In other experiments along similar lines, we have obtained better results from plump as compared with shrunken seed; from sound seed as compared with that which was injured in the process of thrashing; from grain which was perfect in comparison with that which had sprouted in the field; and from seed which was thoroughly ripened in comparison with that which was harvested while it was still immature.

An interesting experiment has been conducted for thirteen years in succession, in a systematic selection of seed oats. The selections were made with large, plump, black seeds and also with light-weighting and light-colored seeds. The test was commenced in the spring of 1893, by selecting seed from the general crop of the Joannette black oats of the previous year. The selection made in each of the following years was from the product of the selected seed of the previous year. The selections each year were composed of an equal number of grains and were sown on plots of uniform size. As the selection for this experiment has been continuous, selecting the seed each year from the crop produced in the year previous, the average results are of but little value, but the yearly results are interesting, valuable, and quite suggestive. In the crop produced in 1905, it was found that the large, plump seed produced 65.5 bushels and the light seed 44.7 bushels per acre. In each of the past few years, the results have been much the same as those for 1905. In weight per measured bushel, the crop produced from the large,

required only 1149 grains to weigh an ounce, while the crop produced from the light seed required 2066 grains to make the same weight. It will be seen from the results here presented, that the selection of the seeds themselves has a considerable influence on the production of the crop and should form a factor in the process of breeding.

SELECTION OF PLANTS.

In the spring of 1903 some very choice grain of six varieties of oats, barley, and spring wheat was selected from the crops grown at the Ontario Agricultural College in 1902. Of each of these six varieties, one-sixteenth of an acre was sown with a grain-drill in the ordinary way; one-sixteenth of an acre was sown with a grain-drill by using every second tube of the drill; one-sixteenth of an acre was planted by hand, placing the seeds eight inches apart both ways; and one-sixteenth of an acre was planted by hand, placing the seeds one foot apart each way. It will therefore be seen that one and one-half acres were devoted to this work in 1903. No less than 9,972 seeds of each variety, or a total of 59,832 seeds of the six varieties, were planted by hand. The four methods of planting were used in order that a comparison might be made as to the best method to use in plant selection. It was found that the grain which was sown with the grain drill, either from every tube or from every second tube, gave a very poor opportunity for plant selection. From grain sown with a drill, heads may be selected, but it is practically impossible to make a satisfactory selection of plants, owing, largely, to the uneven distribution of the seed. When plants were grown at unequal distances apart, they varied greatly, owing to the relative amount of soil, moisture, and air, furnished the individual plants by the uneven way in which the seeds were distributed in the soil. On a careful examination of the plants obtained from the drilled seeds, it was found that some of them would be separated from all other plants by ten or twelve inches; while in other cases two or three plants would be growing so closely together that their roots and stems would become so much entangled that it was difficult to ascertain whether there was simply one plant, or whether there were two or three or four plants, until a considerable amount of time and labor had been expended in making the examination. It was therefore decided to make a few selections of heads, but not to make a selection of plants from the crop produced from the seed sown with a machine. The grains which were sown by hand, however, gave an excellent opportunity for the plants to grow under uniform conditions. As all plants in each of the two methods of hand-planting were at equal distances apart, it afforded an excellent opportunity for studying the stooiling properties, the comparative strength of straw, and the size and uniformity of the heads, etc., of the individual plants. When the crops of each variety on the hand-planted plots had reached the proper stage of maturity, careful examinations were made and the results recorded for reference. After this was done, a few of the very best plants were selected and harvested separately. All of the seed of the most promising plant of each variety was sown in the spring of 1904, and nearly all the grain produced in 1904 was sown in the spring of the present year. A number of the other choice plants of each variety were also selected and harvested separately, and afterwards the best seed was selected and sown in single rows in the spring of 1904. From those strains which gave the best satisfaction in 1904, a sufficient amount of seed was selected and sown on uniform plots in the spring of 1905, and the yield and the quality of the crops produced were carefully recorded. The results so far are encouraging. A statement of a few of the records are here given.

INCREASED STOOILING PROPERTIES.

The crops grown from the seeds, planted one foot apart each way, showed the following average number of heads per plant from the selected seed in 1903, and from the seeds produced from the selected plants in 1904, to be as follows:

	Average number of heads per plant	
	1903	1904
Six-rowed barley (Mandscheuri).....	10.8	13.5
Two-rowed barley (Chevalier).....	26.3	31.7
White oats (Siberian).....	13.6	18.4
Black oats (Joannette).....	27.6	46.9

plump seed weighed 35.5 pounds and that from the light seed 24.3 pounds. It is interesting to notice that the crop produced from the large, plump seed

As the seeds were planted exactly the same distance apart in each of those two years, it is quite probable that the influence of the selection made

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Modern Silage Methods. That is the title of our new \$16 page book. It tells everything anybody could possibly want to know about the silage subject. You can't think of a question that it does not fully answer. How to build, from foundation up, all kinds of silos. All about the crops and how to cut and fill. How to feed, with the most complete feeding tables ever published. About 40 illustrations help to make things plain. Used as a text book in many Agricultural Colleges. We have always sold the book for 10 cents, but for a limited time, to any reader who will ask for it, and name this paper, we will send a copy free. Write at once. **SILVER MFG. CO.,** Salem, Ohio.

does not appear to be as good for hay as some of our other crops, and I presume that it would not be advisable to seed the alfalfa in the wheat. When you seed a field to alfalfa you expect to let it remain for several years, and a thin or spotted stand is not at all satisfactory. If it is necessary to plow up such a stand, your seed has been wasted; so I would advise the seeding of alfalfa on a carefully prepared seed-bed, either very early in the spring or about September 15 if fall seeding is preferred.

V. M. SHOESMITH.

Japanese Millet—Turkestan Alfalfa.

I would like a little information in regard to Japanese millet. Will it do well in our dry climate? Where can I get the seed, and at what price? Would you consider Turkestan alfalfa better than common alfalfa on upland? Where can I get the seed and at what price? Please answer through your valuable paper.

GEORGE WORTH.

Rush County.

Although the Japanese millet is usually advertised in the seed catalogues as a very productive crop, it has not proved so at this station; in fact, the yields are so low that we have often not weighed the crop because it has been so small and contained so many weeds. Even if the seed germinates well, the plants do not thrive, and it is, according to our tests, not nearly so desirable a type of millet as the German, Hungarian, or Siberian. However, if you wish to seed a small plot of this millet, you can secure seed of any of the wholesale seed-firms in this or adjoining States. The seed costs about 10 cents per pound, or about \$3 per bushel.

The Turkestan alfalfa which was introduced by the U. S. Department of Agriculture from the Highland in Central Asia, is claimed to be a more hardy variety than the common alfalfa and better suited for growing under semi-arid conditions. The U. S. Department of Agriculture recommends this alfalfa as a desirable type; however, much of the alfalfa-seed advertised by our seed-houses as Turkestan alfalfa does not differ from the common variety. At this station a plot of Turkestan alfalfa, the seed of which was purchased from one of our most reliable seed-firms, and which they claimed to have secured direct from Government importation, has grown successfully, but appears to be not different in yield, or any other respect, from the common alfalfa. Hence, I would suggest that if you try the Turkestan alfalfa you try it in a small way at first, unless good reliable seed can be secured as cheap as the common alfalfa. If you find that you have a more desirable type than the common variety, you can soon secure more seed for seeding larger fields.

Alfalfa on Prairie Sod.

I would like to get your opinion on seeding ten acres of prairie sod to alfalfa. The land is about half creek-bottom, the rest second-bottom. Would it do to break and then disk and work fine with the harrow and sow the seed? If so, would I be likely to get any crop from it this season, or would it be better to seed to millet and sow in the fall? It is usually dry here in the south part of Ellsworth County in the fall. If the millet is put in, can I get a good seed-bed by disking after the millet is taken off? I intend sowing rape for pigs on a lot that has never been plowed but the old sod is dead and the ground is excessively weedy. Can I clean off the weeds and get a seed-bed by disking, or would you recommend plowing? How early can rape be sown in Ellsworth County, and after the crop has been pastured, what crop can I put in to follow it for fall pasture? I find that by reading and following instructions in the "old reliable" KANSAS FARMER I am learning more about farming all the time. I am middle-aged in years, but young in farming. I would like to have my name placed on the mailing list for Experiment Station bulletins.

Rice County.

J. J. HYSSELL.

As alfalfa-seed is quite expensive and as the seeds are small and the young plants of low vitality, requiring a very thoroughly prepared seed-bed, your plan to break up prairie sod and seed to alfalfa the same season would be impracticable. The new soil to be broken up has a good amount of fertility for growing corn, Kafir-corn, or other cultivated crops, and the field would be in a much better condition for sowing alfalfa after it had been cropped a few years. Your plan to sow millet and put the alfalfa in after the millet would be preferable to seeding the alfalfa at once upon new breaking; but it would be still better to seed another field to alfalfa

and plow this up, and in four or five years seed the field that you are about to break.

It is a little early yet for the seeding of rape, so that you will have time to plow your field and harrow it several times to firm it and put it in a good physical condition for seeding; and I think that this would be considerably better than simply disking the field, as I notice that it has never been plowed. Rape may be seeded almost any time from the first of April to the first of August, and if it is possible to divide your lot without much expense, it would be advisable to seed one-half of it about the first of April, and seed the remainder three or four weeks later, and then turn the stock from one lot to the other. If your stock have a large lot which is sufficient to furnish them with pasture, they are liable to allow some of the plants to grow too large, and will continue to eat on some of the newer growth of the others until they are destroyed. The rape may continue to grow and make a fair pasture until late in the fall. If it is mostly eaten off in the summer and does not produce much of a new growth, you may follow the rape by rye, cane or cow-peas for fall pasture, the preference for these depending largely upon your plans for cropping the field the next season, and also upon the nature of your soil. Soil which is inclined to blow or wash during the winter is better protected by a crop which will better survive the winter, such as rye. If you wish especially to increase the fertility of your soil in nitrogen content, the cow-peas would be preferred. These may be seeded broadcast, two bushels per acre; but on account of the cost of the seed, I presume that the rye would be as satisfactory to use for this purpose.

Yellow vs. White Corn.

Kindly inform me whether yellow or white corn is best adapted to this section of the State. Also quote prices on your seed-corn.

THOS. DALY.

Bourbon County.

Good producing varieties of either white or yellow corn should succeed well in your section of the State. It appears that on upland soil many farmers prefer to grow a variety of white corn, while certain varieties of yellow corn are considered better adapted for bottom-land. I am of the opinion that this difference in adaptation, if there is any difference, may not be due to the color of the corn, but rather to the variety; for instance, we have found some varieties of yellow corn that were better adapted for growing on our light upland soil than were other varieties of white corn. In your section of the State, the Boone County White or McAuley's White Dent should succeed well.

Of the yellow dent varieties, the Hildreth, Kansas Sunflower, Legal Tender, and Reid's Yellow Dent corn may be successfully grown in your part of the State. If you prefer an early maturing corn, choose the Reid's Yellow Dent, or if a late maturing corn is preferable, the Hildreth or Kansas Sunflower may be recommended. I have mailed a copy of a letter giving some information regarding varieties of seed-corn, with the addresses of the growers. Our supply of seed-corn is practically exhausted.

A. M. TENENCK.

Pasture.

EDITOR KANSAS FARMER:—In reply to J. N. Hunter, I sowed about ten years ago for pasture, 3 pounds white clover, one bushel Kentucky blue-grass to the acre on cornstalk land; disked and harrowed in March. The freezing and thawing covered the seed. It came up early in the spring and has been a good pasture for hogs and cattle. Crab-grass does not bother this grass as it makes a thick sod. Two years ago I sowed twenty-five bushels of English blue-grass. It came up all right and I commenced to pasture about the first of July. I had a good pasture until frost came. I waited the next spring for my English blue-grass as I wanted the pasture early. I am still waiting and looking. The crab-grass killed out the English blue-grass. I sowed the Kentucky blue-grass and now have a good pasture.

N. B. SAWYER.

Montgomery County.

As long as it is grievous to thee to suffer, and thou desirest to escape, so long shalt thou be ill at ease, and the desire of escaping tribulation shall follow thee everywhere.—Thomas a Kempis.

Tranquillity of mind will often pilot us through many choppy places.

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One pair of 4- and 5-year-old gray mares, weighing 4000 pounds, both heavy in foal to one of the most famous stallions in France; one pair of matched black 3-year-old mares, weight 3500 pounds, one of them has black filly colt at foot, and the other one will drop a colt within six weeks; one 2-year-old black mare, weight 1,700 pounds, of extraordinary bone and finish; one pair of dark gray yearling mares, weight 3000 pounds, will certainly make a show team; one 2-year-old dark gray mare, very smooth and one that will please you.

Every one of these mares are absolutely sound, and of the most fashionable blood that the old country produces. The prices range on them from \$500 to \$1,000, colts at foot not counted. This is an exact description of them, and we guarantee the mares to please anybody looking for good ones.

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Outline of Contents:

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GENERAL FARM BARN CATTLE BARN AND STABLES DAIRY BARN CATTLE SHEDS SHEEP BARN AND SHEDS PIGGERIES POULTRY HOUSES CARRIAGE HOUSES AND HORSE BARN CORN HOUSES AND CRIBS ICE HOUSES	ICE HOUSES AND COOL CHAMBERS DAIRY HOUSES CREAMERIES AND CHEESE FACTORIES SPRING HOUSES GRANARIES SMOKE HOUSES DOG KENNELS SILOS ROOT CELLARS AND ROOT HOUSES BUILDINGS OF VARIOUS KINDS, ETC., ETC.
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With 375 illustrations, 5x7 inches, 404 pages.

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THE KANSAS FARMER CO.
TOPEKA, KANSAS

THE NATIONAL DAIRY SHOW.

(Continued from page 305.)

made butter direct from sweet cream, but which failed because of lack of market for this quality of product. The successful appearance of the radiator on the market would seem to indicate an advanced step in butter-making, though the ultimate result of its appearance is hard to predict.

The National Dairy Show was a wonderful exhibition. Wonderful because of its size, its success, and, more than all, its comprehensiveness. No implement, accessory, or novelty known to the trade was omitted from the exhibits. Every process by which milk is prepared for consumption in bulk, as cream, condensed milk, butter or cheese, was shown in its completeness. In this building the visitor could take his journey from the cow-stable, where the modern methods of sanitation, the feeding of balanced rations, the care of the animals, and the workings of the milking-machine were shown, clear through every operation to the butter-cutter and the automatic scale which delivered the butter to the customer, weighed accurately to the fraction of an ounce, or to the counter where the canned and bottled milk were ready for delivery for the use of the infant or the invalid.

Among the dairy-stable appliances were stock foods, stalls, watering troughs, scales, stanchions, milk-pails and cans, in bewildering array. In addition, there were manure-spreaders, corn-shellers, silage-machinery, and grinders which are accessory to good dairy-farming. There were also various forms of power, including the tread power, gasoline, kerosene, and steam engines, electric- and water-motors. And then the farm telephones, filters, roofing materials, etc., found an appropriate place as accessories on the modern and up-to-date dairy farm. There were also automatic bottle-washers, bottles and bottling-machinery, milk-wagons, butter-colors, boxes and packages, cultures, extracts, sterilizing and pasteurizing machines without limit.

A part of the space in this great building was devoted to the pure-food show. This was made with the cooperation of the Department of Agriculture at Washington. Dr. Wiley, Chemist of this Department, sent an exhibit that was a revelation to most visitors and made each feel sorry for his stomach. This exhibit included the chemical apparatus used in detecting the adulterations in food and drink, and a very large exhibit of adulterations that had been extracted from foods and drinks bought on the open market. One of the most startling features of this exhibit was the samples of cloth stained in brilliant colors with coloring matter extracted from foods and drinks that are daily sold in the open market.

There was a hospital exhibit in which a demonstration was given of the methods of preparing foods for invalid infants. Nearby was a cooking-school exhibit of great interest, while a little farther down the line was an exhibit made by the United States Army commissary department, in which was shown a complete collection of the prepared food-rations provided for use of the soldiers when in the camp, the fort, or on the march. A camp kitchen was in daily use and luncheon was served to invited guests at noon. Those who were fortunate enough to receive invitations were unanimous in their statements that Uncle Sam's soldiers are well-cared for in the matter of food.

In connection with this great show was held the National Creamery Butter-Makers' Association meeting. This meeting was very largely attended, much larger than ever before. Indeed, it furnished the opportunity for the show, but the latter proved such a success that we venture the prediction that hereafter the show will furnish the opportunity for the Butter-Makers' convention. There was held also at this time, the National Dairy Farmers' convention, which had a large attendance from many different States and from Canada, and the last convention of the week was the Pure-Food convention which was also largely attended. These meetings were held in the large hall over the Annex where the cattle were stabled.

It is significant that the United States Department of Agriculture and the agricultural colleges of several States gave such large assistance in making this show a success. The agricultural colleges of Kansas, Missouri, Illinois, Indiana, Ohio, Pennsylvania, Nebraska, Minnesota, New York, and Guelph, Ont., were all represented by professors in charge, a number of whom contributed valuable papers to

the meetings and did everything in their power to add to the interest of the occasion. Kansas did herself proud by sending fifteen students from Professor Erf's Dairy Husbandry Department of the Agricultural College as well as Professor Erf himself, who read a valuable paper at the meeting.

