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KANSAS FARMER.

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In this paper is published a communication from the director of the Ontario Experiment Station giving the results of experiments with wheat. These results are exceedingly interesting even at this distance from the field of experimentation. In the absence of reports of such work in this State farmers of Kansas will find a study of these Canadian experiments very useful.

The method of destroying insect enemies by fumigation has been extensively practiced in California. It was first introduced as a means of combatting the San Jose scale. Later investigations have shown that there are numerous kinds of scale insects and that they infest fruit trees in nearly all parts of the country. Fumigation is more effective than any other method of destroying scale insects. It is used successfully in ridding buildings and apartments of troublesome insects of all kinds. These facts render valuable a new book by Willis G. Johnson, recently published by the Orange Judd Company, New York, under the caption "Fumigation Methods." It contains 313 pages and is effectively illustrated.

"The World's Work" for September, contains two papers of especial interest to Kansas. One of these is an appreciative sketch of Secretary Coburn. It brings out the fact that the great prominence attained by the Kansas Secretary of Agriculture is due to his persistent, tireless work as well as to his intimate practical knowledge of the farm and his happy faculty of getting from farmers the best that they know on any

subject. It is noted that Mr. Coburn is known throughout this country and in the old world for the accuracy and timeliness of his publications. The other paper referred to is an account of the corn-breeding at the Illinois Agricultural College. This work has been written upon in the KANSAS FARMER, but its importance and popularity have now attracted the attention of the managers of the great popular magazine "The World's Work."

At last accounts the Agricultural College had not been able to secure a successor to Professor Cottrell at the head of the farm department, even though a \$700 advance over Cottrell's salary had been successively offered to three men. This kind of talent comes high. Cottrell is receiving \$1,200 more than the college gave him. In view of the hard fight Cottrell had to make for proper recognition of this the most important department of the college it is small wonder that other competent men decline to take the position. There is only one man who can fill the place and can afford to take the chances involved as conditions are. That man is Prof. D. H. Otis, who has advanced rapidly hitherto and will continue to advance at this or some other institution.

The mineral products of the United States show a healthy increase. A tabulated statement issued by the director of the U. S. Geological Survey shows that these aggregated \$369,319,000 in 1880; \$619,648,925 in 1890; \$1,064,408,321 in 1900, and \$1,092,224,380 in 1901. The largest single item is pig iron, which in 1901 was worth \$242,174,000. Bituminous coal is second, with a value of \$236,201,899 in 1901. The third item in importance is Pennsylvania anthracite coal with a value of \$112,504,000 in 1901. These values are large, but compared with those of agricultural products they are of moderate dimensions. The production of minerals is in the hands of great capitalists, and receives more attention from financial and some other prominent journals than its relative importance entitles it to.

KANSAS FARMER'S NEW WALL ATLAS.

The KANSAS FARMER has arranged with the leading publisher of maps and atlases to prepare especially for us a new Wall Atlas, showing colored reference maps of Kansas, Oklahoma, Indian Territory, the United States and the World with the 1900 census. The size of our new Wall Atlas is 22 by 28 inches. The outside map shows the flags of the United States, as well as the flags of all nations. In addition thereto is given a list of tables, an exhibit of the products and their values of the United States and the World. One of the maps shows all States, Territories and possessions of the greater United States and facts as to their capitals and the first settlements and in relation to their general government, areas, population, and legislature. The atlas also gives the growth of our country, showing the population of all towns by States, of 3,000 and over for the census years of 1880, 1890, and 1900.

This grand new census edition atlas also shows for every country on earth, the government, chief executive, area in square miles, population, capital and its population. This excellent educational work should be in every home. It sells for one dollar.

Every one of our old subscribers who will send us two new subscribers at

50 cents each for the remainder of the year, will receive a copy of this splendid new Wall Atlas postage prepaid.

PURE-BRED CORN.

It is an admitted fact that a pure-bred Hereford bull is a better bull for beef purposes than a Texas ranger. No one would hesitate to choose the Hereford as a sire since it is an established fact that his calves are better feeders, because they put the meat in the valuable "cuts," hence sell for high prices on the market. When we compare the two we can notice a vast difference in color, head, shoulders, crops, back, loins, hind quarters, and legs. The better the judge, the more difference one can see in the two animals. While no one will dispute there is a vast difference between pure-bred cattle and scrubs, many are skeptical in regard to any difference between pure-bred and scrub corn. Many men have selected their seed for years and claim they have a superior variety of corn. This may be true, but in a large number of cases, while it may fill the ideal of the corn-breeder who raised it, it would compare with pure-bred corn as the Texas ranger compares with the Hereford. For a detailed description of the ten varieties of corn recognized by the Illinois Corn Breeders' Association, we would refer the reader to page 238, "Kansas Wheat Growing," a report of the Kansas State Board of Agriculture for March, 1902, which can be obtained by writing to F. D. Coburn, Topeka, Kans. Any person interested in corn should obtain this report as it will be of value in selecting his seed for future use.

Because so many different ideals exist in regard to good corn, one not trained to judge corn would not be able to see any marked value in pure-bred seed. The writer recently visited the farms of J. W. & J. C. Robison, at Topeka, Butler County, Kansas, and selected fifteen ears of Leaming corn, of which they have 100 acres, and in comparison with other corn grown in the neighborhood finds it deeper grained, more rows to the ear, and while the corn was affected by the drouth, the same as other corn in the neighborhood, it shows the results of breeding, in that there are fewer barren stalks, and more uniformity in ears than one finds in common corn-fields. Mr. Robison has 100 acres of Leaming's Yellow Dent, 100 acres of Boone County White, 8 acres of corn for which seed he paid \$15 a bushel. Each field is protected from cross-pollination with scrub corn by natural surroundings of trees and prairie. Mr. Robison was one of the audience at the meeting of the State Board of Agriculture last January, and sent for seed from Illinois, obtaining his seed from Funk Bros., of Bloomington. Kansas farmers in general are beginning to recognize the value of pure-bred corn and it has been said that there is being formed a Kansas Corn Breeders' Association. Kansas students are going to Illinois to study corn-judging and breeding, and in a few years we will be talking about our pedigreed corn, as we now point with pride to our pedigreed cattle.

FAIR TICKETS CHEAP.

On account of the wet weather and the inability of the farmers to get to town, the management of the Kansas Exposition has decided to continue the advance sale of tickets until Saturday night, September 6, at nine o'clock. There has been such a demand for family tickets that the management has

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issued a special family ticket good for six (6) admissions at any time by anybody, horses and carriages free, for \$2 apiece. The six admissions on the family ticket can be used all at one time, or at different times by any person. The admissions are indicated by crosses which are punched out, one for each admission. These tickets can be secured at the following stores on the north side of the river: Arnold Drug Co., T. M. James & Son, and J. W. Priddy. On the south side they are for sale at the following places: Geo. Burghardt's, C. S. Eagle's, George Stansfield's, and at the Moore book and stationery store.

If readers of the KANSAS FARMER prefer to send to this office for tickets, we will invest any money sent within the above-named limit, tickets to be called for at the business office of the KANSAS FARMER, 116 West Sixth Avenue.

IS IT TOO LATE TO SOW ALFALFA?

The wet weather which prevailed over much of Kansas during the last two weeks of August retarded farm work. Many who had expected to sow alfalfa, and had the ground nearly ready, were stopped by the weather. The question is asked whether it is advisable to sow now, or to wait until next spring. It is conceded that in general the alfalfa should be sown during the last half of August. Fall seeding has succeeded so much better than spring sowing in Eastern Kansas that it will probably be wise to take chances on at least a part of the intended acreage and sow as soon as possible.

The condition of the soil, with its abundant stores of water from the surface to a great depth, is such as to greatly reduce the risk of late sowing. The roots of the alfalfa will strike into the moist soil and will encounter no dry subsoil. They will therefore have

excellent opportunity for such vigorous development as is needed to withstand the first winter. The writer greatly prefers early sowing, but would not hesitate to use a good seedbed at any time before the middle of the present month.

The great value of a stand of alfalfa, on account of its large yield of superior feed for any year together with the advantage of its certainty when the season is adverse, makes it worth while to incur considerable risk in securing a stand. True the seed is expensive. But the man who has a well-set field of alfalfa can safely value it at \$5 an acre above any other land on his farm. Let the good work of sowing go on until at least half of the farm shall be producing this sure and valuable crop. Then it may pay to plow up a little of the oldest alfalfa and for a few years raise the heaviest crops of corn or potatoes the farm ever produced. Keep on sowing alfalfa.

GOOD JUDGMENT WAS USED.

Some of the wise newspaper men are berating the farmers roundly for selling so much of their live-stock last season when the dry weather was blasting the feed crops. Well, sometimes even editors' hindsight is better than their foresight. Again, very many farmers did wisely to reduce their stock rather than to overwork their pastures. But, even the census of last March showed no very large reduction of the numbers of cattle. Doubtless an enumeration taken now would show that a large part of the reduction in hogs has been made good by this season's pig crop. The hogs kept over were, in unusual proportion, breeding stock. Last spring's pigs are now vigorous shoats, ready for the work of converting corn into dollars via the pork route.

The worldly wisdom of the farmers of Kansas which brought the State through the great crisis with colors flying and prosperity uninterrupted deserves commendation rather than carping criticism.

EDITORIAL NOTES ON THE IOWA STATE FAIR.

The magnificent new live stock pavilion of the Iowa State Fair was dedicated on Wednesday with appropriate ceremonies in the presence of a vast audience of comfortably seated people. Governor Cummins, Senator W. F. Harri-man, and Congressman J. P. Dolliver made the speeches and the music was furnished by the Mitchellville orchestra. This building is splendidly adapted to its purpose. It is constructed of brick, steel, and glass and affords comfortable seating room for about 5,000 people without crowding and a ring in which can be shown hundreds of animals at one time.

The floor is covered with tan-bark, and upon it were shown as many as three breeds of cattle while the draft and coach horses had ample room to show their action. It is a great building and all the flights of oratory indulged in by the speakers on this occasion were amply justified.

Iowa has become a great State because she fosters the live-stock industry which is the foundation of all agricultural prosperity and the two best investments she has made along this line has been in a liberal care of her State Fair and of her Agricultural College.

One of the most enjoyable comforts enjoyed by visitors at the State Fair was the efficient service rendered by the Rock Island Railroad in carrying the large crowds to and from the fair grounds. With a full-sized train leaving each ten minutes during the day there was little cause for delay and the danger usually experienced in handling large crowds was practically eliminated.

One of the surprising facts to be noted in connection with the State Fair was the surprisingly small number of accidents which occurred.

One of the Truman Bros., the great draft horse importers and breeders, of Bushnell, Ill., was kicked by one of his splendid stallions while gaiting him in the pavilion. One rib was broken and he suffered severely but at last accounts it was thought that he would recover. The accident was not due to any viciousness on the part of the horse but rather to the fact that the owner happened to be too near the animal who struck him in his playfulness.

One of the most interesting exhibits



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amid thousands of good ones, was that made by the Iowa Incubator Company. Here was shown their famous incubators, both outside and in, as well as the brooders. Both machines were at work and plenty of young poultry showed the results. It was a good exhibit of a good machine.

The heavy rain on Monday put the ground in bad condition and on the race track it was wretched. Lovers of the speed ring feared that they were doomed to disappointment, but a large gang of men assisted by the 1,000 Texas Angoras that were on exhibition soon removed these fears and the races went on. These Angoras were driven around the track many times and in about two hours had the mud beaten down so hard that the men soon had the track in condition. The Angoras saved the day.

Iowa is a great State but she has become so under difficulties. While Kansas farmers are feeling contented in the knowledge that their corn crop is safe, Iowa farmers are in serious anticipation that probably one-half of their corn crop will be destroyed by frost. There is real danger of this as the corn is very late in places and the weather quite wet. It is noticeable that the large thermometers one sees hanging in front of business houses are made to fit the climate. They are about as long "below" as "above." GRAHAM.

The Agricultural College Question.

The following lucid statement of the Agricultural College issue appeared in the Kansas City Star of recent date:

The dissensions which have prevailed in the management of the Kansas State Agricultural College for nearly a year and a half have been brought to public attention within the last week by reports that the president, E. R. Nichols, has been offered the presidency of the Rhode Island Agricultural College, the discussion of the likelihood of his acceptance and his final declination of the offer. The present disturbance, if it may be so called, had its beginning probably in the unsolicited appointment by Governor Stanley of F. D. Coburn, Secretary of the State Board of Agriculture, to be one of the Board of College Regents. Mr. Coburn has for thirty-five years been identified with the State's agriculture, a farmer, agricultural editor, head of the State's agricultural department for something like ten years, and three years president of the board of regents of the college, from which all three of his children are graduates.

Mr. Coburn is full of the idea that Kansas, being so largely an agricultural State, and this the State's one and only agricultural college, agriculture and closely related sciences should be the foremost and predominant features of its teaching. He does not say that other useful studies and branches of education should be ignored, or even minimized, but, on the contrary, says they should be given generous recognition, yet keeping agriculture and animal husbandry to the fore so prominently as to always have it unquestioned and unmistakable, with the professor of agriculture at the big man of the faculty. Further than this the school is especially endowed and intended for the instruction of the farmer youth of the State, in the business of the farmer, stockman and dairyman, giving an edu-

cation such as provided by no other school, and which no other school is expected or intended to provide.

MR. COBURN'S CONVICTIONS.

It has been his growing conviction from the first, and one which is fully shared by members of the board of agriculture, along with thousands of stockmen and farmers everywhere, that the present head of the college, who is a professor of physics, is entirely too limited in general information for so important a position. Mr. Coburn believes President Nichols is without the elements of leadership or executive ability; lacking in sympathy for what should be the dominant features of the school, and unable to comprehend the large purposes for which it was endowed.

No one has charged that Mr. Nichols desires to eliminate agricultural teaching, but it is claimed he has always been intensely jealous of the agricultural department, and for years there has been a disposition to repress it and the men having it in charge, even while professing, as he has come to do since the disturbance began, to be its friend and champion. Illustrating this, the college fifteen years ago paid E. M. Shelton, its professor of agriculture, \$2,200 per year. When he was called to a like position in Australia, at a greatly increased salary, C. C. Georgeson was given the chair at \$2,000. He was called to the government service and Professor Cottrell was elected, with the salary whittled down to \$1,800. When Mr. Coburn, desiring that agriculture be given a little better recognition, moved that the pay be made \$2,000, the board promptly voted it down, on the plea that such a salary could not be afforded, although it had not five minutes before voted Mr. Nichols an increase of \$400 per year, making his pay larger than that given any of his predecessors—such men as John A. Anderson and George T. Fairchild—and equal to that of the Governor of the State, besides paying his rent for one of the finest houses in Manhattan.

A QUESTION OF SALARY.