The great objection to dairying as a life business and the one which, more than any other, prevents many farmers from engaging in it, is the necessity for milking the cows by hand and the difficulty of obtaining the right kind of help. It has been the dream of inventors for years that some kind of a milking-machine could be made which would remove this objection to the most profitable branch of agriculture. Milking-machines have been in use for several years but they seem not to have arrived at perfection and their use has not become general. In one corner of the cow-stable in the Annex of the Coliseum, was shown the latest milking-machines in daily operation. This machine seemed to do its work well and to the comfort of the cows. During the week a newly-calved Guernsey heifer was milked quietly and with apparent comfort by this machine while attempts to milk her by hand had been resented by vigorous kicks. This machine is operated by the application of power to a pump which compresses the air and draws the milk from the udder. The only objection that could be raised to the machine lies, not in its work, but in the difficulty of keeping it clean. Long rubber tubes connect the suction cups which surround the teats, to a central receptacle and it is possible to milk a number of cows at the same time with one machine. If this machine can be kept thoroughly clean, it would seem that a very long step in advance has been made for the dairy industry. One dairyman of Wisconsin was so pleased with the machine and its operations that he ordered ten of them for use in his home dairy.

In spite of the small accommodations available in the Annex, and in spite of the fact that none of the breeders' record associations gave financial assistance to the show, except only the Holstein-Friesian Association, the cattle show was a success. Cattle were shown from Canada to Kansas, though some of those who made entries were prevented from shipping by reason of sickness. The show was so successful that it is sure to be continued.

The success of this show as a whole has induced the management to change the name from The National Dairy Show to The International Dairy and Food Show. This change was induced more perhaps by the exhibits of dairy cattle from Canada and by the wonderful exhibit of pure food shown by the Department of Agriculture and other exhibitors, than by any other reason. One of the interesting features of the show was a large booth fitted up in very attractive style by Swift & Company in which was shown milked chickens, both alive and dressed, ready for shipping. A capable cook was in attendance who fried these chickens from time to time and gave the visitors samples. Visitors were unanimous in pronouncing the flavor excellent and different from anything before tasted.

Taken altogether, the National Dairy Show was a wonder. It was interesting to the city people as well as to those from the dairy farms. It was a straight business exhibition with no frills or spectacular features. The booths were nicely decorated and the general view of the large Coliseum was attractive, but each exhibit was specially arranged for its educational value and not for mere entertainment or amusement. The city man and woman in attendance had open to them a new world about which they may have read, but of which they could know little or nothing by observation or experience.

It is a matter of pride that the establishment and the successful issue of this initial dairy show, were due entirely to the efforts of two Kansas men, Mr. James A. Walker and Mr. W. W. Marple, were president and vice-president respectively, and to them and them only, is due the wonderful success of this wonderful exhibition. Both these gentlemen are well known to Kansas people by reason of their connection with the Blue Valley Creamery Company, formerly of Marysville, Kans., but now of St. Joseph and Chicago. Their energy, ability and money made the show possible, and to them is due all praise.

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A cordial welcome awaits every enterprising milk-producer, who appreciates having his product handled economically so as to get the greatest returns and that in Cash.

It's a pleasure to answer letters. Will be glad to hear from you.

Very respectfully,

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train over the Santa Fe Route from Atchison, Kans., to Superior, Neb., are made more manifest. Nearly 4,000 farmers were enabled to hear the lectures which were given by men of State and National reputation. For nineteen years the Kansas Dairy Association has held annual meetings in different cities of the State, but was never successful in drawing together any considerable number of farmers. It is estimated by those in a position to know, that the number of farmers who attended the meetings on the special dairy train, was greater than the total number brought together in all of the eighteen preceding annual meetings of this Association. It is also stated on the highest possible authority, that the number of farmers in attendance upon these lectures on the train, was larger than the total number brought together by the annual meetings of the dairy associations of Michigan, Wisconsin, Iowa, Illinois, Indiana, Missouri, and Nebraska, combined.

The idea of the dairy train was conceived by Secretary I. D. Graham, and its success was due to his forethought and careful management, backed as he was by the Santa Fe Railway Company.

A report of the proceedings of the dairy train, together with the resolutions adopted at the annual meeting at Abilene on Saturday after the termination of the trip, were published in the KANSAS FARMER of March 8. We now take pleasure in presenting our readers with synopses of the lectures delivered on that train. These will appear as fast as space will permit.

Why You Should Dairy.

Address by W. W. Marple, of Chicago, delivered at various points on the route of the Kansas State Dairy Association Special Dairy Train over the Santa Fe Route, Feb. 27 to March 3, 1906.

It is certainly a privilege to talk to you on a subject that is of such vital importance and one in which I am so deeply interested.

You are certainly to be congratulated on living in a community through which a railroad runs, operated by a corporation sufficiently interested in the development of the resources and in the people who live along its line, to come to them with a fund of information such as they have on this occasion.

You are to be congratulated on living in a state where there is a state institution such as you have at Manhattan, and where the officials of that wonderful institution are so much interested in the development of agriculture throughout the state.

It is of very great importance to the man who is contemplating some line, as to why he should dairy. There are a number of reasons, all of which are feasible and true. It is a difficult matter to decide which one of these reasons is the strongest and most important. A very strong reason, and probably the most attractive, is that it pays more than any other branch of agriculture. The reason that it pays is that it forces into use an element in our make-up that is most valuable; it compels us to use a force that we have that brings the highest price under all circumstances; it gives us an opportunity for using our mentality and it is this element in our make-up that, when placed on the market, brings the highest price. A man may have a collegiate education; he may be an artist of renown; he may be thoroughly posted on all the arts and sciences and yet be only worth about a dollar a day for digging a ditch.

Whenever he engages in any line or pursuit that gives him an opportunity to use his brain, he puts himself in a position to realize the greatest returns for his efforts.

The young man who has been dissatisfied on the farm in other lines, finds this business attractive because it not only returns to him speedy results, but returns them in cash. Under other circumstances, he has been forced to wait a full year to know what he has realized and whether he is going to realize anything for his labor and his time and his effort. In dairying, he gets immediate results; if he is advised to use a certain feed for his dairy, he can tell in forty-eight hours whether that advice is good or not, while if he is advised to use a certain kind of seed for the production of a certain kind of grain, he has to wait a year before he knows whether his advice was good.

It is possible for him to increase the results from his dairy by carrying out certain plans and adopting certain rules and he gets this increase right away. There is no limit to what he is able to accomplish through the influence of a system brought about by the exercise of his mind force. He can keep books; he can balance his accounts every day the same as a bank, and with these

opportunities, the business continues to grow more fascinating, and where once he hated the humdrum life on the farm, it becomes attractive to him and he is disposed to remain there.

I really do not know that it is necessary that any other reason should be given as to why we should dairy, but there are others and in the few minutes that have to talk to you, I want to enumerate some of them.

There is probably nothing we are so much interested as our own homes. In the busy, active walks of life we are glad to retire to the seclusion of our home, let it be ever so humble, and it is there that we get our satisfaction and perfect rest. We are interested in beautifying and adorning these homes and making them as attractive as possible. While our special interest is in our own home, in a general way we are interested in all the homes in the country in which we live. A man traveling over the country in a balloon, if dropped down blindfolded and his blindfold removed, if in a dairy country, would recognize it as such at once. The general appearance of the country, including the good houses, good roads, good barns, kept-up fences, and all those things which add to the beauty of a rural district, are evidenced, and the cause is plain. There is every inducement in the dairy country to do this. 'Tis not only true, but the highest state of cultivation exists there. The productiveness of the dairy farm is far in excess of that of any other. This is a very prominent reason why we should dairy.

I believe that we have no more right to take from the soil its fertility and leave it in a depleted condition for the next generation, than we have to take the oxygen from the air that we expect them to breathe, and in consequence, make it impossible for them to live any length of time. The land that we occupy, while we may have a deed to it, is not ours; it is only loaned to us, and it will be transferred to someone else when we are through with it, and that will be in a comparatively short space of time, and it should be the one object of our lives to turn that over to our children in as good condition as we found it. It would be an utter impossibility to do this were we to continue to raise grain year after year. There is no other business in which you can engage that can bring about this effectually but dairying.

There are many reasons why we should dairy but none why we should not.

The placards that are hung around this car are full of wisdom. There is one that says:

"A carload of corn is worth \$250. A carload of butter is worth \$5,000. Convert your corn into butter and save the freight on 19 cars."

The manufacturer studies economy and adopts those means by which he can produce the finished product and get it to the consumer for the least amount of money. There is no question but that to reduce corn to butter is decidedly the cheapest method of getting the product of your farm to the highest priced market.

There is another placard which says: "The dairyman leaves his children a better farm than he got. The grain raiser does not."

This is true. A man at Marshfield, Mo., bought a farm at \$5 an acre. This had been cultivated in grain for years and produced an average of about 15 bushels of corn an acre and about 6 bushels of wheat. He has had this farm ten years and has done extensive dairying. Last year his corn crop was an average of 75 bushels to the acre and his wheat crop 25 bushels. His farm is worth at least \$30 an acre and this result and these conditions are brought about by the manner of business that he has engaged in. He has been returning to the earth the fertility that it has been robbed of for years.

In conclusion, to sum up the reasons why we should dairy: It is pleasant business; it is profitable business; it is an attractive business to those who are engaged in it; it makes better farms more attractive homes; a more fascinating country and a better people.

Why We Should Dairy.

Address by Hon. Ed. H. Webster, Chief of Dairy Division, Bureau of Animal Industry, United States Department of Agriculture, on the Kansas State Dairy Association Special Dairy Train over the Santa Fe Route, Feb. 27 to March 3, 1906.

There are a number of important reasons why the Kansas farmer should engage in the dairy business. The first among these is the natural adaptability of the country to dairying. Few sections furnish such an abundance of cheap feed as can be produced on Kansas farms, and few can grow the feeds

**WORLD'S BEST BUTTER
DE LAVAL SEPARATOR TRIUMPH
AT NATIONAL DAIRY SHOW**

The great DAIRY SHOW and NATIONAL BUTTER-MAKERS' CONVENTION held at CHICAGO, February 15th to 24th, awarded ALL HIGHEST BUTTER PRIZES to entries made from DE LAVAL SEPARATOR CREAM, the prizes and the scores being as follows:

GRAND PRIZE—GOLD MEDAL

A. CARLSON, Rush City, Minn. Score 97

SILVER MEDAL

J. E. HOWE, Oakland, Minn. Score 96½

SILVER CUPS

E. J. SIMONSON, Milton, Wis. Score 96
W. H. BECHTEL, Caro, Mich. Score 96
LOUIS NIELSON, Camp Point, Ill. Score 96
F. L. ODELL, Greenfield, Iowa. Score 95½

Out of the total 610 butter entries 559 were DE LAVAL users, the other 51 representing the users of all other separators combined, while of the 496 entries scoring 90 and over, 463 were DE LAVAL made, the other 33 covering all competitive users together.

All this is in keeping with what has happened at every previous Convention Contest of the National Buttermakers' Association since its organization in 1892, all highest awards having been made, without exception, to DE LAVAL users.

While in evidence of the recognition of DE LAVAL superiority by the best buttermakers everywhere, it is important to note that the proportion of DE LAVAL made entries has never been less than 85 per cent, and at the present Great Show was over 91 per cent of the total number.

A DE LAVAL catalogue, gladly sent for the asking, will help to make plain WHY under like conditions DE LAVAL cream produces butter superior to that which can be made in any other way. Write for it to-day.

The De Laval Separator Co.

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that are so peculiarly fitted for the production of milk and for the growth and maturity of dairy stock. The alfalfa fields of Kansas furnish a material that has to be bought at high prices in other sections of the country. That crop, with the abundance of corn that is grown on every hand, makes a complete balanced ration for the production of milk. Nothing is better fitted for the growth and development of young stock than alfalfa hay.

While geographically Kansas is not situated as close to the market as many dairy sections, yet when the Kansas farmer comes to paying the transportation charges on dairy products from his farm to the great dairy markets, he finds that, for all practical purposes, he is as close as the man who lives within fifty or one hundred miles of New York or Chicago. This makes it possible for him to compete successfully with dairymen much more favorably located according to the map.

Another important reason why Kansas farmers should engage in dairying is that it will keep up the fertility of the soil. Most farmers do not realize that continual cropping year after year will in time deplete the soil of its natural fertility and bring the owner to the same situation as is found in many Eastern and Southern sections at the present time. Many States East and South have a fertilizer bill of twenty to thirty million dollars a year. This is incurred simply because the farmers of those sections have attempted to crop year after year, selling this crop from the farm and returning nothing to the soil to replace the fertility taken away by each growing crop. Just as sure as the Kansas farmer continues in growing corn or wheat year in and year out, he or his children will come to this same condition. One-half of the income of the farm will have to go for fertilizers each year in order that the next crop may be grown. In dairying, the crops grown on the farm and fed to the stock are in the greater part returned to the soil in the shape of barnyard manure. About 85 per cent of the value of the feed given to the animal can be returned as fertilizer value to the land. In dairying the character of the crops that are grown on the soil are less exhaustive than in many other kinds of farming. A crop of clover or alfalfa, instead of exhaust-

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20% to 50%

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Davis Cream Separator

No other skimming device known so surely gives you all the cream, and none does it with so little work. It is absolutely the simplest and easiest running separator. Only 3 pieces in its bowl. Think of the ease of keeping such a bowl clean. It never can get out of balance. The tank is only 18 inches high, no high lift. You should know all about the Davis. Investigate before you buy. Write to-day for money saving catalog No. 125.

DAVIS CREAM SEPARATOR CO. 64 O North Clinton St., Chicago, Illinois.



ing the soil, builds it up. It adds nitrogen and humus to the soil, and although large crops can be removed from two to four times a year the soil gradually becomes richer in these elements. A dairy farm will gradually become richer year by year, while a neighboring farm on which is grown wheat or corn to be sold from the place, will in time become so exhausted that these crops will not pay.

Another reason why dairying should be of interest to every farmer, is that by converting the crops grown on the farm into the finished product, an added profit can be obtained. The dairyman of the East and of the South has practically to feed crops worth from two to four times per unit value of the same crops on Kansas farms, and yet these crops can be fed to dairy animals profitably, and butter sold in the same markets in which the Kansas product finds its outlet. The farmer who grows alfalfa and corn and ships it East to the dairymen, allows that dairyman to have the profit derived from manufacturing this cheap product into a finished article. The Kansas farmer should think of this and convert all such crops possible into the finished product on his own farm.

Another reason why dairying will more and more appeal to the Kansas

HOSPITALS CROWDED

MAJORITY OF PATIENTS WOMEN

Mrs. Pinkham's Advice Saves Many From this Sad and Costly Experience.



Miss Luella Adams

It is a sad but certain fact that every year brings an increase in the number of operations performed upon women in our hospitals. More than three-fourths of the patients lying on those snow-white beds are women and girls who are awaiting or recovering from operations made necessary by neglect.

Every one of these patients had plenty of warning in that bearing down feeling, pain at the left or right of the abdomen, nervous exhaustion, pain in the small of the back, pelvic catarrh, dizziness, flatulency, displacements or irregularities. All of these symptoms are indications of an unhealthy condition of the female organs, and if not heeded the trouble may make headway until the penalty has to be paid by a dangerous operation, and a lifetime of impaired usefulness at best, while in many cases the results are fatal.

Miss Luella Adams, of Seattle, Wash., writes:

Dear Mrs. Pinkham:-

"About two years ago I was a great sufferer from a severe female trouble, pains and headaches. The doctor prescribed for me and finally told me that I had a tumor and must undergo an operation if I wanted to get well. I felt that this was my death warrant, but I spent hundreds of dollars for medical help, but the tumor kept growing. Fortunately I corresponded with an aunt in the New England States, and she advised me to take Lydia E. Pinkham's Vegetable Compound, as it was said to cure tumors. I did so and immediately began to improve in health, and I was entirely cured, the tumor disappearing entirely, without an operation. I wish every suffering woman would try this great preparation."

Just as surely as Miss Adams was cured of the troubles enumerated in her letter, just so surely will Lydia E. Pinkham's Vegetable Compound cure other women who suffer from female troubles, inflammation, kidney troubles, nervous excitability or nervous prostration.

Mrs. Pinkham invites all young women who are ill to write her for free advice. She is daughter-in-law of Lydia E. Pinkham and for twenty-five years has been advising sick women free of charge. Address, Lynn, Mass.

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The "old reliable" KANSAS FARMER, established in 1863, the best genuine agricultural weekly paper in the West. It solves the problems for the busy farmer. It helps and interests every member of the farmer's family. It has 12 regular departments. Its contributors are expert authorities. It contains 24 to 32 pages each week. Sent on trial three months free. Test it. Clip the coupon below.

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I accept your trial offer to new subscribers to send me the KANSAS FARMER three months free. At the end of the three months I will either send \$1.00 for a full year from that date or write you to stop the paper, and you are to make no charge for the three months' trial.

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My spring 1906, catalogue is ready and will give you prices on plants from \$1.50 to \$4 per thousand. A postal will bring it to you.

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farmer is that land is appreciating in value and methods of farming must be found that will pay the interest on the investment. Land is bound to increase in value as the years go by. The public lands have been exhausted and the young man of to-day must buy a farm and pay a good round price for it. He must of necessity follow different methods of farming than were followed by his father who homesteaded 160 acres in the early settlement of the State. In countries where land is very much higher than it is in the United States, dairying has been found to be one of the most profitable industries on such lands. The farmers of Denmark, Northern Germany and the islands of Guernsey and Jersey are valued at \$500 to \$2000 per acre, and dairying is practically the only business that can be entered into on a large scale, which is profitable on such a high-priced land. In our own country the high priced lands of Iowa, Illinois, and Wisconsin are almost-invariably dairy sections of those States. The famous Mohawk Valley in New York is world-renowned as a dairy section. In this valley, lands are very high in value. One can go only a few miles from this valley and find the abandoned farms of the East. These farms are abandoned because dairying was not a feature of agriculture on them. Thus it is worth while for the Kansas farmer to consider that with the constant increasing value of his lands, means must be taken to rearrange his farming operations in such a way that he can make not only a living, but will be laying up something for a rainy day on the investment which he finds himself the possessor of.