When the slight was put upon Professor Cottrell and his department made it impossible for him to even finish out the last year for which he was employed and retain his self-respect, and other teachers who had spent years in the work in other States applied to President Nichols for information about the duties and salary, his answer was, "the salary will be from \$1,500 to \$1,800." Other States pay their professors of agriculture from \$3,000 to \$4,500 per year, but Mr. Nichols as a regent, refused to vote more than \$1,800 for his time-ried, capable colleague and associate, Professor Cottrell, who at once found waiting for him more than one offer of at least \$3,000 yearly, with house rent and garden extra.

As in other lines of work, college people soon learn of the atmosphere and conditions which obtain at any particular institution of their kind, and this counts for much in their deciding upon whether they desire positions there. This seems to be borne out by the fact that several agricultural college workers early applied for the chair vacated by Professor Cottrell, but later when learning how affairs were conducted at Manhattan concluded to quietly with-

draw or let their applications go by default. This occurred in three instances that are known, and possibly there have been others. Within the past two weeks the Board of Regents has formally tendered the chair of agriculture, with a salary increase amounting to about 40 per cent to three different professors, in as many States, and all forthwith declined it, notwithstanding one of them had shortly before been an eager applicant. It would seem that their conclusion was that they could not afford to be identified as agriculturists with an agricultural rolloge where what should be the main feature is reputed among the profession to have so little standing.

SENATOR STEWART A FARMER.

The one other regent identified with agricultural interests is Senator S. J. Stewart, of Allen County, who has been a lifelong farmer. While openly expressing his displeasure at much that has been done in the institution he has not until recently very actively taken sides, because of a desire that harmony should seem to prevail, and that the administration of Governor Stanley, by whom he was appointed, should not be annoyed by reports of dissensions. By inclination Mr. Coburn feels much the same way with reference to the Governor, whom he would preferably please, and of whom he is very fond.

Senator Stewart thinks the bill that was slyly engineered through the last Legislature, making the president of the college a regent, was a mistake, and that it is bad taste and doubtless bad policy in Mr. Nichols to sit and participate with a vote in the board meetings when his administration, salary and college affairs are acted upon, and it is not improbable that Stewart may endeavor to have the act repealed at the next session. Other senators are dissatisfied to such an extent that they are likely to oppose needed appropriations unless there is a change in the conduct of the school's affairs.

The farmers of the State think there is nothing too good for the Agricultural College, but they want its affairs administered in such a way that their interests are cared for there in the proper spirit. They realize fully that the saving, profitable adjunct of their husbandry is the live stock which converts and condenses their coarser products into readily marketable meats and milk. They expect their sons to become proficient while at the Agricultural College in selecting, rearing and fattening the best animals of the various breeds, where types of each should be before them as object-lessons, and for careful instruction and experiment day by day. There were formerly thoroughbred herds at the college of several approved breeds, but under recent management the situation became such that twenty months ago the only animal of known lineage maintained at the Agricultural and Experiment Station Farm was a yellow dog.

Professor Cottrell made every effort possible to have President Nichols let him personally urge upon the legislators, many of whom he knew, a modest appropriation for a beginning in blooded stock, but was humiliated by a flat refusal. Finally, the Improved Stock-Breeders' Association summarily took the matter in hand, and through Senator Allen, of Doniphan County, obtained,

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in spite of Mr. Nichols' hostility, the money to buy what cattle the college now has, but nothing has yet been provided for buying improved horses, sheep or swine. However, several hogs and four or five thoroughbred cattle were donated by patriotic stockmen who were ashamed to have it said that the farmer boys' college had none.

THE STOCKMEN INCENSED.

The stockmen were so incensed at Mr Nichols that last January at their annual meeting in Topeka a resolution was introduced, intended as a censure of him and his antagonistic course, but hearing of this he came to Topeka and watched the proceedings day by day, and when it was about to be adopted he begged a hearing and pleaded that he be let off. The members charitably let it drop.

The KANSAS FARMER, the agricultural paper of the State, edited by E. B. Cowgill, formerly a member of the college faculty, is a strenuous advocate of the school's being made what it was intended to be, and says that this can never be so long as it is managed as now. Those longest and in closest touch with the college insist that the conflict which now exists will not cease until a radical departure is made from present conditions, and the institution manned by officials who understand and sympathize with its objects.

Mr. Coburn is the leader of the opposition to the present college administration. It is a leadership, however, that he has not desired or sought. He maintains that personalities have nothing to do with the situation. He says that it should be an agricultural college or its name should be changed. He is not anxious to be a regent, but so long as he is one he intends to maintain his position, regardless of how his colleagues may see their duty, or of the consequences to himself. The idea that the institution shall be merely an overgrown rural academy, teaching a little of this, a smattering of that, and not much of anything in particular, is very distasteful to him and all who indorse his position. They insist that such schools are abundant in every direction already, and for those who want further education in like lines the State University and innumerable literary and denominational colleges are readily available.

A SLUR AT MR. COBURN.

The suggestion advanced by some who are not satisfied with the present management that Mr. Coburn wishes to displace Mr Nichols in order to obtain the presidency himself could scarcely come from anyone who knows the situation and the man. No combination of circumstances could arise which would for a moment tempt him to accept any position in this college or any other, and he has no ambitions to be a boss or a disturber.

Those who are opposed to Mr. Nichols do not blame him for clinging tenaciously to the job which, as a result of political upheavals, unexpectedly, by the change of a single vote, dropped into his lap, carrying with it a more than doubled salary, and they do not want a capable president paid less salary. In fact, they claim that the position should instead be filled by at least a \$5,000 man, but they begrudge paying \$3,330 to Mr. Nichols. They want to see at Manhattan a man as big as the

one who presides over the State University, and are willing to pay him as much salary.

Persons best informed in these matters insist it is inevitable that the man at the head of such a school, with supervision of its details day by day, has far more to do with its actual tone and character than its board of control has. The regents meet but briefly three or four times a year, and they have had very little or possibly no familiarity with this or any other school of similar purposes and objects. It is not expected that a majority of the present board will consent to take action toward removing Mr. Nichols, but the fact that the terms of three of its members will expire in April makes possible that an entire reorganization of the board, faculty and Experiment Station staff, will lift the institution back to the high place it properly occupied in public esteem under such virile, full-grown leadership as Anderson and Fairchild, and before partisanship, politics and politicians began making it a foot-ball. This apparently is the present aspiration of those in whose especial interest the Morrill bill provided one of these institutions for each State.

Agricultural Matters.

Results of Winter Wheat Experiments in Canada.

EDITOR KANSAS FARMER:—Winter wheat experiments occupied 188 plots at the college, and 603 plots throughout Ontario in 1902. On the whole, the wheat came through the winter well and the yield of both grain and straw was satisfactory. The weak-strawed varieties were badly lodged, and, owing to the wet weather, some of the grain was sprouted before it was harvested. The damage done by the Hessian fly was very slight, the plots at the college being practically free from the ravages of this insect in 1902.)

VARIETIES.

Ninety-five varieties of winter wheat were grown at the college this year. The ten varieties giving the greatest yield of grain per acre, starting with the highest, were as follows: Extra Early Windsor, Dawson's Golden Chaff, Imperial Amber, Pedigree Genesee Giant, Prize Taker, Economy, New Columbia, White Golden Cross, Early Ontario, and Johnson. The Extra Early Windsor very closely resembles the Dawson's Golden Chaff variety. Those varieties possessing the stiffest straw were the Dawson's Golden Chaff, Extra Early Windsor, Clawson Longberry, and American Bronze.