Another encouraging feature in dairying is the fact that it brings in a constant, steady income. The farmer who raises hay or grain or feeds cattle has but one period of income during the year, and he must arrange his work accordingly. He can never tell at the beginning of a year what his income for that year will probably be. Adverse climatic conditions may come and crops may fail; the cattle market may go down and apparent profits be turned into loss. But with a good dairy herd on his farm he is assured of an income at least once a month, and in many cases oftener than this, throughout the entire year. This enables him to regulate his expenditures according to his income, and keeps him out of debt.

One of the features which is encouraging about the dairy business is that the presence of a dairy herd on the farm does not necessarily mean that the farmer shall stop growing wheat or corn, or any other crop, for sale, but dairying fits in nicely with these occupations and insures a steady working income to carry them on. In cases of this kind when crops fail, the farmer still has his living, and if he has a wisely-selected herd, more than a living.

The occupation of dairying gives constant employment throughout the year to labor. This to some farmers is an objection to business, but if they would view the matter in the light that any business man would a proposition of this kind, they would readily see that steady employment is the only means by which the most value can be obtained for the labor employed. The hired man who works three months or six months of the year and then has to seek another place or another occupation for the balance of the year, is

never as good a hired man as the one who can be assured twelve months steady work at a fair income. The merchant or other business man who would try to run his business on principles that seem to prevail among many farmers, would find himself bankrupt at the end of the year. He from necessity must stay by his business every working day of the year. As land and labor become higher in price, the farmer will see that he must follow a similar method in the management of his own affairs and so regulate his farm operations that he can give labor constant employment throughout the year, and use it in such a way that it will be profitable to him.

The last reason I wish to mention why dairying should be of importance to the Kansas farmer is that it requires a better man to be a dairyman than to follow almost any other line of agricultural pursuit. When the farmer secures for himself a herd of cows and begins to study their needs and the kind of crops to grow, the kind of stock to own and how to feed this stock in order to get the maximum amount of milk; when he begins to study the selection of animals, to eliminate the poor members from his herd and to study how best he can market his products, he is engaged in a business that is going to make him a broader man in every way; he becomes a more intelligent and better citizen in the community in which he lives. One has but to look over the general condition of things in our own country to see that this is practically a matter of fact. In localities where some single crop has been for generations the one mainstay of the farm, one does not find the high grade of intelligence among the farmers as he does where the farmer has engaged in some branch of the live-stock industry, and I believe that it can be said without contradiction that the better developed dairy sections of our country are also better developed along other lines; they stand for better things in political and social life; they have better homes and are educating their children to become better citizens.

For these reasons and others that I have given you, it seems to me that the Kansas farmer should carefully consider the question of dairying as one of the important industries that should engage his attention.

Why the Kansas Farmer Should Dairy.

Delivered by Prof. E. W. Curtis, Kansas City, on the Kansas State Dairy Association Special Dairy Train.

There are two classes of farmers in Kansas to whom these remarks can be addressed: The farmer who is handling beef cattle, keeping his cows for the purpose of raising the calf, and the grain farmer.

Speaking to the former class, it is well that we take account stock of just where we are in the cattle-raising business. It is wise in any line of business, for us to stop occasionally, inventory, and figure out our profits and losses.

The Kansas farmer who keeps a cow a year for a calf, must figure about as follows: If he hires it done anywhere in the State, it will cost him \$8 to winter a cow. It will cost him on an average of \$3 to summer her. The interest on the money invested in the cow is at least \$2. He will average through blackleg or other causes at least 10 per cent losses on calves after they are born, which figures at about \$1.50. Not over 80 per cent of the cows will calve each year on an average, which figured out will increase the cost of keeping his herd at least \$2 per head, which makes a total cost to keep a cow one year \$16.50. These are actual and fixed charges and he is not taking into consideration the fact that year by year the cow is growing older and less valuable.

We would like to ask any farmer how much he received for calves last fall, or how much those calves would be worth, should he want to sell them. He will tell you that steer calves were worth on an average of \$15; and the heifer calves on an average of \$12 and we believe it is very conservative figuring indeed, to say that the average calf in Kansas was worth last fall not to exceed \$13.00.

Many stockmen will tell you these figures are entirely too high. Accepting them as true, however, it shows that the Kansas farmer who is keeping cows for their calves, is losing at least \$3 per head; and we know thousands of Kansas farmers who are keeping a bunch of cows year after year and wondering why the cattle business is not profitable.

Speaking now to the Kansas grain farmer, we want to call your attention to a series of reasons as to why dairying would be more profitable.

(1) Dairying will take less fertility

from the soil than any other class of farming. We believe every farmer in the State wants to deliver his farm to his children as rich in fertility and as valuable in productive power as it was when he first began farming it. We especially desire to call your attention to the amount of fertility you are taking from the soil if you are raising any of the following crops:

Wheat	8.63
Corn	6.80
Oats	7.88
Sorghum or Kafir-corn grain	5.94
Hay	6.00
Cream	1.00
Butter50

Figures furnished by the Department of Chemistry, Kansas State Agricultural College, Manhattan, Kans.

In other words, you are taking \$8.63 worth of fertility from the soil in every ton of wheat which you haul away. This ton of wheat will sell for less than \$20, whereas, a ton of butter selling for \$500, takes but 50 cents worth of fertility from the soil.

(2) Cream and butter are condensed products. Nothing can be made or grown on the farm which brings as much per pound. Farms remote from market, and communities far from railroads, can send their butter to market, or their cream to the creamery with the least possible expense. Hardly any other farm products can be loaded a hundred to a thousand dollars worth at a time, upon a wagon, and drawn to a shipping point so readily as can butter. The dairyman can condense tons of fodder and crops grown on the farm into dairy products, and send them to market in a compact and portable form.

(3) Butter is a finished product. It is made ready for the consumer, either in the private dairy, or the cream can be shipped to the large creamery concerns, who can probably manufacture it more economically than on the farm.

Much that is produced on the farm is raw material, and must be manufactured or otherwise prepared for use after leaving the farm.

(4) Dairying brings in a constant income. The man who sells crops of any kind has to wait until he can market his products once a year. There is little satisfaction in this. It is unbusinesslike to go without cash fifty-one weeks of the year and then have a lot of money come in at one time. The dairyman has an income nearly fifty-two weeks in a year.

(5) Dairying gives constant remunerative employment. The grain or potato grower must spend a large part of the year in enforced and demoralizing idleness, but the dairyman finds profitable work throughout the year, and his work is most profitable in the winter time.

(6) On the dairy farm the work is better divided. The grain harvest comes so close to haying that it often gets mixed up with it to the detriment of both; but where corn is grown and put into the soil for dairy feed, and not so much or no grain raised, the harvests are several weeks apart. Then in winter dairying, there is a let up in the dairy work at the busiest season of the year on the farm, while the dairy needs the most work when other farmwork is lightest.

(7) Skill and brain work get better pay in dairying than in any other branch of farming. To produce fine dairy products requires something besides hard work. The dairyman must have knowledge and skill of dairying. These are required in breeding and feeding dairy cows, and in handling dairy products. And the care bestowed and the skill exercised pay better in hard cash, than they do in other branches of farming.

(8) There is more room at the top, greater opportunity to improve than in any other farmwork. Cows produce from 150 to 500 pounds of butter per year, and the butter sells from 10 cents to one dollar per pound. No other branch of agriculture shows anything like this or gives such a chance to rise.

(9) Taking the country through, there is no kind of farmwork so well suited to women and children as dairying.

(10) Dairying leads to thoughtfulness for the comfort of animals, and thus tends to morality. There is something demoralizing about horses. Men who work in horse stables are rough as a rule, but cows have an opposite influence. To do her best, the cow must be made as comfortable as possible in every way. She will tolerate no neglect or cruelty. She is a teacher of gentleness and kindness.

(11) Dairying is the most progressive branch of farming. Some of the changes for the better that ten years have brought, are the Babcock test, the improvements in separators, etc.

(12) Dairying pays better than any other branch of farming, both actually

and prospectively. Look at the prices of farm products. The prospect is poor for many products, but butter is high in all markets.

There is no business which holds out more inducements to the young people on the farm. It is adapted to a wider area of country than any other agricultural pursuit. Noxious and fungus diseases cause less injury to grass, alfalfa and corn than any other farm crops, and these three are the great dairy foods. The future to the skillful dairyman is full of promise and hope.

With such facts as these before him, I think the farmer who is puzzled to make both ends meet at present, must get down and do some hard thinking. One of the first things that strikes many, is that such a profitable branch of business must soon be overdone. If he was in possession of all the facts, however, he would not think so. There is a greater unfulfilled demand for butter to-day, than there was ten years ago, and this, notwithstanding the fact that butter is higher now than at that time and many times as much of it is made. The supply grows fast, but the demand grows faster.

Families who formerly used one pound, now use three in the same length of time, and those who ate almost none, now have discovered that it is a cheaper and better food for young and old than meat.

The fact is right here in a nutshell, that any farmer who takes up dairying for a business, and follows it intelligently, using the best tools and implements for his work, will have profitable, prosperous, continuing business so long as he may follow it.

Some Points in the Selection of a Modern Dairy Cow.

Delivered by Prof. Oscar Erf, Chief Dairy Department, Kansas State Agricultural College, on the Kansas State Dairy Association Special Dairy Train.

A modern dairy cow as she exists is artificial. She is to a large extent the creation of man's hand. She is the triumph of mind over matter, and, such being the case, there is a natural tendency in the modern cow to retrograde. In the breeding of live stock there is no such thing as standing still. We either progress or we go backward. Therefore, it is necessary that we must breed to an ideal and have the proper knowledge of what this ideal should be.

It is probably best that we take up some points of what should indicate the modern dairy cow. There are many who claim that the broad forehead and the large eye are indicative of large nervous force, but we have found that some of the modern dairy cows with a straight, long head have as good nervous force as those having great, broad foreheads. But I have never yet found a cow with a small nasal organ and a small jaw, that was a good eater. Since man develops her for the purpose of turning food into milk, it is quite essential that she be a good eater, and a good eater is almost universally found in a cow with a large, strong jaw.

I like a cow with a long, slim neck, which is known as a "ewe" neck, one that drops down and comes up about her withers. A fine, thin neck is as a rule an indication that the cow will not put fat on her back, which on the market is worth from three to five cents a pound, but rather convert the feed into butter-fat in the pail, which is worth from 18 to 30 cents a pound. A short, jumbled-up neck generally indicates, if the cow is from a large milk-producing family, a large flow of milk at flush, but when she is far along in lactation the feed will go onto her back.

When we find a cow that slopes down from her shoulders and down from her legs—taking her from her withers and looking backwards toward her belly—and widens out into a wedge shape, it indicates a continuous flow of milk.

We must bear in mind that the ordinary cow in the country is a robber. She robs her owner during the last four months of lactation, of the profit that she has made in the first six months. This is particularly true of the Kansas cow. The right kind of a cow is one that will pay her way after she has been milked for six months. The average cow of Kansas produces a little less than 100 pounds of fat per year. It requires about 175 pounds to pay for the care and feed of the cow. There are a great many cows that produce from 200 to 300, and even 400 pounds of fat per year. Such cows become exceedingly profitable, but the great problem with the average farmer is to find these particular animals. I know there are many farmers who do not keep records of their cows, that will point with great pride to the fact that this cow gives 20 to 30 quarts of

milk, or even 40 quarts of milk at flush. I do not care anything about this. The point I want to know is whether this cow will in a year give six, eight, or ten thousand pounds of milk. We do not keep our cows for what they give us in their flush.

The large flow of milk is generally attended with a large expense of production. The profitable cow is a cow that is persistent in giving a large flow of good, rich milk. That is the cow that we all want to look for, and that is the cow that we want to own. Now, what I am attempting to describe, as I have said, is not the cow that at flush gives a large flow of milk, but the cow that shows by the year's record the largest flow of milk. I am not attempting to go into the question of how much fat this milk contains. There is no indication known to science or to practical methods to show what the fat in the milk will be. This is more or less of a breed characteristic, which is the nearest indication that we can reach. There are some well-known breeds that have a fairly large percentage of fat in the milk. For me or for any other man to describe what constitutes or what indicates by the appearance of the cow that she gives rich milk would be ridiculous. The best way to determine this is by means of the Babcock test. This machine will determine the richness of the milk, the real money value, no matter whether the cow has a rich colored yellow ear with soft skin, or whether she has a rough hide with thick skin, and I have observed cows with this latter characteristic that produced extremely rich milk.

The cow should have a large abdomen. The abdomen is the god of the cow. It is the place where the feed is converted into blood, which finally is made into milk. Take a cow with a great, deep abdomen, and it is presumed that she has the capacity to take her feed and turn it into milk. Never buy a long, lank cow with no belly. She is a fraud and a delusion. The cow that has the habit of turning her food into milk throughout the year will have a long, deep, wedge-shaped paunch.

The udder is another important point of which one should take due notice, and it is somewhat deceiving. The udder should be large and full. I believe that the greatest mistake that we make to-day in judging dairy cows, is to judge them with full udders. I believe that it is a legitimate plan to judge the full udder and then turn the cow away to be milked, and then again examine the udder to determine whether soft or flabby, or if it is fat, and base the conclusion on this fact that a good udder must shrink to a great extent.

Taking all things into consideration, select the cow that has thin withers, ewe neck, high hip bones spread wide apart, wedge-shaped pot belly, the pot belly being especially essential, and you will have a fine dairy cow. Examine her flow of milk and the milk vein. The younger the cow is the less is her milk vein developed; the older she is the more it is developed. I do not like a long-legged cow. Do not select a cow that has a habit of putting fat on her back. You want a machine, and you want to educate that machine to do your work. It is not within the power of man to make that machine do its work properly in one generation. It must be a matter of continuous breeding to fix a given habit in the cow. Some one might ask, "How are you going to do that?" "I do not possess these high-priced thoroughbred cows. I am not fixed on my farm to maintain the thoroughbred cow." Now I will say to the man who can not put into his herd the thoroughbred breeds, buy a thoroughbred bull. It matters not if it is a Jersey to supply butter, a Guernsey to supply the rich-colored milk, an Ayrshire to give a good flow of milk, or the Holstein to give a large flow, get a thoroughbred bull. Never pick one that is scrubby because he can not with any surety fix the blood or type.

As was stated first, the modern dairy cow is artificial. The bull that comes from this modern dairy cow is artificial. There is a natural tendency of the bovine race of all breeds to revert to their ancestors. There is always a tendency to go back, which naturally complies with the law of correlation, and for this reason we want to use nothing but thoroughbred bulls. Many people believe that because an animal is registered there is a guarantee that he is the sort of a bull to use, but this is a false idea. Unfortunately, with due respect to the herd-registers of this country, the fact of registration guarantees nothing but purity, except



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After the meeting, a practical demonstration of the workings of the device. **A FREE MEETING**—The Santa Fe defrays the expenses incurred in this good-roads educational campaign. It won't cost you a cent to attend the meeting.

A. M. ASHCRAFT'S Public Sale of Shorthorns

AT ATCHISON, KANSAS, APRIL 10, 1906

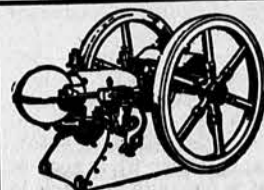
42 HEAD

27 choice cows and heifers, 15 bulls, short yearlings and 2-year-olds—nearly all by the short-legged Scotch bull Harmony's Knight 28509, and are of the same type as their sire. The cows and heifers are all dark red, very uniform; all have been reared on the farm and are all in calf to the good Scotch bull Scottish Minstrel 234970 by Imp. Scotch Mist.

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In cases where the special, authentic record-register is put in, which has been established within the past few years with a few of the leading breeds. This is one of the best things that could be accomplished in connection with the herd-register of each individual breed. No animal is recorded in this registry unless he possesses a superior individuality. An animal from this herd-register means something; and the longer this work is carried on the more valuable it becomes. Take for instance, an illustration. The Isle of Jersey is a little island which is 6 miles wide and 15 miles long. The English people have agents on this island buying all the best cattle each year, and we have men in this country who go to the Isle of Jersey and buy the best that can be found. Understand that the island is depleted year after year, but they replenish the stock and as a rule they continue to improve in the quality of individuals. Why? I think there are two answers to this. One is the ability of the man to breed such cattle. He is a man of heredity. It is a mistake and it is a misfortune in breeding live stock that the son does not succeed the father. In the Isle of Jersey there are families who for generations have been breeders of Jerseys. They have profited by the experience of their forefathers and they keep clear of the pitfalls that their ancestors fell into. The second, and I believe I can not put too much emphasis on it, is that they will not admit into their herd-register any animal that does not possess superior individuality. Therefore, it follows that when an animal is recorded in the herd-book, the fact of registration guarantees more than the purity of the blood. It guarantees the superiority of the individual. Hence, if I wanted a bull to-day to use in a thoroughbred herd, I would not buy him unless I knew his ancestors back three or four or even five generations. Breed him to your best cows, raise the calves, and develop them into cows. Select the best and weed out the poor ones by means of a record of performance which is made by the Babcock test and the scales.

How We Should Dairy.

Address by T. A. Borman, Continental Creamery Co., on Kansas State Dairy Association Special Dairy Train.