Experiments have shown that the sprouting of wheat greatly injures it for seed purposes as well as for flour production. All of the varieties at the college this season were more or less sprouted before they could be harvested. Those varieties which sprouted the least were the Red Cross, McPherson, Wisconsin Triumph, and Reliable, and those which sprouted the most were the Pedigree Genesee Giant, Early Arcadian, and Oregon. Fifty-seven varieties were sprouted less and thirty-seven varieties were sprouted more than the Dawson's Golden Chaff. The varieties without beards were sprouted as badly as those with beards, and the hard wheats were sprouted slightly more than the softer varieties. The white wheats, as a class, however, were sprouted much worse than the red varieties.

A deputation of ten persons from the Dominion Millers' Association visited the college during the past summer, and, after examining the different varieties of winter wheat, recommended that the following varieties be grown extensively in Ontario. Red Wheat; Michigan Amber and Turkey Red; and White Wheat, Early Tennessee Giant and Bulgarian.

SELECTION OF SEED.

The average results of six years' experiments show that large plump seed yielded seven bushels fifty-one pounds of wheat per acre more than the shrunken seed; and six bushels thirty-three pounds more than the small plump seed. Sound wheat produced five times as great a yield of both grain and straw as seed which had been broken in the process of threshing.

TREATMENT FOR STINKING SMUT.

In the average of four years' tests, seed wheat infested with smut spores produced grain containing the following number of smut balls per pound of wheat: Untreated, 456; treated with potassium sulphide, 11; treated with copper sulphate (bluestone), 2; and treated with hot water, 1. The copper sulphate (bluestone)

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treatment consisted in soaking the seed for twelve hours in a solution made by dissolving one pound of copper sulphate in twenty-four gallons of water, and then immersing the seed for five minutes in lime water made by slaking one pound of lime in ten gallons of water. The hot water treatment consisted in immersing the wheat for fifteen minutes in water at 132° F. After each treatment, the grain was spread out and stirred occasionally until dry enough to sow.

QUANTITIES OF SEED.

From sowing 1, 1½, and 2 bushels of winter wheat per acre for each of six years, average yields of 40.2 bushels, 43.3 bushels, and 43.9 bushels per acre, respectively, were obtained. As two varieties of wheat were used each year, these averages represent twelve distinct tests.

METHODS OF SOWING.

Winter wheat which was sown broadcast by hand gave practically the same results as that which was drilled in with a machine in the average results of tests made in each of eight years. The land was in a good state of cultivation in every instance.

DATES OF SOWING.

Winter wheat sown at the college during the last week in August or the first week in September yielded better than that sown at a later date in the average results of tests made in each of the past eight years. In 1902, the highest average yield was obtained from sowing on September 2, 1901.

PREPARATION OF THE LAND.

In an experiment conducted for four years, winter wheat grown on land on which a crop of field peas was used as a green manure, produced an annual average of 22.1 per cent more wheat per acre than on land where a crop of buckwheat was plowed under. In another experiment which was carried on for one year, winter wheat grown on land prepared from clover stubble produced 20.7 per cent more wheat per acre than on land prepared from timothy stubble. In a two years' test with commercial fertilizers, an application of 160 pounds of nitrate of soda per acre increased the yield of wheat 18.8 per cent.

VALUE OF SEED FROM WHEAT CUT AT DIFFERENT STAGES OF MATURITY.

For seven years in succession, five plots of each of two varieties of winter wheat were sown at the same time in the autumn, and cut at five different dates in the following summer—a week being allowed between each two dates for cutting. Seed from each of the seventy cuttings was sown and the crop therefrom was harvested when

ripe. In the average results of these tests, it is found that the heaviest weight of grain per measured bushel and the largest yield of both grain and straw were produced from seed taken from the crop which had become very ripe by remaining uncut for the longest period of time.

RESULTS OF COOPERATIVE EXPERIMENTS.

In the autumn of 1901, five varieties of winter wheat were distributed throughout Ontario for cooperative experiments. The average yields per acre of the cooperative experiments are as follows:

Varieties.	Tons straw.	Bu. Bu. 60 lbs.	Grain.
Dawson's Golden Chaff..	3.2	32.7	
Imperial Amber.....	3.2	32.0	
Early Genesee Giant.....	3.1	29.5	
Michigan Amber.....	3.3	27.5	
Turkey Red.....	3.1	26.9	

The popularity of the varieties with the experimenters is represented by the following figures: Dawson's Golden Chaff, 100; Imperial Amber, 78; Early Genesee Giant, 55; Michigan Amber, 50; and Turkey Red, 47.

The cooperative experimental work with winter crops is being considerably increased throughout Ontario this autumn, and will include tests with winter wheat, winter rye, hairy vetches, crimson clover, and commercial fertilizers.

During the present year, no less than 2,935 Ontario farmers are conducting cooperative experiments with spring crops, the results of which will not be ready for publication until December next. C. A. ZAVITZ, Director, Guelph, Canada.

Ontario Agricultural College, August 23, 1902.

Redtop Grass.

..EDITOR KANSAS FARMER:—I can answer an inquiry that appeared in your paper of August 14, from D. E. Spencer. I have been familiar with Redtop grass for forty-five years. It will grow and make a good crop where water stands for months at a time. C. C. JONES. Holton, Jackson County.

The Old Men and Women Do Bless Him.

Thousands of people come or send every year to Dr. D. M. Bye for his Balm Oil to cure them of cancer and other malignant diseases. Out of this number a great many very old people, whose ages range from 70 to 100 years, on account of distance and infirmities of age, they send for home treatment. A free book is sent, telling what they say of the treatment. Address Dr. D. M. Bye, Drawer 505, Indianapolis, Ind. [If not afflicted, cut this out and send to some suffering one.]

to the main groups of buildings and not to the other structures which will fill the grounds. In these latter edifices the imaginative genius of the designer will have free play both as to architectural form and color.

In the building of the Liberal Arts, the architects have applied color in the shaded walls of their loggias on both the main and minor facades. They have provided for elaborate mural friezes in which the sinewy forms of the laborer and mechanic will be contrasted with the graceful lines of allegorical figures.

The subjects of these decorations will be the various divisions of the Liberal Arts. For example, one of the main friezes to the right of the entrance, will symbolize the progress of printing from its infancy to its present development. Another frieze will represent photography, another the manufacture of musical instruments, going back to the patriarchs of the infant world in Egypt and Greece, and blazoning in colors a living, interesting outline of this art.

As pictures are recognized as one of the strongest and most lasting means of importing knowledge, the instructive quality of these paintings and their future historical value to those fortunate enough to obtain reproductions of them can not be over-estimated. It is hoped that these magnificent opportunities which the architects have furnished the painter may be grasped by men of genius who have the ambition to leave lasting memorials of their skill. These mural decorations call for men, who in our time, will fill the place that Raphael filled for his period; for men with the genius of Eugene Delacroix or the ability and greatness of Puvis de Chevannes. The opportunities on these great buildings should fire the ambitions of our modern painters as the decoration of the Sistine Chapel did the great Michael Angelo.

The great vaults of the hemicycle at the main entrance of the Liberal Arts Building will be frescoed in a manner to correspond with the loggias and to add warmth and wealth of color to these colossal portals.

The architects of the Liberal Arts Building have made architecture subservient in a certain sense to sculpture and painting; it being the desire that there be perfect union of the three great allied arts; that upon its completion the building shall be a harmonious development and blending of the three, each working with the other for the success of the whole. It is expected that there will be left memories as delightful as those that result from a pilgrimage to the picture galleries and halls of sculpture of Munich, Rome, Antwerp, Florence, Venice and Dresden.

At the recent exposition in Paris, the use of color in the loggias was productive of many beautiful and striking effects. At Buffalo the "Rainbow City," the use of color was rather overdone, in the opinion of many. This over use of color seemed to defeat many of the magnificent effects that are obtained by its judicious use contrasted with great surfaces of plain tone. The treatment of the ceilings in the entrances of the building of Horticulture at Buffalo was a refreshing and delightful example of the value of color rightly applied.

An example of mural decoration suggested for one of the hemicycles of the Liberal Arts Building by Mr. F. L. Stoddard, illustrates "The School of Sapho." In the center is the figure of the Poetess reciting one of her odes to the accompaniment of a harp which she touches lightly. Around her are grouped in easy attitudes her maidens listening as she tells of the powers of the little God. Two doves just to the right repeat the story. The color scheme is brilliant in pinks, greens, and blues and in the distance is the deep blue of the sea and the sunlit city. The composition of lines and of light and shade is so arranged as to concentrate the interest

upon the central figure and the whole idea is one of pleasant repose and entertainment.

The artistic success of the World's Fair at St. Louis depends largely on the unity and harmony in which the architects, sculptors and painters work. If these forces will work to the attainment of the highest ideal, the result will be one of bewildering enchantment and everlasting glory to all who participate in the building of this great fair.

The Poultry Yard.

A Lot of Questions.

ANSWERED IN THE NATIONAL STOCKMAN AND FARMER.

What breed of chickens would you advise a farmer to breed for best all-round general-purpose fowls?

R. B. T.

The best breed for a farmer to breed is the one that suits his fancy best. If you are looking for a good general-purpose fowl regardless of your favorite (should you have a preference) you will find no better birds than the Plymouth Rocks, Wyandottes, or Orpingtons. All of these breeds are hardy, mature early, and are splendid winter layers.

Please advise us if incubators can be run as successfully out of cellar as in cellar. Some of our neighbors tell us that we must have a cellar before we can operate an incubator.

NELLA PLUM.

Incubators can be operated outside of cellar but not as successfully. An incubator should be operated in a room where the moisture as well as the general temperature may be controlled. At times the outside air is very dry, and at other times it is very moist, simply loaded to the point of saturation. Any one can see under such variations it would be impossible to obtain satisfactory results with any brand of incubators. Most manufacturers instruct their customers wrong in advising them to operate their machines in any old building, as any one well knows that we must have uniform temperature and moisture throughout the hatch in order to receive satisfactory results, and they can not be obtained in any other place as successfully as in a well-ventilated cellar.

Do you think it would pay to buy a bone-crusher? I have only seventy hens and expect to winter that many and possibly a dozen or so more. What bone-cutter do you think is the best for me to buy?

W. H. C.

The value of a fresh bone-cutter in the poultry yard has been proven, and we think it indispensable during the winter season. There are several makes of bone-cutters on the market that are good ones. I would write a postal card to a number of manufacturers and get their catalogues and see which one I would like best from the descriptions given by each company. Buy the one you think would suit you best. We would buy the cutter that would admit any beef bone in the hopper. Some cutters will not admit the shank bone in the hopper, which requires an ax to break them up first before introducing them into the hopper. All this requires a lot of time and can be saved by buying a machine that will do all the work itself, with no more cost than the small chopper machine.

My chicks and old fowls are dying and what chicks I have are not growing. They have a watery diarrhoea, from brownish to yellow in color, have rough plumage. The combs on a number of them turn from purple to almost black in color. The birds will not eat but sit around and soon die. Is it cholera? If so what can I do for them? I have given everything heard of or suggested by neighbors but nothing seems to do them any good. Mrs. A. J. J.

From the symptoms set forth in your statement it seems that you have been too kind to your fowls and they are suffering with disease of the liver. As you fail to give your regime of feeding we are led to believe beyond any reasonable doubt that you have over-fed your flock, especially with fat-producing foods such as corn and stimulating foods and spices, and failed to give them proper exercise. The comb turning black and birds refusing to eat, and a discharge of a watery, yellowish character indicate the seat of disease in the digestive organs, obstruction of the circulation of the blood due to a diseased crop, clogged gizzard and inflamed bowels, which shows that the liver has been over-taxed. We would give a teaspoonful of castor oil once a day in order to get the liver in proper working order, put them on a light diet, such as cut clover hay, sprinkled with wheat bran. If

the diarrhoea continues we would put a teaspoonful of tincture nux vomica in a pint of drinking water, fed and give castor oil occasionally as given above. This treatment has proven most beneficial for us, but we should use caution in feeding fowls, especially those that are compelled to be yarded or deprived of free range. J. C. CLIPP.

We have a nice flock of pure-bred White Wyandottes. We would be pleased to advertise them, but have never advertised any yet. What paper do you think would pay us best and how many papers would you use? Do you think it would pay to advertise our stock?

NETTIE J. HEMOLD.

If you have high-class stock we think beyond a doubt it would pay you to advertise them. As to what paper would pay you best would be hard for me to say as no one can see into the future, but the paper that has a known large circulation among good, well-to-do farmers that are interested in the class of stock you produce is the best place to plant your advertisement. Never advertise in a cheap worthless paper. A paper that has only a local circulation never pays the advertiser. Select a national circulated journal. The number of papers to use will depend on the quantity of stock you have for sale. If you have a limited flock one or two papers will be sufficient. If you have a large flock possibly four or five papers would pay you. Personally we prefer only a few papers and use them permanently if found good business bringers. Never "spurt" up in one paper one time and drop out to use some other. Stick to one good circulated farm paper and success is sure to follow.

As I am only a beginner I have everything to learn, and would like to know what is the matter with my chickens now. Had 130 fine healthy looking chicks hatched in an incubator. I put them in a large roomy brooder and as my trouble before this was in losing chicks with bowel trouble I took all care to avoid this. I kept plenty of sand and fresh water by them from the start and for the first few days fed rolled oats, and as they grew older I began to feed pone made of corn-meal and

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ground whea. Also fed coarse ground corn and wheat, giving a feed of boiled meat twice a week. Feed now for two weeks: corn-meal, boiled rice, potatoes, meat, table scraps, and in fact just as much of a variety as I can get. These chickens are now 5 weeks old and their wings are about all that have grown, and the chicks are as light as though they were all feathers. They will be weak and their wings drag around for two or three days and then die. I have lost about thirty of them and nearly all that have died have been those with long wings. They have never had any bowel trouble nor have they ever been with older chickens. What is the trouble? A READER.

Answer: (1) May be the temperature of your brooder is too high. (2) It may not be kept scrupulously clean. (3) One hundred and fifty chicks is at least three times too many to put in one brooder. (4) If your brooder is not closely looked after the chances are there are mites in it and perhaps lice are on your chicks. (5) Your food ration; you are feeding quite too ex-

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Grange Department.

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Conducted by E. W. Westgate, Master Kansas State Grange, Manhattan, Kans., to whom all correspondence for this department should be addressed. News from Kansas Granges is especially solicited.

NATIONAL GRANGE.

Master..... Aaron Jones, South Bend, Ind.
Lecturer..... N. J. Bachelder, Concord, N. H.
Secretary..... John Trimble, 514 F St., Washington, D. C.

KANSAS STATE GRANGE.

Master..... E. W. Westgate, Manhattan.
Lecturer..... A. P. Pearson, McLeouth.
Secretary..... Geo. Black, Olathe.