The farmer who is producing dairy products is engaged in a manufacturing enterprise just as is the man who makes cream-separators or wagons. It is a notable fact that manufacturers spend a great deal of time and money in keeping a system of records which will enable them to know the exact cost of production, and when this is known, no expense is spared to procure the most efficient help or improved machinery by which they may be able to reduce the cost of the article manufactured. Now since we are operating a cow machine for the manufacture of butter-fat, is it not reasonable that we consider what a pound of butter-fat is costing us? Are we producing this butter-fat at a profit? If only at a small profit how are we to increase that profit? These are pertinent questions and bring us face to face with the conditions we desire to consider.

We Kansas farmers are producing butter-fat under the most favorable conditions. To the left of this train yonder is an alfalfa-field which appears to have yielded luxuriously. To the right is a stalk-field which indicates that Indian corn grows abundantly. On yonder slope the grass is taking on the green of spring. To-day, the sun shines bright and warm. Indeed we are located in a section unexcelled for producing a maximum yield of milk at a minimum cost. Our climate is mild; at our command are the best and cheapest milk-producing feeds on earth

lands. We have at our doors the best creameries in the world bidding for our butter-fat. Competition in the purchase of butter-fat is so close these days that we are assured of the full value for all dairy products sold. We could not possibly be better situated than we are. Conditions, aside from the actual feeding and care of the cow which matter rests with the farmer himself, could not be improved. It appears to us as though all the forces of nature had conspired in favoring the very highest development of the dairy industry in this very spot.

Granting that our surroundings are favorable to the production of dairy products at a profit and that the markets afford an adequate value for the product, there are other factors at all times absolutely essential to successful dairying. Successful dairying is the kind which puts dollars in our pockets and is the only kind of dairying we can afford to consider. Those factors are the man, cow and feed.

The man who will make dairying the most profitable is he who will make a study of all the details in the manufacture of butter-fat as does the man who builds hand separators. By this we do not mean that he must spend years in college, although college training will make a man a better dairyman than if he had not had that training. There are no mysteries surrounding the dairy business which should cause the farmer to feel himself not capable of mastering. There is a plain, common-sense reason for every act in the proper feeding and care of the dairy cow. The farmer who would succeed must read, study and observe sufficiently to know what is good dairy practice. There is money and plenty of it in the dairy business for the farmer who will diligently and conscientiously study the cow and her needs. The difference between good and poor dairymen, as between good and poor lawyers, is in proportion to the study and brain power exerted. Unless we determine to improve as we progress, the future has no reward greater than that of the present.

The first essential step toward increased profits is to know what each cow of the herd is producing, and whether or not any cows of the herd are kept at a loss. My observation and experience, as a dairyman and careful student of dairy practice, shows that fully one-half of the cows milked in Kansas are kept at an actual loss to the owner, if these cows were charged market prices for the feed consumed. Fortunately, however, for us, we are able to be very liberal indeed with our cows, because of the fact that they convert into cash large quantities of roughage which does not have a market value and which would go to waste did the cow not consume it. Yet, we must know approximately what it costs to feed a cow and know what are the returns, to furnish a starting point in the improvement of the herd. It is estimated that the average Kansas cow, handled for dairy purposes, is producing probably 100 pounds of butter-fat per year. We have records of a large number of Kansas herds which are producing from 200 to 300 pounds of fat per cow per year. It is doubtful if the cow producing 100 pounds of fat per year is returning her owner a profit for feed and labor, if the cost of each were carefully figured. It is apparent though that the 200 pound cow with butter-fat selling at an average of 23 cents, as was paid by a big Kansas creamery last year, is quite profitable, and the 300 pound cow is a gold mine. In the case of the good as compared with the poor cow, the cost of labor, stabling, taxes, and feed is practically the same. We recall figures of a herd of 20 cows in which the best 5 cows produced an average of 350 pounds of butter-fat per year at a cost per cow for feed of \$17, the feed charged at farm prices, while the five poorest cows in the herd produced only 120 pounds of butter-fat at a cost for feed of \$12. The average of the five best cows was 230 pounds of butter-fat in excess of the average of the five poorest, and the cost of feed was only \$5 greater than of the poor cows. Briefly, this illustrates the difference in herds and cows. I am sure no farmer wants to milk poor cows if he can get good ones. These figures illustrate the fact also, that we have among our common cows many which are most excellent dairy animals, therefore, the improvement of our herds is very largely a matter of selection.

To know the relative value of each cow in the herd, we know of no better plan than the weighing and testing of each cow's milk. This is not such a big job as many farmers think. A pair of spring balances at a cost of 25 cents hung at a convenient place in

the barn and the milk from each cow each night and morning weighed and recorded for a period of three or four days during each of the twelve months of the year, will suffice. A sample of each milking during each weighing period should be taken and this sample either tested on the farm with a Babcock tester, which will cost the farmer \$4 or, the samples delivered to your cream receiving station where the operator can test each cow's sample, will be equally satisfactory. A record of this account kept for each cow for each month during the year, will give the approximate return of each cow in butter-fat for the year. While the figures given will not be absolutely correct, they will be approximately so and will give the relative position which each cow has in the herd. From this record will be seen which are the cows producing the largest quantity of butter-fat; and we assure every farmer who tries this plan that he will not only be well repaid for his labor and effort so expended, but will be greatly surprised at the showing made by some of the cows which he may have considered as his best cows. There is no reason why the farmer should not try this plan of determining the relative value of his cows. There is no other way known to us by which he can get at the facts other than the plan described. If I should give you any other more simple or reliable plan than this, I certainly would do so.

It will be apparent from the results obtained by a careful test after this plan, that there are cows in almost every herd which are charging their owners three or four times as much money per pound butter-fat as other cows in the same herd. Some of these cows, which charge the largest amount for the butter-fat they produce, will be found very expensive animals to keep. We have found in herds, cows producing butter-fat at as low a cost as 8 cents per pound while the poorest cows in the herd will be charging anywhere from 20 to 25 cents. It is apparent, therefore, that the cow producing butter-fat at a cost of 8 cents per pound is a highly profitable animal, while those charging 20 to 25 cents per pound are running their owners in debt at each milking.

With the scales and test applied to each cow in the herd, we are able to know where we can begin the work of selection. We can, without the slightest hesitancy in the world, so far as injuring our profits from the dairy is concerned, turn into the feed-lot the poorest cows which, we believe, will be in the average herd about one-third of the entire number, and if careful check is made of the returns from the remaining two-thirds, it is our opinion that the farmer will be realizing fully as much money from the milking of two-thirds as many cows as he is milking at the present time. It is a disgrace to the intelligence of our sons, wives and daughters to ask them to milk an old cow which is not returning a profit on the feed and labor. After we have selected the best cows, we should introduce into the herd some butter-fat producing blood, and this can be done either through the use of a male animal from some one of the best dairy breeds or through a common male animal from some cow which is known to be a good milker. We can never grade up our dairy herds by the use of male animals which have been bred for years and years along beef lines. Let us save the heifer calves from the best cows and if the heifers are properly fed and reared from calfhood, they will be cows capable of producing larger quantities of butter-fat than their mothers. We believe it possible to raise heifer calves from our best common cows and a cross of some pronounced dairy strain, which will be at maturity twice as good as their mothers. We are confident that by the proper selection of a male animal it will be possible to eliminate all chances of rearing heifer calves which will not be profitable producers. It is our personal opinion that the grade Hostein cow is the best farmers' cow.

No difference how careful we may be in the selection of cows, unless we feed and handle these cows properly we will be disappointed in the results. Butter-fat is produced only from feed consumed. It requires a certain amount of feed to support the animal body. Everything the cow consumes over and above the feed necessary to support the animal body should, if the cow is properly selected for the dairy, go into the milkpail in the shape of butter-fat. It is necessary, therefore, for a maximum production of dairy products, that we give our cows all the feed they will consume. There is a difference in feed, too. There are cows so fed that they

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keep in good flesh, but which, so far as milk-production is concerned, are absolutely starved to death. This is the reason why we get no milk or milk of little consequence when our cows are fed exclusively on corn-fodder, prairie grass or sorghum. These feeds, alone, do not contain the proper constituents for producing a large volume of milk. We must know how to feed a balanced ration. It is not necessary that we know technically all about a balanced ration. In this country the best balanced ration we can feed is typified in the use of alfalfa hay and corn chop. These feeds will grow on almost every farm in Kansas, and they are the cheapest and best milk-producing feeds on earth. When alfalfa can not be supplied to the cows in liberal quantities, we are compelled to feed prairie hay, and Kafir-corn or some similar roughage, to supply the protein, which is the chief constituent of alfalfa hay, in the shape of some other feed. Most commonly this feed is bran or cottonseed or linseed meal. We do not believe the average farmer is justified in feeding these expensive feed-stuffs. He should, if he is going to make the most money out of his dairy, by all means supply his cows with all the alfalfa they need. We must have a succulence in our feeds. Alfalfa hay is succulent. It comes nearer being June grass than any other dry feed at our command.

We should not overlook the fact that the crop of corn stalks which each year goes to waste on every farm would, if put into a silo, give us an almost indispensable feed in the dairy. We have gone to the expense of planting and cultivating and producing a crop of corn. In the fall we go through the field and take out the ears and leave on the ground fully thirty per cent of the total value of that crop. Substantial silos can be erected at a cost of less than \$1 for each ton capacity. Green corn can be put in the silo at a cost of 50 to 75 cents per ton at the most. Thirty pounds of green, succulent corn-silage makes a day's feed for a cow. Ten acres of average good corn in the shape of ensilage will feed 10 cows from grass in the fall to grass in the spring. Tell me, if you please, how it is possible for us to secure any cheaper feed than this, which in the shape of corn stalks we are now allowing to go to waste on our farms? Tell me, if you please, what building we can erect on our farm for the protection of our grain at any lower cost than the first cost of a silo? The matter of ensilage in this country is a very important one which we have overlooked. Everybody knows that the cow produces the most milk on grass in the month of June. If we are to have a big flow of winter milk, we must supply her with winter feed which comes as near as possible to meeting the requirements of grass. In alfalfa and ensilage we have these feeds.

Let us have our cows come fresh in the fall of the year. During the six or seven months of fall and winter, butter-fat sells at a much higher price than during the spring and summer months. Let us produce butter-fat when it will bring the best price. The fall-fresh cow, properly fed and housed, gives a good flow during the fall and winter, and when grass comes in the spring she again increases that flow

(Continued on page 319.)

The Grange

"For the good of our Order,
our Country and Mankind."

Conducted by George Black, Olathe, Secretary
Kansas State Grange, to whom all correspondence
for this department should be addressed.
News from Kansas Granges is especially solicited.

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STATE ORGANIZER.

W. J. B. Obryhim..... Overbrook

The Grange in Cowley County.

Arkansas City Grange No. 1432, held its regular meeting in Arkansas City. During the evening the annual installation of officers was held. The Pleasant Valley Grange No. 1416, located at Hackney, Cowley County, was invited to attend and aid in the performance of this beautiful ceremony. The weather being fine, both granges attended in large numbers and the meeting was pronounced by all to be a grand success. After the installation ceremony was completed, Arkansas City Grange served an oyster supper which was followed by a literary program.

We hold our regular meetings on the first and third Saturdays of each month, and confer degrees in the first month of each quarter. At the close of conferring the fourth degree, a banquet is served.

At each meeting some question is presented and discussed, two or more being appointed to lead in the discussion, the other members of the grange expressing their opinions impromptu. Some of the questions that have been proposed for discussion are, "Why should Arbor day be observed?" "Why do we favor National aid for the improvement of the public highways?" and other questions of a similar nature. We have also taken up and discussed the question of the removal of the internal revenue tax of \$2.08 per gallon on alcohol denaturalized, or rendered unfit for use as a beverage, for commercial purposes, and after a discussion of this question at length, resolutions were drawn up and adopted favorable to the removal of the tax, which were sent to our legislative committee, and others who represent us in Congress.

SOPHIA DIBBLE, Secretary.

Tell Us How to Create an Interest in Our Grange.

You can not long hold a grange together by introducing outsiders, one after another, to lecture night after night. No matter how entertaining these lectures may be, the interest must come chiefly from within and must consist mainly in securing some work, or a suitable exercise from nearly or quite every member. The grange is a school for the mutual improvement of every one of its members; and to aid in securing this, it is usually a good plan to elect new officers at least every two years. This plan will interest and educate more. As far as the office of secretary is concerned, the practice suggested is condemned in some States on the ground that some persons are peculiarly fitted for that office and should be retained. The plan adopted by Manhattan Grange, in Riley County, in printing a program at the commencement of the year, and assigning the subjects at that time, is a builder of interest. For the young people, try spelling contests, charades, tableaux, dialogues, dramas, singing, etc. This question of how to create an interest in the grange is a hard one to answer, and nearly every grange must be a law unto itself. The lecturer should be the leader in this matter, and when you find a lecturer fitted for this purpose, keep him. The greatest problem in average subordinate granges to-day, and upon the solution of which, more than anything else, depends the future welfare and success of the order is, how to fairly and properly adjust the balance between the entertainment and educational features of the program. The claims of each

must be duly recognized or failure is certain. The young and light-minded must be made to realize that there is earnest work before them in the world, and that the Grange, properly conducted, is one of the most effective instruments for fitting them for their part in the world's work; while the more mature and serious minded should not forget that sociability, recreation and amusement are essential to the fullest development of human power. Mutual forbearance, concession and cooperation must be conceded to the end that the golden mean be attained.

The Patrons' Cooperative Bank Building in Olathe is completed and furnished and is now occupied. It is conceded to be the best finished and furnished bank building in Eastern Kansas, and the granges of Johnson County feel very proud of it.

The Grange is growing in Coffey County rapidly. Five granges were organized in that county from August, 1905, to January, 1906. New members are being added to these granges constantly, and deep interest is manifested.

Kansas Boys' Corn-Growing Contest in Marion County.

WANTED:—Five hundred Marion County boys to enter this great corn-growing contest.

The Kansas State Agricultural College, through the Farmers' Institute Department, announces a corn-growing contest for Kansas boys. The Institute Department will plan for farmers' institutes to be held between October 15 and December 15 in all counties where contests are held. All local corn-judging will be done by members of the institute staff or by judges selected by the college.

Ten prizes will be awarded in each county contest on exhibits of ten ears in each entry. The Marion County Institute will award prizes as follows: For the best ten ears \$15; second best, \$10; the other eight prizes will be \$6, \$5, \$4, \$3, \$2.50, \$2, \$1.50, \$1, according to rank.

The contest will be limited to farmers' boys between twelve and eighteen years of age. The work must be conducted on a farm, not on a city lot. Each boy will be supplied by the committee with two quarts of seed and must agree to plant it carefully, cultivate it well, and exhibit twenty-five ears of corn raised from that seed, at the county institute and corn contest. With his entry he must submit a brief statement as to, date of plowing the ground, kind of land, length of cropping history, methods of preparing for planting, method and date of planting, methods of cultivation, date of gathering his samples, and a statement of number of mature stalks in plot on the first day of August, the number of ears, and the number of barren stalks. Each boy must further agree to attend, if at all possible, at least one session of the county institute.

Of each twenty-five ears, ten will be selected to enter the contest. The entire twenty-five ears to become the property of the institute—the proceeds from the sale of this to form part of the prize fund. Provided—the prize-winners who desire to enter the State contest may retain their best ten ears for the purpose.

All the winners in the county contests will be eligible to enter the State contest—at which the capital prize will be \$100. This contest will be at the Kansas State Agricultural College on January 1 and 2, 1907, under the auspices of the Kansas Corn-Breeders' Association and the Agricultural College. Boys who win in the county contest will be allowed to bring or send the same ears exhibited there, or they may bring a new selection, but from the product of the same seed-corn given out by the committee in the spring for the contest.

Boys in Marion County who desire to enter this contest will send written application to the committee or secretary, stating their preference for white or yellow seed-corn. The seed will be delivered at some convenient point near and the applicant notified. Boys should make application as soon as possible, so as not to be disappointed about receiving seed in March or April. The committee must know how much seed to provide.

(Signed) O. Jolliffe, president; C. F. Stone, vice-president; E. A. Rood, secretary and treasurer, Route 2, Peabody, Kans.; R. Kent, T. I. Furst, R. Kieler, executive committee.

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Tool is made of the finest steel and made in the best possible manner by expert workmen. This quality tells in actual use—it means freedom from constant sharpening—it means long and satisfactory service. Even in the beginning Keen Kutter Tools cost little more than inferior qualities—in the end they are by far the cheapest tools you can buy. Keen Kutter Tools have been Standard of America for 36 years and were awarded the Grand Prize at the St. Louis Exposition.



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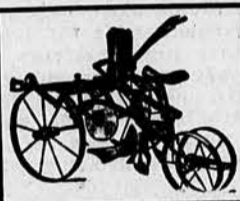
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"The End Comes All."

Afar in an old cathedral,
A beautiful window stands;
It is made from the useless fragments
That fell from the master's hands,
As he fashioned the other windows
With the art none knew so well,
Nor heeded the humble workman
Who gathered the bits that fell,
And carefully smoothed and polished
The atoms of glass so small,
Though some were dark and blemished,
He used them one and all.
He set them in wondrous pattern,
Each where it shone the best,
And his window, sun-illuminated,
Surpassed, by far, the rest.

From the moments that God has given,
We must make life's windows fair,
But the hues are dull and cheerless
In our seasons of sad despair.
Yet with infinite faith and patience
We can mold those darkened hours
Till they show in the whole mosaic
Only the forms of flowers,
And when, our lifework finished,
God lends his light divine,
In full transcendent glory
Those somber tints will shine.

—A. W.

Observance of Legal Holidays.

As some differences of opinion seem to have arisen relative to the observance of legal holidays, I will add these few lines.

When the legislators of our country set apart Thanksgiving Day, Washington's Birthday, Arbor Day, etc. as legal holidays, they intended that they should be observed as such. What is meant by the observance of legal holidays? Does it mean that on such days school is to be dismissed; the children to go home to spend the day in idleness and mischief; the teacher to spend the day as she thinks best, knowing she will receive her money the same as if she had earned it? It does not. The holidays were each set apart for a specific purpose. Washington's Birthday to learn more about "The Father of His Country," Christmas Day to commemorate the birthday of our blessed Savior; Thanksgiving Day to give thanks to God for his manifold blessings. Let the teachers all over our broad land prepare literary programs for such days. Let the program consist of songs, recitations, and select readings appropriate to the day, the teachers, pupils, and patrons all taking an active part.

A day thus spent will prove a blessing not only to the school but to the whole neighborhood, and the teacher will have the satisfaction of knowing that she has not only earned her money, but that she has been instrumental in bringing before the minds of the people the real object of a holiday.

EDITH MAY KERR.

Stockton, Kansas.

Fruits and Nuts.

There is a new theory for health which possibly goes to the extreme as most new fads do. It is that of uncooked foods. It maintains that cooked foods are dead, and that dead things can not make life. But however that may be, there are many uncooked foods that are healthful and pleasant to taste, that ought to be used more freely. Nuts and fruits have never been fully appreciated as a food, by the masses, but have been used between meals and at bedtime when food was not required, and consequently often caused indigestion; hence they were thought to be unwholesome. In an article on the subject of fruit as food, W. C. Barry says:

"In spite of all the opportunities and advantages we possess, and the cheapness of fruit, how many families fail to enjoy nature's food and nature's cure for many of the ills which afflict humanity. Our preference seems to be to experiment with drugs and to employ remedies which offer only temporary relief at best.

"We have yet to learn the full value of fruit as food. We should cultivate a taste for it, enjoy it, and derive the benefit from its health-giving properties. Every day in the year fruit of some kind should find its way to our tables, not merely as a part of the menu, but obtainable at all times, presented attractively and temptingly if you will, so that it may be partaken of easily and frequently. There are many, perhaps, who have never acquired a taste for fruit and who have little regard for it. To all those we can safely say that they are missing much, and for health's sake, they can not afford to dispense with it."

One can not think of a farm without its orchard and bushes of small fruits. Time is well spent, and space is far from wasted when used for such purposes, especially for an apple-orchard.

The crop is not always sure in Kansas, but what crop is? It is profitable, however. Let me quote from John Burroughs, the naturalist:

"The apple-orchard is sure to bear you several crops besides the apple. There is the crop of sweet and tender reminiscences dating from childhood and spanning the seasons from May to October, and making the orchard a sort of outlying part of the household. You have played there as a child, mused there as a youth and lover, strolled there as a thoughtful and sad-eyed man. Your father, perhaps, planted the trees, or reared them from the seed, and you yourself have formed and grafted them, till every separate tree has a peculiar history and meaning to your mind. Then there is the never-falling crop of birds—robins, finches, king-birds, orioles, red-birds, starlings, and others, such a crop!"

There is the early apple and the late bearer and all kinds in between, so that there is a succession; and it is possible, even without the cold storage, to adorn the breakfast-table with a plate of shiny apples the year round. An apple is a good thing to begin the day with. The Philadelphia Bulletin quotes a physician as saying:

"I know a woman who cured a drunken husband without his knowledge by keeping always a plentiful supply of good apples on the dining table. The man ate these apples and finally stopped drinking altogether." This cure is entirely within the reach of possibility. The same physician advises any one afflicted with the love of drink to "eat three apples a day, and the horrible craving will gradually leave him. The cure will be greatly helped along by smoking as little as possible."

Another editor adds his testimony in favor of the use of fruits:

"Just after eating a good apple, a cigar or pipe will not taste very good. I know, for I have once been a smoker myself. And when you get all the good fruit that you want, especially some of a more acid character, such as apples, currants, lemons, oranges, grape-fruit, peaches, and plums, there will be little craving left for strong drink. Many of our drunkards are made in the kitchen where an excess of greasy food is prepared. Let the cure come through the food also, by adding a free supply of acid fruits to the daily bill of fare."

Let us not despise the Kansas apple. I am reminded of a story I have heard a gentleman tell. He was walking along the street in Cleveland a few years ago, when he observed an overgrown boy examining a bunch of bananas hanging in front of a grocery store. When he came up to him the young man said, "What's them?" When told they were bananas he replied, "Are they good to eat?" He was told that some people liked them. After careful examination of the bunch he said, "Are they any better 'than our apples?" I do not know how the gentleman replied, but he could have truthfully said of all the fruit, tropical and other kinds, there is not any fruit better or more satisfactory than "our apples."

The value of nuts as food is just beginning to be appreciated. It has been proven that peanuts afford twice as much nourishment as beefsteak, rice, beans, or cheese, and eight times as much as potatoes. Next to the peanut is the chestnut, which contains a great deal of starch and is used largely in Italy, taking the place of cereals and also in the finest grades of macaroni. Chestnuts are used in soup, forcemeats, and many kinds of desserts. Almonds are not only nutritious but also a good digester when divested of their brown, tough skin, which is easily done by pouring boiling water over them and letting them stand three or four minutes and then rubbing them off. Then there are the English walnuts, filberts, hickory nuts, and pecans which are growing in favor with cooks for desserts, salads, cakes, etc.

Peanuts used raw, that is, without roasting, are more digestible than otherwise, and the more one eats of them the better they are liked. They are inexpensive as compared with meat, and there is no fear, as in eating meat, of taking something into the system that may be diseased. In addition to the plate of shiny apples on the breakfast table, let us have a dish of unroasted peanuts.

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Bread.

Yeast should be soaked in tepid water. If the yeast is old it will help its action to add sugar to the water in which it is soaked. This is the recipe used for bread in the Kansas Agricultural College: For one loaf of bread use $\frac{1}{4}$ cups liquid, $\frac{1}{4}$ cup of yeast, 1 teaspoonful salt, 1 tablespoonful sugar, flour. Sterilize the liquid, let cool, then add yeast, sugar, and salt; add 2 cups of flour and beat thoroughly. Let it rise then work in enough flour to make a good dough. Knead well; let it rise again twice its bulk. No flour should be used in shaping the loaves, but all the flour should be used when kneaded.

TESTED RECIPES FOR MAKING BREAD.

Homemade Bread.—Two medium-sized potatoes, boiled and put through a sieve, one tablespoonful of salt, one teacupful of sugar, a lump of lard the size of an egg, two quarts of water and a teacupful of hop yeast.

Gingerbread.—Two cupfuls of molasses, one cupful of butter, two eggs, one cupful of brown sugar, one cupful of warm water and two teaspoonfuls of soda.

One and one-half cupfuls of molasses, one half of a cupful of lard, one half of a cupful of water, two eggs, one teaspoonful of soda, one half of a cupful of sugar, stiffen with flour.

One cupful of sugar, one cupful of molasses, one cupful of butter, one egg, one teaspoonful of cinnamon, one teaspoonful of ginger; stir all together. Dissolve two teaspoonfuls of soda in one cupful of boiling water, stir this in and add three cupfuls of sifted flour; bake in a hot oven.

Soft Gingerbread No. 1.—One half of a cupful of sugar, one cupful of molasses, one half of a cupful of butter, one teaspoonful each of cinnamon, cloves and ginger, two teaspoonfuls of soda dissolved in one cupful of boiling water, two and one half cupfuls of flour; add two well-beaten eggs the last thing before baking.

No. 2.—One egg, one cupful of butter, one half of a cupful of sugar, one cupful of baking molasses, one cupful of boiling water, one teaspoonful of soda, one half of a teaspoonful of ginger; use flour enough to make a stiff batter.

Tea Biscuits.—Two cupfuls of flour, two large teaspoonfuls of baking powder, one tablespoon of lard, one fourth of a teaspoon of salt. Mix flour, baking powder and salt together, then rub in lard; add milk enough for soft dough. Roll one inch thick and bake in hot oven.

Hot Cross Buns.—Here is a recipe for the genuine English Good Friday hot-cross buns: Dissolve in a generous half-pint of warm milk a quarter of a cupful of butter. Add this to a quart of sifted flour, half a cupful of sugar, half a teaspoon of salt, half a grated nutmeg, half of a yeast cake; dissolve in a little water, and two eggs, the whites and yolks beaten separately. Mix into a soft dough, place it where it will not become chilled and let it rise over night. Take pieces of the dough

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the size of an egg and, with flour on your hands, mould them into round cakes an inch in thickness; put into a baking pan with a little space between, then cover, and place where they will keep warm. When swollen to double their size, cut a cross in the center of each with a sharp knife, and bake for half hour in a moderate oven. When baked, brush with a syrup made of sugar and water.—Mrs. A. J. Benn, Sterling.

The Young Folks

What Have We Done To-Day?
 We shall do so much in the years to come,
 But what have we done to-day?
 We shall give our gold in princely sum,
 But what did we give to-day?
 We shall lift the heart and dry the tear,
 We shall plant a hope in the place of fear,
 We shall speak the words of love and cheer,
 But what did we speak to-day?
 We shall be so kind in the after awhile,
 But what have we been to-day?
 We shall bring to each lonely life a smile,
 But what have we brought to-day?
 We shall give to truth a grander birth,
 And to steadfast faith a deeper worth,
 We shall feed the hungering souls of earth,
 But whom have we fed to-day?
 We shall reap such joys in the by-and-by,
 But what have we sown to-day?
 We shall build us mansions in the sky,
 But what have we built to-day?
 'Tis sweet in idle dreams to bask,
 But here and now do we our task?
 Yes, this is the thing our souls must ask,
 "What have we done to-day?"
 —Nixon Waterman, in Christian Intel-
 ligencer.

Grandma's Story—A Talk About Dogs.

FLORENCE SHAW KELLOGG.

"Here children, here's something for you," said Mr. Gray, just returned from town, as he held a covered basket towards them. Susie opened it while the others crowded around her with eager interest.

"Oh, a puppy! a puppy! screamed little Rose, as she danced about in glee. Tommy and Susie, though less noisy, were no less pleased, and all united in thanking their father for giving them "just what they wanted most," a beautiful Scotch Collie puppy whose soft eyes were already bright with intelligence.

"Oh, let's go quick and show him to grandma and have her help us name him," said Susie, and away they scampered. Grandma did not fail in showing her interest and pleasure and was quite willing to help in choosing a name for the new pet. She had just finished reading them Alfred Oliphant's romantic and beautiful story of "Bob, Son of Battle," and it was soon decided that the puppy should bear the name of that dear, faithful dog; and when at the first call of "Bob! Bob!" the puppy wagged his tail and looked up, Susie declared "He knows his name already," and after that there could be no doubt of the little fellow's great intelligence.

The talk naturally turned on dogs, and, almost before she knew how it happened, grandma was seated in her favorite chair with Rose in her lap, telling a story; and although she did not begin with "once on a time," the children knew it was all true, for grandma told none but true stories; and if the wise old lady did not "point a moral," they were learning many a good lesson from what she told them. In years to come, when life shall have grown earnest to them, the memory of the hours spent with her in the "chamber whose name was Peace," would be among the most blessed of their lives. But to our story.

"The first dog I dearly loved," began grandma, "was a black-and-white shepherd that we named Jack. My father bought him of Mr. Black, our nearest neighbor; but I, without knowing of this, supposed Mr. Black gave him to me, for he said when I was there playing with the puppies if I would carry one home I might have it. Jack was my choice; and, though I was only a tiny girl then, I well remember lugging the fat, squirming puppy home in my little apron. He was so fat and heavy that though it was only a short distance between the two houses, I had to stop by the roadside and rest before I got him home. He grew very fast and was a great pet among us children, but my father did not allow our petting and play to interfere with his training, and he became in time a very wise and valuable dog. He seemed to understand whatever was said to him quite as well as we did; and he sometimes put us to shame by his quick and willing obedience. When he grew old enough, it

was a part of his duty to drive the cows back and forth from the pasture to the milking-yard morning and night each day. Sometimes one cow would be missing. Then father would tell Jack of it just as he would tell a child, and the intelligent dog would go back to the pasture and hunt until she was found, when he would return driving her before him with an unmistakable air of pride, and he was as pleased as any boy over the praise given him. He seemed in every way one of the family, a dear playmate for us children, and a valuable helper to father. We all loved him dearly. I have told you how after he was an old dog, he learned to carry notes back and forth between our home and the new home to which my eldest sister had gone as a bride; all along the seven miles between the two homes—thickly settled miles they were, too—different ones, just to test his intelligence and fidelity, would try to take the notes from his neck, but all in vain. Come what might, he would only give them to the ones to whom he was told to carry them. Dear faithful old Jack! Though he lived to be so old that he lost all his playfulness and did little but lie around and sleep the last months of his life, we were very loath to let him go, and our tears fell fast when we knew he slept in death.

"It would be hard to find a more intelligent race of dogs than the shepherd, but a little, mongrel, yellow-brown dog your grandfather had when we were married—and for some time before—showed a marked degree of intelligence and no dog ever loved a master or was more faithful to one than was he."

"What was his name, grandma?" asked Rose, and "Was he little or big?" added Tommy.

"His name was Billie," answered grandma. "He was neither little nor big, but just a fat, roly-poly kind of a dog that your Aunt Martha said was the color of a 'burnt molasses cookie.' But he was smart and did many interesting things. He would own allegiance to no one but his master, and neither would he obey any one else, unless he chose to do so; but your grandfather's every command was law to him and we had to admire him for that, though his utter refusal to obey any one else was very trying at times."

"Was it Billie that knew the letter that came from his master, grandma?" asked Tommy.


"Yes, dear, that was Billie. And, went on grandma, "it was Billie that always slept on your grandfather's old coat or some other of his cast-off garments when he was away in Virginia, as he was all of one winter. It was always touching to see how he mourned his master's absence. His only comfort seemed to be to find some of his old clothes and make a bed of them. No one could fool him or make him take any others. I suppose with his keener sense of smell, he could detect some scent that he knew belonged only to his master that we could not perceive."

"Burroughs, you know, grandma," said Susie, "says a dog is almost a human product; he has been the companion of man so long, and has been so loved by him, that he has come to partake in a measure at least, of his master's nature." Maybe there was some tie between grandfather and Billie that no one else knew of."

"May be so," returned grandma. "I am like Burroughs who in a recent letter to me said, 'I can believe almost anything of dogs. If they do not reason, they do something wonderfully like it.' I think we all have to come to this conclusion when we stop to think of all the wonderful things we know of dogs."

"Ernest Thompson Seton, in his fine stories of 'Bingo' and 'Willie' gives them many of man's attributes," said Tommy. "And," he added, "when you are reading his stories, you can hardly help agreeing with him, though I know Burroughs' conclusions regarding reason in animals, particularly wild animals, are quite different from his."

"When doctors disagree who shall decide?" quoted grandma. "The difference between Seton and Burroughs is the difference between the young man's enthusiasm and an old man's conservatism; but Burroughs' frank admission of the change that has come in his thinking, and his fear that, earlier in his life, he may have made too much of every bit of intelligence of bird, or four-footed animal that came under his observation, as he says 'the nature lover is always tempted to do, awakens our admiration and gives us confidence in him such as we can not feel for every one.' But I want to tell you something funny about Billie. His master's trip to Virginia, of which I have spoken, was for the purpose of getting a wife, and four months later, he took me home with him as proud and happy




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a bride as ever was, but Billie felt no need of me in his little life, he could not understand why I was there and he was oh, so jealous of me! It was funny to see him; he showed it all so plainly. He had always been used to sitting in his master's lap, and to see me in his place was almost too much for him. He would watch me closely as I moved about the room and whenever he saw me about to sit down on your grandfather's knees, he would make a sudden spring and get there first if possible, and when he succeeded it was plain to see how he rejoiced in his triumph. He was only just reconciled nicely to me, and ready to grant me a fair share in his master's love and attention, when the baby came and then everything went wrong at once. I had been bad enough, but a baby—a little white-clad, helpless thing that his master seemed so proud of and loved to hold and fondle just as he had seen ordinary men do with babies—his master, whom he thought so superior to all others—oh, it was indeed too much to expect him to look upon such a sight with patience! and the way he would stalk by with his head turned away, and disgust showing in every feature of his face, was as comical as anything I ever saw in a dog. He had been jealous of me, but he was doubly so of the baby, and it was not until the little one grew old enough to stretch out its tiny hands and crow and coo to him that Billie regarded him with favor. After that they became fast friends, and one of the first words baby spoke was to call him a name of his own, calling him Di instead of Billie. And the surprising thing was that he answered to it the same as to his real name."

"And what became of Billie, grandma? Did he die of old age as Jack did?" inquired Susie.

"Hardly that, Susie," responded the storyteller, "though he was quite old when the end came. He lived a free, happy dog life until we sold our farm and came to Kansas. We had no definite location in mind, and Billie was too old for so radical a change; so, though it was a very hard thing to do, we had to leave him with a neighbor. His master slipped away without saying good-bye to him, to prevent his following, but the poor old dog's heart was broken by the separation. He grieved and pined, becoming very cross and morose, until in pity for him, his life was ended. We felt very badly when we knew of it all, but what could we do? It was only one of the many instances where one has to be seemingly cruel to be kind, but of course poor Billie could not understand this," and grandma sighed at the remembrance of it all. The call for "supper" coming just then closed the talk with a promise of "more another day," of which our readers shall hear later.