Postal Banks in Canada.

Postal savings banks seem to be a success in Canada. The Statesman's Year-book for 1899 gave this bit of history: "Post-office savings banks under charge of the government have been in operation in Canada since 1868; there are also government savings banks, under the management of the Finance Department in the Maritime Provinces, Manitoba, and British Columbia. In 1897 there were 779 officers of the former and 28 of the latter. In 1897 the post-office savings banks had 135,737 depositors and \$32,380,829 on deposit."

In 1900 the Canadian postal savings banks numbered 847—an increase of 68 in three years. During the same period the number of government savings banks had decreased from 28 to 24. The number of depositors in the post-office savings banks increased more than 15,000 from 1897 to 1900 and the increase of deposits amounted to more than \$5,000,000. All this should be sufficient to prove that our neighbors on the north are well satisfied with the savings banks that are run in connection with the post-offices.

Of course the post-office banks have no monopoly of the savings banking business in Canada; but it is worth while to note that in 1900 they had more than \$20,000,000 more money on deposit than the "special" savings banks. It is easy to guess that the people prefer to trust the government with their money when they have a chance to choose between it and privately managed savings banks.

Popular Election of Senators.

The Grange has long advocated the election of United States senators by direct popular vote. This reform seems to be coming slowly enough—but it is coming surely, as surely as the people are increasing in intelligence and in the recognition of their right to rule in their own way and by their own direct expression of opinion in their own country. Senators who have been chosen according to present methods and by the arts that have made more than one legislature a hissing and a by-word may be expected to continue to oppose a change that would be certain to retire them from public life; but enough senators will be found before many years to vote right in this contest and give the people a chance to express their opinions. The change is coming.

Recently we published extracts from a speech by Senator Lodge of Massachusetts setting forth his reasons for opposing the proposed change—reasons which we showed had very little weight. Now comes the Review of Reviews, whose editor is no less capable a man than the junior senator from Massachusetts, and gives another view of the question. And be it known that this is no mere party question, although it was a Republican majority of the Senate committee that kept the House resolution from receiving public discussion in the upper branch of Congress. We are especially glad to quote from the Review of Reviews because its Republicanism is unquestioned and because its arguments are sound and sensible, even if they are in opposition to the clique of Republican senators who have denied the people their right to a chance to express themselves on an important constitutional matter:

"The resolution which passed the House of representatives so sweepingly in favor of election of United States senators by direct vote of the people of the States, has been completely tied up in the Senate Committee on Privileges and Elections, and will probably not come to a vote on the Senate floor either

this year or next. In order to prevent consideration on its merits, it was amended by its real opponents in the committee in such a manner as to provide for the holding of senatorial elections under Federal auspices, and the regulation of other conditions as to the qualifications of voters as well as the direct supervision to insure a full and free vote. There is, of course, no more reason why the election of senators should be under Federal supervision than the election of representatives in Congress, or of presidential electors. The question is a very simple one indeed. The cumulative experience of recent years has convinced most of the people of the United States that it would be well to relieve the State Legislature of the business of choosing United States senators. If the people of the country had not been of this opinion, it is scarcely probable that the proposed resolution to amend the Constitution of the United States would have passed the House of Representatives by a practically unanimous vote. The Senate should be willing to give the States a chance to show whether or not they would ratify such a proposed constitutional amendment."

The Grange will not give up the fight. It has learned the power of keeping at the thing it desires to accomplish, and it will not quit trying to secure to the people the privilege of exercising every real and wholesome right. Right will win.—Grange Bulletin and Scientific Farmer.

Notes from the Grange Bulletin.

The Grange and the agricultural college!—what a power for the uplift of agriculture if they will work as one!

While you are resting is a good time to plan for the future—of your work on the farm and in the Grange.

There is no good reason why the farm home should not be the pleasantest home on earth. The business of the Grange is to help make it such.

In Michigan a grange with more than a hundred members, all with their dues paid in advance, is called a twentieth century grange. Every grange ought to be a T. C. grange.

Not every army can win in every battle; but to plan worthily and to be worthy of success is to make sure of victory or of an honorable defeat, which is no disgrace to man or organization.

Organization is the watchword of the day. Watch the methods of the political parties. Campaigns are not won without organization—men and methods united to make victory possible.

Agriculture is big; we have said it before; but the fact is worth repeating and emphasizing. The farms of the United States, together with farm buildings and stock, are worth nearly twice as much as all the railroads of the country.

The best thing any grange can do is to grow—to grow in numbers, in usefulness, in genuine helpfulness to every one of its members. As it grows and increases in strength, it will, by its example, help other granges and other organizations of farmers.

Those members of the Grange who are more or less ambitious for political preferment should remember the good Grange doctrine that "the office should seek the man, not the man the office." The man who seeks office is very likely to get so tangled up with promises that he will be unable to do his best when he has been elected. A man in a position of honor and responsibility should be free to do his best, not bound to please his partisans.

Already plans and purposes should be forming to make the fall meetings of the State Granges of unusual interest and usefulness. These plans and purposes should have their roots in the Subordinate and Pomona granges. The best service to the great multitude of the members should be the ideal.

Michigan Patrons are preparing to entertain the National Grange next November in a style worthy of their good name and that of the great re-insular State. They must be given a chance to entertain thousands, and not all of them from Michigan either.

When you have done your best and are beaten—then what? Keep your courage so well that the contest will seem to have been merely a practice game. To do this is a victory in itself and the best preparation for the ultimate triumph which is sure to come to those who will only work and wait.

No loyal member of the Grange will be sorry to see members of the organization elected to high political office. But every one of us will be sorry if members of the Grange forget their loyalty to the order and to the people for whom it exists when they have achieved political position and distinction.

We want loyalty and honorable service.

Up in Colorado they are planning to repeat the very successful excursion of last year to the State Agricultural College at Fort Collins. State Master Newcomb has been at work on the matter for some time, with the hearty cooperation of the college authorities. These excursions and picnics that bring the members of the Grange together in large numbers can not but cultivate the spirit of fraternity. Let us have more of them.

It is an old notion of ours that voters should make up their minds as to principles and matters of general policy long before the party nominations are made. If that has been done, there need be little confusion when the time comes to weigh the merits of rival candidates. We need to be free and clear-headed when the papers are full of special pleadings for parties and for candidates, and when the stump-speakers are doing their utmost to persuade the people to vote the party ticket regardless of the issues at stake or the merits of the candidates.

President Butler, of Columbia University has spoken a good word for education. Here it is: "A wise college president wrote a few years ago that 'this intertraining and equal training takes the simper out of the young woman and the roughness out of the young man.' He was right. The woman who grows up surrounded by women and taught only by women, and the man who grows up surrounded by men and taught only by men, are a long time in maturing. Both are abnormal. The family is the natural type, not the monastery or the nunnery." The Grange is modeled after the family type. It educates and trains both men and women, and it trusts them with equal opportunities.

A Plan for the Trusts.

President J. J. Hill of the Northern Pacific Railroad, and other representatives of large corporate interests, are reported to have recently suggested as a solution to the trust problem, that properties consolidated in the trusts should only be rated or capitalized at their actual value instead of the fictitious valuations at which they are invariably capitalized. Many papers are now most justly commending Mr. Hill's wisdom in making the foregoing suggestion and are earnestly urging its adoption, all of which we most heartily endorse.