It is a fearful condishun to git into to be dependent upon others for our pleazzures.—Billings.

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NOTICE

The Annual Meeting of the stockholders of The Farmers Cooperative Shipping Association will be held in Topeka, Kans., at the National Hotel, on Wednesday, April fourth, at 4:00 o'clock p. m. for the election of a Board of Directors and the transaction of such other business as may legally come before the stockholders' meeting.
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"Tis almost eight—just look!
Now finish up your chapter, dear,
And put away your book."
The minutes almost seem to race
When it is growing late;
The very most exciting place
Is just at half after eight.
—Anna Burnham Bryant.

Ants, Uncles, and Cousins.

MRS. A. D. GRAY.

"Mother, oh mother!" called Ruth's voice, as she tried to tiptoe high enough to peep in at the window. "Are you there? Well, Helen and I are out here on the steps, and our ants are acting so crazy and funny. There's a lot more of them, too; do you suppose they are visitors?"

"No, for ants don't have visitors. If one comes, they drive him away or kill him."

"Oh, my! how unpolite!" said Ruth. "Tell us some more, mother, about the farmer ants—you promised."

"In five minutes," I said, "and you little girls watch very closely, and see if you can tell what is going on at your ant-hill."

A few moments later, when I drew my chair to the window, and took up my work, two very eager, interested little faces bent over the ant-hill.

"Look, look Ruth!" cried Helen, "they are bringing in tiny bundles; what do you s'pose they've found?"

"Why it's other little live things—looks like worms," said Ruth. "Tis worms, for sure. Do tell us what they are trying to do, mother."

"Very well, this is a good place to begin," I said. "In every ant-hill, there are drones, queen ants, and workers. The queen ant does not rule the others, as the queen bee does. Her chief work is to lay the eggs. There are also builders, servants, nurses, and soldiers. Out of the queen ant's eggs come very lively, hungry baby-ants. They do not look like ants, however, but like little white worms. But I think the funniest part of all is, that this little white worm has to be fed, kept warm and dry, taken for walks into the sun and air and cared for, very much as we care for a real baby.

"The nurses are very kind to the baby-ants. They carry them out into the sunshine, and back to the hill again. They lick them all over to keep them clean and white, almost as the mother cat does the little kittens. They feed them, too, four or five times each day. After the worm has grown, it spins itself a fine, thin web and wraps all up in it. In a short time, it comes out a full-grown ant, with legs and wings.

"Then the hill becomes so full of brothers and sisters and cousins, that some of the new ants swarm, and fly away to start a new hill. The ones you were watching awhile ago are the nurses who have been taking the baby-ants out for an airing.

"The farmer ant lives in Texas and Florida and other very warm States. This ant raises its own grain for food; it is called ant-rice. These ants have very large hills—as large as a room sometimes. They cut down all grass or other grain; except this one kind. When the seeds of this ant-rice fall, all the workers hasten out and gather them up, one seed at a time, and carry them into the storeroom.

When all of the ant-rice has fallen they cut down the old stems, so that the land will be all ready for another crop. Don't you think that is very strange and wonderful?"

"There's a very tiny brown ant that makes her nest of little balls of mud, which she rolls up, and then places as if they were bricks. This is called the mason ant.

"Then there are carpenter ants, who do much harm; they cut their way into trees and beams, and often make them fall.

"The strangest kind, I think, are the parasol ants. They live only in very hot countries—mostly in South America, where the sun is hot. These are very large and they cut for themselves bits of leaf, as large as a dime. They carry these in their jaws by a tiny piece left for a stem. They look very funny indeed, marching along two by two, each carrying his parasol. They line their homes with these bits of leaf to

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keep the dirt from falling in; at least that is what their purpose seems to be. "You see that though people are very wise, there are some things they do not fully understand, and ants are one of them.

"I am sure you little girls will learn some things by watching your ant-hill, and if you do, you must be sure to tell me, too."

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Ladies' Social Society No. 1, Minneapolis, Ottawa County (1888).
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Pleasant Hour Club, Wakarusa Township, Douglas County (1899).
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Jewel Reading Club, Osage County.
The Mutual Helpers, Madison, Kans. (1906).
(All communications for the Club Department should be directed to Miss Ruth Cowgill, Editor Club Department.)

A New Club.

I am happy to add to the club roll the "Mutual Helpers", of Madison, Kansas. The report above indicates that they are all their names implies—and more. The motto, if practiced, will

cause their helpfulness to reach farther than themselves, and their influence will be felt beyond their immediate surroundings.

ART PROGRAM.
Jules Breton.

- I. Breton the artist.
- II. "The Song of the Lark."
- III. The French peasant.
- IV. "Planting of Calvary."

I. The program of Jules Breton three weeks ago treated of his life up to the time he began his career as an artist. The paper under this topic should tell of his life and work, beginning with the terrible days of the revolution. He was so impressed with the misery of that time that he painted then his only sad picture—his first Salon picture, "Want and Despair." It was a great disappointment to him and he learned that sad pictures were not for him to paint.

II. Give a description of this happy peasant girl and her surroundings as she looks to you. Can you not hear the notes of the lark in your imagination? Is not the gladness and joy of the singing lark in her heart as she begins her daily toil? The sun just showing behind the trees tells the time of day. Breton loved the sunrise and sunset, and enjoyed watching the gleam of gold on the edges of the clothing, the sickles and the grain. Can you find it in the pictures?

III. The peasant was the subject of so many of Breton's pictures that a paper about the peasant life in France would help one to understand and appreciate his pictures more, and enlighten one very much also.

IV. One of his happiest pictures is the "Planting of Calvary." These calvaries were little chapels or crosses on top of a hill and an important ceremony attended the planting of them. It was this that prompted him to paint this picture. The little girl who was his playmate and sweetheart and afterwards consented to be his wife, posed as one of the young girls. She carries the crown of thorns.

The Mutual Helpers.

We organized February 14, 1906. You see, we are yet in our infancy, but most of our members have had experience in club work.

We are known as the "Mutual Helpers" and have taken kindness as our

watchword. We have adopted the Sunshiners' motto, "Have you had a kindness shown? Pass it on." Our club hymn is "Pass It On," our flower is the snowdrop, and our colors are white and green.

The object of our club is to promote sociability, encourage the art of fancy work and do all the good that our hands find to do.

We meet semi-monthly at the homes of the various members as their names come on a list alphabetically arranged. We have divided the year into quarters and have taken a subject for each meeting during a quarter. This list is to be revised from time to time. Following is the list as it now stands: (1) Seasonable Recipes. (2) Notable events of the last quarter. (3) Club news. (4) Response by quotations. (5) Short story. (6) Miscellaneous.

Our officers consist of an honored helper, assistant helper, recording helper, and art instructor. After the work for the day has been completed, light refreshments are served and we have our social hour.

Our club is composed entirely of country women and I assure you these meetings are a source of pleasure to all of us. We go home feeling younger and happier and take up the burdens of life with new energy and courage.

A MEMBER.

THE INTERNATIONAL SUNDAY-SCHOOL LESSON.

(Copyright, 1906, by Davis W. Clark.)
First Quarter, Lesson 12.
Proverbs 23:29-35. March 25, 1906.

A Temperance Lesson.

Israel's poet king and prodigy of wisdom sets himself to the task of painting the drunkard's portrait. It is a faithful likeness, and horrid because faithful. The royal artist persists in his undertaking, though his canvas grows lurid and frightful under each successive stroke of the pencil. His picture has proved a veritable danger signal, flashing its warning color upon successive generations for three thousand years. Its red light has proved a powerful deterrent to multitudes. Nowhere in literature is the woe, the sorrow, the folly, the fate of the drunkard so powerfully depicted. . . . That such a picture could be painted thirty centuries ago, sufficiently proves the antiquity of the vice. Drunkenness is no modern sin or mere accident of our civilization. It is

as old as Noah and older. Intoxicating liquors undoubtedly inflamed the race before the flood and led on to that nameless depravity which had to be drowned out in that awful judgment.

Old as it is, Solomon's picture is the very similitude of the drunkard of to-day. Three thousand years have not sufficed to change the causes or effects of intemperance.

This is no pleasing fancy sketch of genius, nor happy aethetical study; but it deserves the close, respectful attention of every one who loves himself and his neighbor.

How We Should Dairy.

(Continued from page 314.)

and the result is that we have practically two fresh cows per year. Then, again, we have the cow dry during the months of July and August when the weather is excessively hot and flies are the most troublesome and when farm work is most urgent.

It is easier to produce a good calf during the fall and winter than during the summer months. We can not afford in Kansas to overlook the value of a good calf.

There is no business of which we know, which will pay us as well for intelligent work as will the dairy. It gives to every man of brain capacity an opportunity to reap a golden harvest for every hour of thought and study which he gives the business.

beauty of the dairy business is that a man can raise just as much corn and just as much wheat on his farm with the dairy as without, and when corn and wheat fail, he has a monthly cash income from his cows.

A Premium for Good Cream.

By I. D. Graham, Secretary of the Kansas State Dairy Association.

"We recommend the system of buying cream on grade, believing that the purchase of cream on its merits by which a higher price is paid for cream of good quality as compared with cream of poor quality, is absolutely essential to the life and future success of the dairy industry in Kansas."

The dairy industry in Kansas has grown remarkably in the last ten years, and yet the industry in this State is only in its infancy. The farmers of Kansas have only begun to realize the advantages to be derived from the sale of the dairy products of a small herd of cows.

In the future development and growth of the business, however, there is one thing which must not be lost sight of, and which must be considered if the future of the dairy industry is to be as permanent as it should be. That feature is the quality of the dairy product.

Recognizing the fact that unless a better quality of butter can be produced from the cream delivered to the receiving stations in this State, there will be a decreasing demand for butter from the West and that butter prices will be lower and consequently lower butter-fat prices paid to the farmer,

There are creameries in this country now buying their cream on a grading plan and that plan is based on the frequency of delivery. In Minnesota, a State which has carried off the highest honors ever since the organization of the National Buttermakers' Convention some ten or twelve years ago, hand separator cream is delivered daily and will not be accepted if delivered less frequently.

price is four cents in advance of the price paid for second grade cream which, according to the grading system now in vogue, is delivered less frequently than twice per week during the present season, and tests under 30 per cent.

The writer was in New York not long ago and made a visit to the butter commission houses in that city. We found those houses had their coolers piled full of second-grade butter, and that such butter was begging for a market at a price ranging from six to eight cents below the prices asked for first-quality butter.

Every pound of second-grade cream and butter costs the farmer as much to produce as a pound of first grade. The expense has been identically the same and the difference in price received for second-grade cream as compared with first-grade cream, is an actual loss to the farmer.

The Breeding and Handling of Dairy Cows.

Lecture by Prof. Oscar Erf, Chief Dairy Department, Kansas Agricultural College, at the National Dairy Farmers' Convention on Thursday, February 22, at Chicago.

The profits of a dairy depend largely upon the good qualities of the cows and the way they are kept. Breeding is an important factor and often determines the profit or loss in the business.

A Year's Record of a Herd.

Table with columns: Number of cow, Products (Milk lbs., Av. test per cent, Butter-fat lbs.), Cost of feed dollars, Value (Butter-fat, Skim-milk 15c per 100 pounds, Total), Receipts less cost of feed, Cost of producing butter-fat per pound. Rows include three lots of cows and their averages.

cow produces approximately 131 pounds of butter-fat per year. If we base our calculations on the average market price of feed that a cow consumes, and the care she requires, we find that it would take at least 175 pounds of butter-fat to pay for the feed of a cow for one year.

You Will Prosper in the Great Southwest

In Oklahoma, Indian Territory and Texas are vast areas of unimproved land—land not now yielding the crops of which it is capable.

Rates Cheaper Than Ever February 20th and March 6th and 20th

On above dates most lines will sell both one-way and round-trip tickets at exceptionally low rates. If your nearest railroad agent can not give you the rates, write me for particulars.



is how to secure animals that will pay for their feed. The only practicable method that we have to suggest to dairymen, is to determine the value of each individual animal by weighing the milk and testing the same for three consecutive days each month throughout the period of lactation.

As yet, we have no absolute proof that a cow, tested for a year and making a high record, will continue to do so throughout the prime of her life. After a cow has once proven to be profitable, the future of that cow, if she has not passed the prime of her life, depends entirely upon the care and handling that she receives.

The individuality of an animal can be best brought out by a table which represents an experiment conducted by the Kansas State Agricultural College:

This table represents a scheme in which fifteen cows are divided into three lots of five cows each. The first lot produced butter-fat for approximately 10 cents per pound, the next lot 15 cents, and the third lot 20 cents.

attention to the individuality of the animal.

Assuming now that the market price of butter-fat is 15 cents per pound, which is very low, the center group would neither make a profit nor a loss. The first lot would make a profit of 5 cents per pound of butter-fat produced, and the last lot would make a loss of 5 cents per pound of butter-fat produced. Hence, the loss made by the last five, assuming that conditions were equal, would balance the gain of the first five. Therefore this whole lot of cows would neither make a profit nor a loss. From this it is very readily seen that if the last two lots of cows were discarded, the first five cows would make a profit of \$126 per year. However, the average price paid in Kansas for butter-fat for the last year was 22 cents per pound; hence all of these cows would have made a profit.

According to this scheme, a man that would test and keep a record of his cows would be paid for his work to the extent of \$126 per year for the five cows. The question may arise, will these cows continue their performance from year to year, and may it not be that some of the other cows will do better in the succeeding years? It is true that there is some danger on basing conclusions on one year's record, for some cows produce more one year than they do another. These records are of greater value when they are kept continually. However, two years' record should determine quite definitely the capacity of a cow. There is a possibility, then of such an occurrence in the second class of cows, but there is little risk to run for any cow of the last lot to deviate from her one year's record, and double her capacity so that it will come up to the standard of the first lot. Since the second lot pays for the labor and feed involved, it might be well to keep a number of these animals and try them for the second year. If at the end of the second year they have failed to come up to the requirements of producing butter-fat for less than the average market price, they should be sold.

When once a herd has been established, and, with possibly a few exceptions, the cows are profitable and have good milking qualities, there comes that ever-puzzling question of how to perpetuate the qualities of good ones that have been selected, and whether or not by breeding, these qualities can be reproduced in the offspring from a good cow if the sire is of equally good milking strain.

Environment, which includes the handling and care of a cow, has much to do in gradually increasing the capacity for milk-production. A marked increase in production can not be brought about in this way in one individual, but by keeping cows and bulls under the most favorable conditions, the capacity of a herd can ultimately be increased by each generation. Environment works hand in hand with the laws of breeding. In fact, dairy cattle have been brought to the present stage of productivity by care and selection. The effect of environment on animal-breeding can be well illustrated in the following manner: The Holstein-Friesian breed originated in the lowlands of Holland and Northern Germany, where the forage and grass grew rank and tall and not very rich in nutrients. These animals adapted themselves to this particular environment by developing rather a large frame and body in order to handle the feed. On the other hand, the Jerseys originated in the isle of Jersey, which on account of its hilly character and poor soil, produced a grass which was short but quite nutritious, developing a class of animals small and particularly adapted to that region and for that kind of feed. While it is true that environment influences milk-production to a certain extent, it is however a fact that the laws of breeding have a greater influence on individuals. But in order to increase the production, the handling and care of the dairy cow must not be lost sight of.

The laws of breeding are complicated and interlaced. Furthermore, there are a great many influences that assert themselves in practical operations so that it becomes impossible to single out a definite law that will always bring the same results.

Taking out the element of environment, there are two principal conditions in breeding which stand out prominently and which bring forth apparently the best results. (1) It is the old law in breeding that "like breeds like," which means that the mating of two characters which are bred for many generations, will become fixed in the offspring. By this law it is not possible to increase the capacity for milk-production of an individual more

than that of her ancestry. For instance, we assume that a strain has been bred for many generations, which has the characteristic of producing 30 pounds of milk per day, on an average. If two animals with this particular character were bred together, we can expect nothing more than that the female offspring will have the capacity of producing 30 pounds of milk per day, assuming that in this statement all other functions correlate in approximately the same per cent as in all future generations. A characteristic, such as the milking quality of a cow, can be fixed most readily by continuous in-and-in breeding. This is the method that nature uses in establishing all kinds of types of animals suited for their particular condition and environment. For instance, the squirrel is the same animal that it was a thousand years ago. The quail is the same size that it was centuries ago, and with these there is in-and-in breeding year after year. We can go to the fields and the forest and find plenty of wild animals that maintain their species with the closest type, generation after generation and year after year.

The idea generally prevails, that by in-and-in breeding weaknesses occur and that the capacity for milk-production will be decreased. Such influences can only come about when two animals of weak constitution are bred together. This weak constitution has been acquired by conditions to which the animal has been subjected. Hence, to avoid this possibility, start with a strong class of individuals and always breed from sires of strong, dominant character, to females of equally vigorous character.

(2) The second condition is, that if two animals of dissimilar characters are bred together, the offspring will assume the qualities principally of the individual that has a dominant character; but the fixed characteristics of either animal are more or less disturbed and in succeeding generations almost any gradation and blending of the cross can be expected. As a matter of fact, when two animals of good milking strain are bred together, we generally get an offspring that is quite superior in milk-production to either of the ancestors. However, this can not be absolutely relied upon, but is the best way to increase the capacity for milk-production. To perpetuate the character in succeeding generations, this cross must be bred to a male who has a dominant character for milk-production inherited from his ancestors. If no such strain of animals is available, it is wise to breed this offspring back to its sire in order to fix this character. For instance, a bull and a cow are mated, both from different strains. The dam and the sire's dam have the character to produce 20 pounds of milk per day well established, but these strains for many generations back are not related to each other. The offspring from this cross may only have a capacity of 15 pounds. However, it is more likely to have the capacity to produce 30 pounds. To fix this character in succeeding generations, it would be wise to breed this offspring back to its sire, which has but 20 pounds capacity, while there is a possibility of slightly reducing the capacity of the offspring; yet it fixes the character and makes it more permanent for future generations. But if you desire to run the risk of a still greater increase in milk-production, it would be well to breed this cow with a capacity of 30 pounds of milk per day to a sire of another strain, which has an average capacity of 30 pounds per day. The closer a strain is related, the more permanent and the more reliable will be the fixing of that character for all future generations at 30 pounds capacity.

The above example relates to strains of one particular breed, which has come under my observation, but in some localities it is made a practice to cross-breed a dairy breed with some beef breed, as for instance, the Jersey with the Shorthorn, in order to increase the size of the offspring without affecting the milk-production. While this is being practiced the results will become quite indefinite and unsatisfactory. Some scientists say that Mendel's law comes into play here. While I have no absolute data to prove this statement, it may be true, and I have some confidence in it from some incidents that I have noticed. Mendel's law is based on the law of chance, and in brief, is that on second and later generations of a cross-breed; every possible combination of parent characters occurs, and each combination appears in nearly a definite proportion of the individuals. For illustration, a Jersey with good milking qualities is bred to a Shorthorn with a beef character. Both animals are pure-bred. Let J represent

Jersey characteristics; M milking qualities; S, Shorthorn characteristics; and B the beef qualities. A character that asserts itself prominently is known as the dominant character, and is represented by a capital. A hidden or latent character is known as recessive, and is represented by a small letter. JM and SB are bred together and the result will be JsBm,

JM } Js Bm
SB }

meaning a cross with Jersey character dominant, Shorthorn recessive, beef qualities dominant, and milking qualities recessive. If two cross-bred animals are mated, we would have a mixture of four kinds of characters in the male to four kinds of characters in the female. On the average, one-fourth of each kind will combine and we have a combination of characters like this:

Male.	Female.
JM	JM
JB	JB
SM	SM
SB	SB

1. Jm x Jm = Jm.
2. JB x Jm = JBm.
3. SM x Jm = JsM.
4. SB x Jm = JsBm.
5. JM x JB = JBm.
6. JB x JB = JB.
7. SM x JB = JsBm.
8. SB x JB = JsB.
9. Jm x Sm = JsM.
10. JB x sm = JsBm.
11. SM x SM = SM.
12. SB x Sm = SBm.
13. Jm x sB = JsBm.
14. JB x SB = JSB.
15. Sm x sB = SBm.
16. SB x SB = SB.

Here it will be noticed that two and five give the same results. Similarly, 3 and 9, 8 and 14, 12 and 15, 4 and 7, 10 and 13. We may therefore represent the cross-breed and its progeny as follows:

One part Jersey dominant with beef quality dominant.

Two parts Jersey dominant with beef qualities dominant and milk recessive.

One part Jersey dominant with the milking qualities dominant.

Four parts Jersey dominant, Shorthorn recessive, with the beef qualities dominant and milk recessive.

Two parts Jersey dominant, Shorthorn recessive, and milk dominant.

One part Shorthorn with beef qualities dominant.

One part Shorthorn dominant, with beef qualities dominant, milking qualities recessive.

One part Shorthorn with milking qualities dominant.

Of the nine types, four of them, 1, 3, 7, and 8 are supposed to be pure and will reproduce themselves. It will be noticed that each of these pure types constitutes one-sixteenth of the progeny of the cross-bred. Four other types have one latent character which constitutes two-sixteenths of the whole. The last four, with two latent characters, constitute four-sixteenths. The law continues to operate in the above manner.

While this is still an experiment with dairy cattle, it becomes impracticable for the individual dairyman, since it requires too much expense and time to get results. The solution of the whole problem of breeding dairy animals from a practical standpoint, can be summarized in a few brief principles. Get a bull of some recognized breed with a long line of high milk-producing ancestry, and see as many of them as possible that are within your reach. Find out if the dam and granddam had good dairy qualities. Although it appears entirely a female function, it is transmitted largely through the sire. Be sure and get a sire that is from a better milk-producing strain than your own cows, and notice that he has the power of transmitting his own characteristics to the offspring. The best calf to raise, then, is the one that shows most largely the qualities of the sire. Observe closely in connection with this, and it will be found that it is generally the calves of cows that show the greatest improvement from feed and better care that are best to keep.

With these conditions it is always advisable to raise as many calves as possible, with the expectation of discarding many of them when 2 or 3 years old, or even before that time if we see any tendency to revert to some original ancestry poor in milk-production. In-and-in breed as much as possible in order to reduce to a minimum the tendency to revert, by breeding the sires to the helpers, or to another which closely resembles them, and you will have a basis for a good strain of cows. However, during this time we must not lose sight of the fact that better feed and care has a great deal to do with the improvement of the herd. This is particularly the case in the development of a heifer. Feed them good, rich, nitrogenous feed during their growing period. Give them plenty of

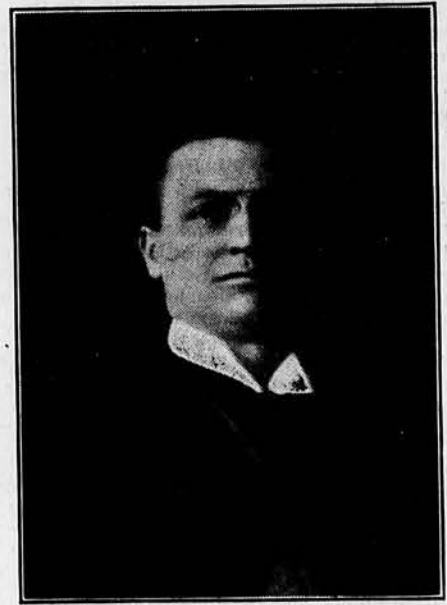
exercise and fresh air and a good, clean, sanitary place to sleep. After the heifers have produced their second calf, if they have not come up to the standard of a good cow, discard them and continue to breed from those that produce milk and butter-fat at a profit. To carry out these principles requires considerable time and money, but it will bring results.

I should be glad to see the time come, and that soon, when dairymen will unite their efforts and establish test associations, and in connection a breeding association, which will control the breeding of cows and the selecting of bulls from records and performances. This can be very easily established in communities where there are a great number of individuals of one breed, this association to employ a competent man to test the cows and keep a record of their breeding, and this man also to be in charge of the male animals purchased or bred by the association, from a good milking strain and possessing dominant characteristics which will be perpetuated on his offspring. There is undoubtedly no better and safer method to increase the milk-production of individual cows and to perpetuate the strain.

THE EMPIRE WAY.

On the evening of Saturday, February 24, there started from Chicago a special train consisting of six sleepers, a dining-car, an observation- and a baggage-car. The destination of this train was Bloomfield, N. J., the home of the Empire cream-separator. On board the train were the general agents and salesmen of the Empire Separator Company to the number of about eighty, and twenty-nine representatives of the principal agricultural papers of the United States. The route was laid over the Grand Trunk line from Chicago to Buffalo, which included a stop of six hours at Niagara Falls. From Buffalo to Bloomfield, N. J., the route was over the Delaware and Lackawanna, which road furnished the train.

The expense of the trip, including the chartering of the train of sleeping-cars, the furnishing of the meals on the dining-car, a banquet at the Prospect House, at Niagara Falls, a trip down the Gorge to Queenstown and Louiston from Niagara Falls, and every other expense incident to such a trip and the royal entertainment of every man on board, was borne by the Empire Cream Separator Company.



ERNEST E. BELL,
Secretary and Sales Manager of the
Empire Cream Separator Co.,
Bloomfield, N. J.

The purpose of this trip was to give the selling agents of the Company an insight into the various processes of manufacture of the Empire cream-separator and to give the newspaper representatives such knowledge as would prove an inspiration in their comments in regard to this machine.

Never in all history, so far as the writer can learn, has there been an industrial organization of any sort which possessed at once the keep foresight, the cash to spend, and the nerve to spend it in carrying more than 100 men half way across the continent, furnishing them with every comfort of life for eight days, and sending them home brim full of enthusiasm, with no other object in view than that of giving these men accurate knowledge at first hand.

Four days were spent at the factory. These were devoted entirely to educational work. Each forenoon was spent in studying the methods and materials of the factory, and each afternoon was

devoted to institute work in which ways and means were discussed. Lectures were given by heads of departments of the factory, and questions and experiences by the fieldmen present.

Each division of the factory was numbered, and a small catalogue was prepared to guide the visitor and give him accurate information as to the operations performed in the sections visited. With this catalogue and under the guidance of some expert connected with the factory, each one of the party was enabled to see every operation through which each of the component parts of the Empire cream-separator was put before the final assembly in the perfect machine. The motto of the Empire Separator Company is "Not how cheap, but how good," and

is sales manager of the Empire Separator Company and who acted as chairman, would tolerate no disparaging remarks in regard to rival machines. His men were told distinctly and positively that their motto should be "Push, and not Knock." It is true that he tried to show them that they had a good machine. He showed them that a poor machine was a poor investment; that a tolerably good machine was like a tolerably good egg, of doubtful value.

One entire meeting was devoted to the discussion of dairy methods with the object of securing better cream and, consequently, better butter. It was shown that millions of pounds of inferior butter, known as "dairy seconds," were now in cold storage with



Exhibit of the Empire Separator Company, Bloomfield, N. J., at the National Dairy Show, Chicago, Ill.

perhaps the most interesting phase of our visit to the factory was shown in the quality of the materials used. The writer was impressed with this quality from his own personal examination, and later on he had the privilege of listening to a lecture given to the assembled agents by the expert who has charge of the supplying of all the materials that are used in the machine. Some of these materials are imported from Sweden because the quality necessary can not be made in this country. Nothing but the best material obtainable is used in any part of the machine. The bowl of the Empire separator is made from solid drawn steel tubing by a special process which is known and practiced by only one manufacturing concern in the United States. The highest quality of steel is used and the bowl is drawn thicker than necessary so that the outer and inner surface of the tubing may be pared away by the lathe and thus leave the heart, which is of the highest quality, for the bowl. Some bowls used in other separators are made of electrically-welded sheets of metal, which, in the high speed necessary to a separator bowl, are liable to break at the weld with disastrous results to the machine. It is impossible to break the Empire bowl. Greater care and better materials could not be used in the highest quality of watches than are used in the Empire separator. It is a marvel of mechanical perfection.

A large portion of the work is done by automatic machinery whose product is absolutely and mathematically accurate. Each part manufactured for these machines is interchangeable with all like parts. A new anti-friction device has just been added which practically makes the Empire separator frictionless. The writer stood by one of these hand separators and timed the revolutions of the bowl after the power had been removed. It was speeded up to the proper speed and the handle dropped, after which the bowl revolved for thirty minutes so free is it from friction. A machine that will revolve for half an hour after the power has ceased to be applied, is about as nearly perfect as human ingenuity and skill could make it.

In their competition with other separators in the field, the Empire Company believes that its best method is to make a better machine than the others do. Whether this has been accomplished or not, the fact remains that their machine is so nearly perfect that none but an expert could criticize it, and it would take a remarkable expert to do that.

In the meetings which were held daily at the factory, discussions were had of methods and every phase of the business that comes into the life of a salesman. It was noticeable that in these meetings Ernest E. Bell, who

no buyers. It was shown that this condition of affairs is to some extent the result of the work of irresponsible and unscrupulous salesmen who tell the farmers that it is not necessary to wash their separators, or at least that it is not necessary to wash them often-er than once a week; who tell them that it is not necessary to deliver their cream more than once a week in winter and twice a week in the summer; in fact, who tell them almost anything in order to effect the sale of a separator. It was brought out very strongly at this meeting that it is a part of the business of every salesman who handles a good separator, to teach the purchaser, so far as he can, good dairy methods and practice so the best results may be obtained from the use of the machine.

One of the most important matters discussed before these meetings was the subject of graded cream. The common practice all over the country since the development of the hand separator and the centralized creamery plant within the last few years, has been to receive any kind of cream at any time, and pay the same price for cream that is not only bad but absolutely rotten, that is paid for cream of good quality. This is not only an injustice to the creamery buying the cream, but to the separator man who sells the machine and to the farmer himself. No farmer should feel that he is entitled to a good price for inferior cream. The farmer who supplies good cream is wronged when no distinction is made between his product and that of the careless farmer who delivers spoiled cream. This condition of affairs has existed so long and its burdens have been so heavy to bear by both the farmers and the creamery companies, that a concerted effort has been made by the latter in some States to adopt the graded cream system by which a higher price is paid for cream delivered in good condition, than for that in poor condition. The justice of this will appeal to every one and to none more than the man who sells cream-separators. As it appears to the writer, a crisis in the creamery business is approaching, if indeed it is not already here. When a very large percentage of the product of the creameries must be graded as "creamery seconds" and go into cold storage where it remains without a market, injury, if not disaster, is bound to result to the creameries producing this butter, and through them to the farmers who supplied the bad cream.

Not only is the visitor impressed by the superior quality of the materials and workmanship employed in this great factory, which are not excelled in any factory, but he can not fail to be impressed with the personality of the men at the head of this great enterprise. From President Henning G.

Dairy Talks by the EMPIRE Dairy Maid No. 1.

Before You Buy A New Separator You Ought to Know the Facts.

If you know for sure that one cream separator is a great deal better—better for you—than all other separators:
If you know for sure that some one of them would make more dollars for you than any of the others, you'd be pretty sure to insist upon having that one, wouldn't you?
Well, I know that the

Improved Frictionless EMPIRE

is the cream separator that will make the least work for you, save you the most labor, give you the least trouble and the greatest satisfaction and make the most dollars for you.
And I want the chance of proving it to you.
You are interested, for when you buy a separator you are just as anxious to get the best as the manufacturers are to sell an EMPIRE.
How am I going to prove it?
It is not an easy thing to do on paper, because every manufacturer and every agent is continually claiming that he has the only cream separator worthy the slightest consideration.
They can use just as strong arguments—on paper, as I can. Between us you are apt to get confused. But you need not depend upon what any of us say.
You can find out for yourself. If you will only examine an EMPIRE you can see how simple in construction it is; you can feel how much more easily it turns; you see how much more quickly and more easily it can be washed, and you can be pretty sure from even a casual examination that it will last longer, give less trouble and require fewer repairs than any other, simply because it is so much simpler in construction.
If you ask any one who has ever used an EMPIRE you can hear all about its good points, for every EMPIRE user is enthusiastic in its praise. That's why so many other people buy the EMPIRE.
I know you will never regret taking a little time to find out the good features of the EMPIRE. I promise you that you will feel it time well spent. I ask you to send a postal card to the EMPIRE CREAM SEPARATOR COMPANY telling how many cows you milk and what you do with the milk and they will send some mighty interesting books about dairying and cream separators. Won't you let them do it! Send your name today. Just address

EMPIRE CREAM SEPARATOR CO., BLOOMFIELD, N. J.
311 TEMPLE BLOCK, KANSAS CITY, MO.

A Dollar Game Free

For postage, send eight two-cent stamps and tell how many cows you keep and what you do with your milk and we will send you the "Game of EMPIRE Success"—the most amusing, attractive and fascinating game ever invented. Old and young can play. Rush-ographs in colors; mounted on heavy binders' board 12x16 inches.

Get the Empire Books.

Ask for the one you want—

1. Full catalog and price list.
2. "The EMPIRE Dairy Maid."
3. "The Switching of Hiram, (story)."
4. "Figger it out for Yourself."
5. "A Gold Mine for Butter Makers."
6. Dairy Results—Dollars.
7. Money and the Way to Make It.

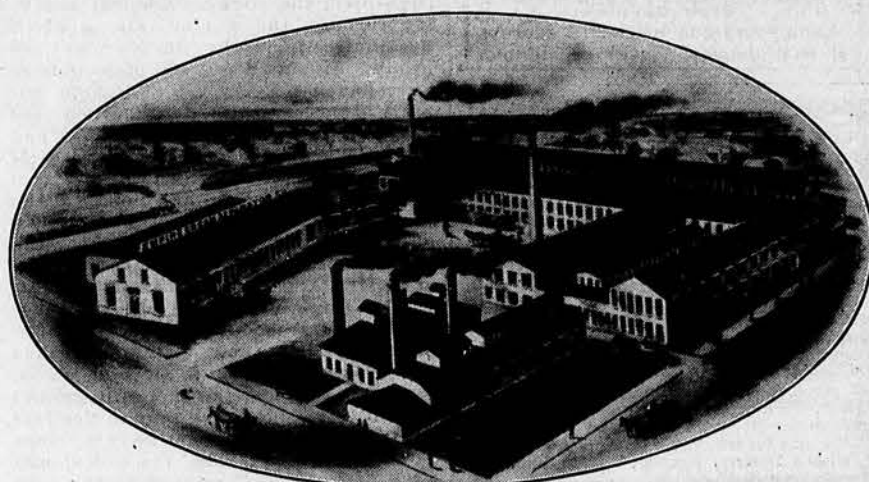
Taube down to the humblest chore boy, the same spirit of accuracy, energy, and honesty, is shown. Perhaps no one connected with the factory impressed the visitors with his personality more than did Ernest E. Bell, secretary and sales manager, who is the real man behind the gun. We take pleasure in presenting a portrait of Mr. Bell, who has made a wonderful record in building up the great Empire Separator Company from its small beginnings of a few years ago. His personality is so strong that it is felt everywhere in and about the factory, and throughout the field force. He is not only a hard worker himself, but he inspires others to do their utmost. Every one of the eighty salesmen who visited the factory on this occasion, went home filled to his capacity with enthusiasm instilled by Mr. Bell and the quality of the machine which he offers to the public. His instructions to these men

A Way to Get Rid of Rats.