But the suggestion is not a new one, and did not originate with Mr. Hill nor any other corporation magnate. Careful students of economic questions have for a long time held this view of the matter, and Grange speakers have proclaimed it from the platform in all parts of the country for many years. They have repeatedly said that the people would not object to being taxed to pay dividends that were within the bounds of reason, on any properties whose products are public necessities. What they did and now do object to is the consolidation and capitalization of the individual plants of a given industry at two or three times their actual cost and real value.

What we have asked is a law of Congress prohibiting the watering of the stock of trusts and combines, which to a greater or less extent control the necessities of life and tax the people beyond the bounds of reason to make multimillionaires of a few individuals, thus concentrating the enormous wealth of the country in the hands of a few individuals and making it a menace to the freedom and future prosperity of the people.

It is gratifying to know that the Grange view of the matter has been accepted by so eminent a financier as Mr. Hill and that he and others have the courage freely to express their convictions. It is also gratifying to know that a class of journals that have no decided opinions of their own on public questions are ready to fall into line and support the suggestion of actual valuation of capitalization of corporation stock when it has the endorsement of such men as Mr. Hill. But the best part of all is to know that we have men in this country in high positions of trust and honor who have the interests of the great body of the people at heart, and who are patriotic and broadminded enough to ignore, in a measure at least, the inordinate desire of some men to pile colossal fortunes at the expense of

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Conducted by D. H. Otis, Professor of Dairy Husbandry, Kansas Experiment Station, Manhattan, Kansas, to whom all correspondence with this department should be addressed.

The Dairyman as a Business Man.

A man who successfully engages in the drygoods, the grocery, or in manufacturing business always stops to consider the cost. So much must be paid for rent, so much for stock and so much for machinery. His success will depend very largely upon his location, the quality and quantity of goods he handles and the efficiency of his machinery. He will also need executive ability to secure his goods or the raw material in the lowest market, consistent with quality, and purchase at such points and in such quantities as to reduce transportation charges to the lowest notch.

In a similar manner, successful dairying is a business proposition. So much money is invested in the cow. This investment should bear a fair rate of interest. The cow is an animated machine used to convert food into milk. We all know that machines vary greatly in their efficiency, and the cow is no exception to the rule. The quality and especially the quantity of the goods this cow handles will have much to do with the amount of profit she yields. The raw material (feed) for this cow's use must be procured in the cheapest market at the least cost for transportation. This is almost invariably upon the farm. Other conditions being equal, the cow machine, as well as other machines, will turn out more profit when taxed to its fullest capacity. It is said that a cow requires about 60 per cent of all that she will eat to maintain her existence, and the profit in the milk and butter-fat comes from the feed eaten over and above this amount. If this is true, the man that feeds 80 per cent of what his cow will eat will realize 20 per cent profit while if he feeds 100 per cent he will realize 40 per cent profit.

Again, if a man is to succeed in any vocation he must be in love with his work. This is an age of specialties, and the man who makes a success of any line of work must study that particular line of work until he becomes an expert. After settling upon some definite line of work we must study that business in all its details, find out what others are doing in the same line of business, make the business a hobby, and above all stick to it.

Milk as a Germ Medium.

Milk is an excellent medium for the growth of almost any germ. Water containing such a small number of germs that there would be no danger from its use, if used to adulterate milk, would furnish enough germs to produce a deadly poison. So watered milk should be condemned, not only for the adulteration, but also for the possible introduction of disease germs. A striking illustration of the work of typhoid fever germs occurred at Stamford, Conn., in 1895. In six weeks there were 386 cases of typhoid fever, and over 97 per cent of these came from a single milk supply. Upon investigation it was found that the disease germs in his milk cans the milk man rinsed well from a shallow, infected well.

Milking the Cow.

To some people the act of milking seems of little importance. On most farms as soon as a boy is able to reach the cow's teats he is put to work, and as long as the farmer only uses the hands to produce enough milk for the men the disagreeable job of milking about 10 or 11 o'clock at night, having worked from twelve to fourteen hours in the fields. A large per cent of people think it

does not make any difference what time of day they do the milking. One day they will milk about 5 o'clock in the morning and 9 or 10 at night, and the next day milk at 8 in the morning and at 6 in the evening. Sometimes Bill will milk for a few days and then Jack or Pete, whichever suits best.

Either one or all of these methods will do very well where you do not care for the profits, but when a man expects to make any money out of the dairy business, they will not do at all. The cow is a slave to habit, if you will allow the expression. She has a great liking to be milked at the same time every day, and by the same person every time, and as it has been proven beyond a doubt, that when a cow is contented she will give the best results at the pail, then you should endeavor to please her as much as possible. A change of milkers or of the time of milking will often cause a decrease in the quantity and the per cent of butter-fat in the milk.

It is not best to let a child milk a cow because children's hands and fingers will get tired and they can not milk as fast as the cow should be milked.

In milking it is best to determine what two teats will give nearest the same quantity of milk and milk them at the same time. The proper way to milk is to take hold of the teats near to the udder, then close the thumb, next the forefinger, and so on until all the fingers are closed or the end of the teat is reached. The motion should be rapid but not hard on the teats.

One of the most important things connected with milking is cleanliness; everything that the milk comes in contact with should be perfectly clean. First, be sure that the stable is clean and well ventilated, and have as little dust stirring as possible. Before you begin to milk all the dirt should be brushed off the sides, belly and hind-quarters of the cow. After brushing the flank and udder, all other parts that are close to the pail should be brushed with a damp cloth so that what dust there is that can't be brushed off will stick to the hair and not fall off into the buckets.

When the person is trying to produce sanitary milk the milker should wear white clothes and have them clean, and even in the ordinary dairy farm his clothes should be clean.

To sum up the whole matter in a few words would say, have a regular milker and regular times for milking, be gentle with the cows, and be clean.

Cows That Eat Their Heads Off.

W. A. WEBB.

If you should ask an average farmer what his profits are, the chances are that while he might be able to give the profit on his whole herd, he would not know what return he was getting from each individual cow. To know what each cow is doing requires the keeping of a record both of the feed consumed and the milk produced. Most dairymen think that this is too much unnecessary trouble. But right here is where they make a great mistake, for the cow or cows in the herd that are eating their heads off are allowed to remain undetected. They go on, lessening the profits, increasing the work and making the dairyman dissatisfied with dairying as a business.

There is no question but that thousands of unprofitable cows are milked every day. Reports from eighty Kansas herds show that the average cow produces 104 pounds of butter-fat per year. At 15.5 cents per pound, which is about the average creamery price, these 104 pounds of butter-fat are worth \$16.12. The calf at six months should be worth \$20, and the skim-milk \$4.05 (2700 pounds at 15 cents). This makes a total income of \$40.17. Expenses

will include feed, labor of caring for both cow and calf, interest on money invested, and risk of loss.

At the Kansas Agricultural College the feed bill for each cow amounted to \$29.86. This is more than the average Kansas cow's feed costs, as prices of feeds were figured local selling price in Manhattan. Twenty dollars might be a moderate estimate for the average cow. The other items, excluding labor, would amount to about \$14, making a total expense, excluding labor, of \$43.86. This leaves a margin of \$4.14 to pay for the labor of milking the cow and feeding the calf. At 10 cents per hour, this would cost \$12.50. It is evident from these figures that the average cow does not pay her way.

A common type of the unprofitable cow is the beefy type. A cow of this class has heavy neck and shoulders and thick hams. Her face is usually coarse and heavy. While she might produce beef profitably, it is foolish to expect her to be a good dairy cow. Such cows sometimes yield a large amount of milk when fresh, but they do not hold out well. They should be fattened and sold for beef.