EDITOR KANSAS FARMER:—I know from experience that plaster of Paris will kill rats and also cause them to leave the premises; but you must use good judgment and management. First feed them cornmeal two or three nights by putting it under boxes with a small opening just large enough to let in the rats, so that they will think they are stealing the food. Then mix about one-half meal and one-half plaster of Paris and put in the same places. You may not kill many but more will be sick, and if one dose will not do the work, give them another. They will soon leave as they are wise little rodents and take for granted that your premises are not healthy for them.

Wabaunsee County. E. THOMPSON.

Fruitful trees are profitable trees to plant. Leaves are not the fruits you plant for when you plant apple- or



General View of the Empire Cream Separator Factory at Bloomfield, N. J.

were brief but full of force. They are simply to "tell the truth about the Empire."

In thinking over this remarkable trip and pondering as to its results, one can not help a feeling of amazement that this company should be willing to incur an expenditure of \$20,000 simply for the purpose of instructing its men by object lessons, and of instilling into them a degree of enthusiasm which must prove practically irresistible in their future campaign as salesmen.

This is the Empire way.

Truth doesn't alter or grow old; 2 and 2 made four when Adam was a boy, and it amounts to the same to-day.—Billings.

peach-trees. No, sir! Most any old tree will bear leaves. But you want something besides leaves—you want fruit and plenty of it. If you want to be sure that the trees you plant will be fruitful trees, buy them direct from the Gage County Nurseries, Beatrice, Neb. They offer you a "square deal"—that means fruitful trees, true to name, sure to grow, and they guarantee the trees will reach you fresh and bright, and all right. There is some pleasure in planting the kind of trees they send you—trees that you know will bear fruit in plenty for your labors. Write for their catalogue to-day; their variety makes it easy to order just what you need.

What we read represents us when we go to seed.



Good Calves and Poor Ones

You can't grow a big bodied, productive cow, or a large fat steer from a calf that won't eat.

DR HESS STOCK FOOD

makes your stock healthy and hungry—and what they eat Dr. Hess Stock Food compels them to digest and put to proper use.

DR. HESS & CLARK, Ashland, Ohio.

Sick Headache

When your head aches, there is a storm in the nervous system, centering in the brain.

This irritation produces pain in the head, and the turbulent nerve current sent to the stomach causes nausea, vomiting.

This is sick headache, and is dangerous, as frequent and prolonged attacks weaken the brain, resulting in loss of memory, inflammation, epilepsy, fits, dizziness, etc.

Allay this stormy, irritated, aching condition by taking Dr. Miles' Anti-Pain Pills.

They stop the pain by soothing, strengthening and relieving the tension upon the nerves—not by paralyzing them, as do most headache remedies.

Dr. Miles' Anti-Pain Pills do not contain opium, morphine, chloral, cocaine or similar drugs.

"Sick headache is hereditary in my family. My father suffered a great deal, and for many years I have had spells that were so severe that I was unable to attend to my business affairs for a day or so at a time.

JOHN J. McERLAIN, Pres. S. B. Eng. Co., South Bend, Ind.

Farmer's Account Book and Ledger

Saves time and labor—a few minutes each day will keep it; systematizes farm accounts in every department; shows in the simplest manner how to increase profits and decrease losses;

THE KANSAS FARMER CO., Topeka, Kans.

Stock Interests

PURE-BRED STOCK SALES.

Dates claimed only for sales which are advertised or are to be advertised in this paper.

March 28, 1906—Shorthorns by Shawnee Breeders Association at Topeka State Fair Grounds, I. D. Graham, Secretary, Topeka, Kans.

April 3, 1906—James Stock Farm, Willard, Kans., trotting-bred horses.

April 13, 1906—Shorthorns by the Southeastern Breeders Association at Fredonia, Kans. H. E. Bacheider, Manager.

April 25, 1906—Shorthorns at Manhattan, Kans. F. M. Gifford, Wakefield, Kans.

May 1, 1906—George Allen, Omaha, Neb., Shorthorns.

May 8, 9, 10, 1906—Great sale of all beef breeds of cattle at Wichita Kans. D. B. Mills, Des Moines, Iowa, Manager.

Care of Young Pigs.

I give you my mode of care and treatment of young pigs; First, I wish to give the way I feed and care for them. I feed my sows on a bulky feed and keep the bowels in proper condition.

I feed my sows all the bran, corn, oats, and slop they want just before farrowing; I want the stomach full at this time. I put water in a trough where they can get it when they want it.

I think scours is the most prevalent disease among young pigs, and for this I have no remedy. I have not been bothered with scours among my pigs for six or seven years.

Now, I believe nearly all the trouble of scours in young pigs is brought on by overfeeding the sow. I know how anxious a breeder generally is to push his pigs along; I know how many young breeders feel. They have bought a good sow or two, to start a herd, and they are going to give them special care and push their pigs from the start and make some extra good ones of them.

Again, pigs from old sows have exceedingly sharp tusks, and if they are not cut off they will cause the sow to kill more or less of her litter.

Just before the sow is to farrow (and all hog men know pretty nearly when that will be—if they don't they are not hog men), raise the front of the house a little; the object being to compel the

quite a noted breeder of Berkshires, had the best litter of pigs he ever bred killed by an inexperienced man's feeding the sow five ears of corn.

All went well till the pigs were a week or ten days old, when he went one morning to her pen and she was just cleaning up a feed of corn.

The next trouble with young pigs is thumps. This trouble comes from the pigs getting too much milk and taking too little exercise.

The next trouble with pigs is canker-sore mouth. I have not been bothered with this trouble, however. To doctor this, swab out the mouth with a solution of carbolic acid and borax.

Prevent Lying on Pigs. H. D. Compton, Annes, Kan., tells the American Swineherd how he protects the pigs at farrowing time.

SLOANS LINIMENT CURES Swine Disease and Hog Cholera

NEWTON'S HEAVE AND COUGH CURE

VETERINARY COURSE AT HOME \$1200

PINK EYE CURE FOR HORSES AND CATTLE

Ring-Bone

Fleming's Spavin and Ringbone Paste

KRESO DIP KILLS LICE ON ALL LIVE STOCK

BLUE CATTLE LOUSE KRESO DIP KILLS THIS AND ALL OTHERS

PARKE, DAVIS & CO. HOUSE OFFICES AND LABORATORIES

Combination Thief-Proof Whip and Walking Stick

Winter Vegetables.

(Continued from page 323.)

moisten the roots, but do not wet the tops or they will rot. Cover the trench with boards, and then with two or three inches of soil, leaving small holes in the end for ventilation. If the weather becomes severely cold, it may be necessary to add more covering. The celery will soon bleach if put away in this manner. It can be bleached in the cellar, but is more apt to rot and wilt.

PARSNIPS.

Parsnips should be planted as early in the spring as land can be worked, in rows fifteen inches apart and thinned, after they come up, to two or three inches in the row. Keep them cultivated and free from weeds while they are small, and they will take care of themselves the rest of the season. In the fall or early winter after there has been some freezing, dig what you want to use during the winter. They can either be kept in a cold cellar or buried.

CARROTS.

Sow the first of April in rows fourteen inches apart, and cultivate the same as parsnips. They must be dug in the fall before hard freezing and may be kept in a cold cellar or buried.

SALSIFY.

Sow early in spring in rows fourteen inches apart and cultivate the same as parsnips. In the fall you should take up what you wish to use and pack in boxes with some soil and keep in a cool cellar.

Salsify and parsnips are both hardy and can be left in the ground all winter if desired.

Turnips for winter use, globe varieties preferred, should be sown the middle of August and allowed to grow until freezing weather begins. They can either be kept in a cold cellar or buried.

Catalpa Speciosa.

E. F. STEPHENS, CRETE, NEB.

It is a serious misfortune that the reputation of the catalpa has been sadly discredited by the use of the Catalpa bignonioides and its hybrids for the true Catalpa speciosa, the hardy Northern variety. The Catalpa speciosa is erect in its habit of growth. The trees attain a height of sixty feet and a diameter of three to four feet. The wood has remarkable durability.

A Catalpa speciosa telegraph pole fifty feet in height that had been in use forty years and still sound, was exhibited at the St. Louis Exposition. Fence-rails forty years in service, railroad ties subjected to heavy traffic for thirty years still retaining their original soundness, were also included in the exhibit.

A remarkable instance showing the durability of catalpa wood comes from Missouri. In 1811 an earthquake near New Madrid sunk considerable areas of catalpa groves. Water flowed in over these sunken timber lands, killing the trees. In 1888 trees of the Catalpa speciosa were yet standing undecayed after a space of seventy-seven years.

PURITY OF SEED NECESSARY.

The Catalpa speciosa seeds very sparingly. Because of the erect habit of the trees, seeds are not as readily gathered as from the low-branched, spreading Catalpa bignonioides. The latter and its hybrids yield seed very freely. Since these are so much more easily and cheaply gathered, a large share of the catalpa seed in the hands of seedsmen is gathered from the bignonioides or its hybrids instead of from the speciosa. Seed of the latter is not infrequently worth \$1 per pound while the seed of the bignonioides can be purchased for twenty cents per pound. Not all seedsmen are sufficiently careful to keep these varieties distinct. This has led to the planting of great quantities of trees which were not of the correct type. These have caused grievous disappointment and greatly harmed the reputation of the true speciosa.

In discriminating between the seed of the two varieties it is well to bear in mind that the speciosa blooms earlier than the bignonioides. The seed-pods of the speciosa are also larger and longer.

CATALPA VALUABLE TIMBER.

At the Dayton, Ohio, car works, the wood of the catalpa is used for inside finishing of passenger coaches. The timber possesses all the requirements of such work, being susceptible to a fine finish. Furniture factories also utilize catalpa wood in the making of chairs and desks. As timber the posts will endure two or three times as long as the oak.

Twenty years ago the writer planted groves near Crete, Neb., on the land of the late Thomas Doane, then superintendent of the Burlington system. Twenty-six years ago a farmer planted a catalpa grove of two and one-fourth acres in Southeastern Nebraska. This grove was planted in one corner of the farm covering a ravine not convenient for farm crops. Timber to the value of \$77 per acre has been sold therefrom and a careful estimate shows the value of the remaining timber to be \$200 per acre.

A gentleman in Butler County, Nebraska, had a fifteen-acre grove of catalpa planted nineteen years ago. While growing, it protected a corn-field from the aridity of the southerly winds materially increasing the yield of the field. This farmer is now selling the timber for fence-posts, realizing a value of \$150 per acre.

A Pawnee County, Nebraska, grove, planted fifteen years ago, is now being cut and marketed for fence-posts. The local price realized is eight cents for fence-posts three inches in diameter and twelve and a half cents for four-inch posts. On this basis there can be cut in this grove at this time timber to the value of nearly \$200 per acre.

The catalpa reproduces itself rapidly by suckers from the stump and thus produces the second growth more quickly than the first. This timber appreciates fertile soil and under favorable conditions grows two or three times faster than on poorer soil. To secure speedy and most profitable returns, it is wise to plant on land of good quality. It, however, thrives, though more slowly, on the poorest hilltops. This tree transplants more safely than almost any other tree because of its heavy, fleshy roots. It can be safely transplanted as street trees even after attaining large size. Forest plantations are usually planted with seedlings of the age of one year.

Uncle Sam at Garden City, Kans.

Plans and specifications for the machinery for the Garden City irrigation project in Western Kansas have been approved by a board of engineers, and bids will be opened at Chicago on May 28 for the contract. This irrigation project is not one of the large enterprises which the reclamation service is developing. It is, however, attracting considerable attention on account of the numerous novel features involved in its construction. The water must be recovered from the underflow waters of the Arkansas Valley, which lie in gravel deposits below the bed of the river and under the adjacent valley. It is, therefore, necessary to sink several hundred wells from which the water will be pumped and discharged into a collecting conduit. The wells are scattered along a line nearly five miles long. The power is generated at a single central plant situated on the railroad, and then is distributed by electricity to the wells.

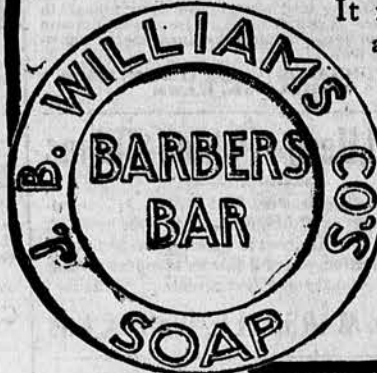
It is the first National reclamation project to be authorized in which it is necessary to pump water, and is the only project in which the water must be recovered from wells and not from a flowing surface stream of water. On this account much interest is taken in the project by people in Western Kansas and Nebraska. They believe that the demonstration to be made will be of value to many other communities situated similarly to that at Garden City.

Applications for water under this project have been made by the owners of more than 12,000 acres of land to be benefited, and the community is very enthusiastic concerning the future success of irrigation in the Arkansas Valley. Very large crops of wheat can be grown on the lands under this project, if a small amount of water is available in the fall and spring. Garden City has long been famous as an alfalfa center. This location seems to be especially well adapted to the maturing of the seed-crop of alfalfa, which has always paid well there. A sugar factory is being constructed at Garden City, where those who desire to raise sugar-beets will find a market for their crop.

Never enter a sick room in a state of perspiration (to remain for any time), for when the body becomes cold it is in a state likely to absorb the infection; nor visit a sick person—if the complaint be of a contagious nature—with an empty stomach. In attending a sick person, do not stand between the sick person and any fire that may be in the room, as the heat of the fire will draw the infectious vapor in that direction.

Williams' Shaving Soap

The lather from cheap, common soap is thin, harsh and quickly drying. If used for shaving it burns and irritates the face. The lather from Williams' Shaving Soap is rich, thick, creamy and emollient. It makes easy work for the razor and it keeps the face comfortable and healthy. Which do you choose?



Send 2c. stamp for trial sample (enough for 50 shaves).

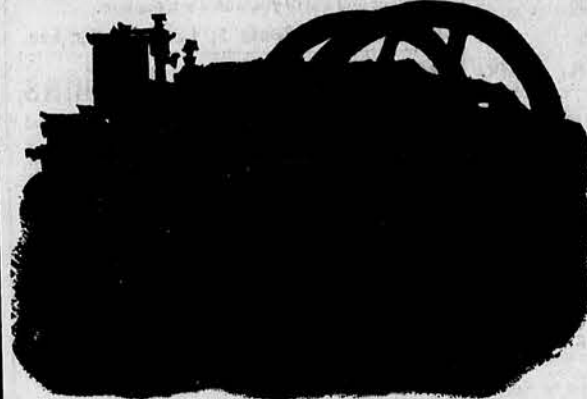
Williams' Barbers' Bar, Yankee, Mug, Quick & Easy Shaving Soaps and Williams' Shaving Sticks.—Sold everywhere. Address,

THE J. B. WILLIAMS COMPANY, Dept. A, Glastonbury, Conn.

We Are Growers of Pure-Bred, Medal-Winning Fire-Dried Seed Corn.

Twenty-five varieties. Will send you one of our new 1906 catalogues and four varieties, two white and two yellow, of what we consider the best for your section, or will send samples of any variety you may desire. **MANY FARMERS ARE DOUBLING THEIR YIELD WITH OUR SEED.** Our catalogue of farm, field and garden seeds will tell you why this is, and how you can do the same. Sent free on application.

J. B. ARMSTRONG & SON, Shenandoah, Ia.



Dempster Mill Mfg. Co.

Manufacturers of

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- Wind Mills
- Pumps and Cylinders
- Steel and Wood Tanks
- Well Machinery
- Grain Drills
- Cultivators

"Dempster Gasoline Engines 2 to 30 H. P.—2 and 4 cycle Horizontal or Vertical—for any duty."

Western Made and Well Made

Factory, BEATRICE, NEB.

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DEMPCSTER IMPROVED STEEL WIND MILL NO. 7

ROLLER RIM GEARS THEY STOP THE HOSE AND LESSEN THE WEAR. LATEST, STRONGEST, BEST. FACTORY, BEATRICE, NEB.

It Will Pay You To Investigate

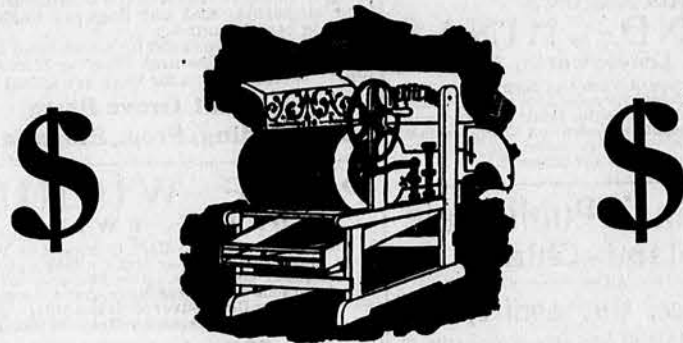
the merits of the

"PERFECTION"

CLEANER,

SEPARATOR,

GRADER.



This will clean, grade and separate all kinds of seed and grain. It will grade your seed so that you can get an even stand. It will take out all undeveloped seed. You should have the machine on your farm. It will save and make you money.

"WRITE NOW"

For prices and seed samples of how the Perfection does its work.

THE LEWIS, TUTTLE MFG. CO., 305 Kansas Avenue, Topeka, Ks.