Lack of beef qualities does not always indicate possession of dairy qualities. Thinness may result from poor digestion, while a good dairy cow must have a powerful digestive apparatus.

But while a good many cows are unprofitable because of lack of dairy qualities, I believe a larger number are unprofitable because of unscientific feed-

ing and lack of care and shelter. Calves which are intended for milk cows often receive the same feed as those intended for beef receive, with the result that their beef qualities are developed at the expense of their dairy qualities. After they begin to give milk, the ignorant feeding is continued. The cow is given a ration of corn with fodder, sorghum, or millet for roughness, and is expected to convert them into milk—rich milk, too because she is getting rich food. As feed does not affect the quality of the milk, the cow does not give any richer milk than when on pasture alone, and as protein is one of the chief constituents of milk, she can not produce much milk from feed which is so deficient in protein. Her owner condemns her as an unprofitable cow when he has not given her anything like a fair trial.

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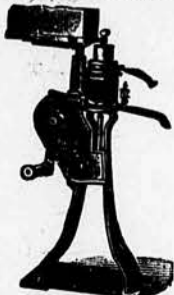
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**HUTCHINSON,
 SEPTEMBER 15-19.**

Read the Following Resolution which was Passed at the Meeting of the Improved Stock Breeders' Association Held in January, at Topeka, Kansas:

Resolved, That inasmuch as the Central Kansas Fair Association propose to hold an agricultural and live stock fair in Hutchinson this fall, on a scale equaling the usual State Fair, that we hereby tender to that association any help or assistance, or endeavor we can to aid and further it as a battle ground for the show material for the State of Kansas this year, preparatory to the Louisiana Purchase Exposition at St. Louis in 1903.

\$2,500 IN PREMIUMS IN THE CATTLE DEPARTMENT

- \$2,000 of this free of Entrance Money.
- \$1,200 in Premiums in Show Horse Department.
- \$1,000 in Premiums in Swine Department.

Liberal Premiums in Poultry, Sheep, Agricultural, Horticultural, and other Departments.

\$3,500 in Speed Ring. Good Racing Every Day. Automobile and Novelty Races. Amusements of All Kinds, both Day and Night.

ONE-HALF FARE RATE ON ALL RAILROADS.

Stock shipped to the State Fair at Hutchinson for exhibition will be returned free by the Railroads. T. U. BROWN, ED. M. MOORE, PRESIDENT. SECRETARY.

SCOTT & MARCH
 BREEDERS OF PURE BRED
HEREFORDS.
 BELTON, CASS COUNTY, MO.
 BULLS in service, HESIOD 29th 64904, Imp. RODERICK 80155, MONITOR 55375, EXPAN-
 SION 93442, FRISCOE 93474, FULTON ALAMO 11th 53781.
 25 miles south of Kansas City on Frisco; Ft. Scott & Memphis; and K. C., P. & G. Railroads

GRAND PUBLIC AUCTION.
85 PURE-BRED HEREFORD CATTLE 85
 At Blue Rapids, Marshall County, Kansas,

Beginning at 1 o'clock p. m. sharp, on Wednesday, September 1, 1902, I will sell at public auction 85 head of pure-bred unregistered Hereford cattle, mostly females and calves of gilt-edge breeding, running back to the best stock in the breed, such as The Grove 3d, Anxisty 4th, De Cote, Archibald and Lord Wilton. Also I will sell two registered herd-bulls, Constantine (102183), 3 years old, and General Funston (108189), 2 years old, both rich in the blood of the above famous sires. These cattle will be sold with the positive guarantee as to the purity of their breeding. Blue Rapids is on the C. B. M. P. Ry. and the Lincoln & Manhattan branch of the U. P. Ry. Sale right in the city.

Auctioneers: } Jas. T. McCulloch, CHAS. S. STRANGE, Owner.
 Frank E. Kinney. John M. Whiting, Mgr., Frankfort, Ks.
 (P. S. Enquire of manager for options on 100 head of pure-bred Angus bulls, cows and heifers, also 80 head of other pure-bred Hereford cattle.

**WICHITA AND SOUTHWESTERN
 EXPOSITION AND LIVE STOCK SALES.**

This great event will take place in Wichita, Kansas, September 22 to 27 inclusive, and will be hailed with satisfaction by all stockmen. Our great Live Stock Show and Sales last February surpassed everything of the kind held up to that time, making the second best record in the United States in twelve years. Breeders of live stock realized more than invoice prices and disposed of all stock brought here for sale.

As headquarters for stockmen, Wichita leads. Terms and accommodations unsurpassed. Liberal premiums on all exhibits. \$5,000 purses offered for speed ring. Leading stockmen from all over Kansas, Oklahoma, Indian Territory, and Texas will be present.

If you have fine stock to show or sell, bring it to Wichita.
 H. L. RESING, Secretary.



**FORTY REGISTERED
 GALLOWAY FEMALES FOR SALE**

Clover Hill Herd at Richland, Kansas, numbers 100 head. Will sell 40 head, the pick of the herd including ten yearlings and thirty 2-year-olds and over. Most of the cows are bred to the herd bull, Decoy of Wavertree 17084. Several of the yearlings are sired by Anno The Great, a son of King Hensol. Owing to death of my son, the herd manager, I am compelled to reduce herd, and lease farm. I prefer to sell them to a single purchaser but will sell in lots to suit buyers. This lot of females is the best that will be offered at private sale this year. Come and see and you will buy. Address
 GEO. M. KELLAM, 909 West Tenth St., Topeka, Kans.

Sale of Sedgwick County Shorthorns

AT THE RIVERSIDE BARN IN WICHITA, KANS., SATURDAY AFTERNOON, NOV. 1, 1902,

Wm. H. RANSON will sell to the highest bidder, 24 head of high-class Sedgwick County bred and raised SHORTHORNS. The offering will consist of 9 young bulls and 15 head of bred cows and heifers. For further particulars, address

Wm. H. RANSON, North Wichita, Kansas.

GLENDALE SH RTHORNS.
 Imp. Prince Levely 165980 and Scotland's Charm 127284
 IN SERVICE
 ● ●
 Young Bulls, Cows, and Heifer for sale at all times.
 O. WOLF & ON, Ottawa, Kans.

STEELE BROS., Belvoir, Douglas Co., Kans.,
 * * Breeders of SELECT * *
HEREFORD CATTLE
 Young Stock For Sale. Inspection or Correspondence Invited.

**J. F. FINLEY'S DISPERSION SALE OF
 SHORTHORN CATTLE**

.....TO BE HELD AT FARM ADJOINING TOWN, ON.....

WEDNESDAY, SEPT. 17, 1902.

70 head of Registered Shorthorns and 30 Calves at foot of dam

This sale will include 70 head of registered Shorthorns, aside from 30 calves to be sold at foot of dam. It likewise includes my 3-year-old imported Scotch herd bull, Primate of Dalmeny (imported by W. D. Flatt), that cost me \$1,075 in Chicago. Quite a number of cows have his calves at foot, and the majority of them will have been bred to his service at date of sale. Ten young bulls are in this sale, ranging in age from 10 months to one year. Chief Violet 4th (of Cruickshank's famous Violet tribe—bred by A. Cruickshank for over 50 years) was long used in this herd, and many of his get go in this sale.

---Among the Bates Oattle to e Offered are Seven Pure Duchesses---

An elegant lot of beautiful young cows and heifers; also two Kirklevingtons and one Oxford. Kirklevington Duke of Hazelhurst 11th by the great Peculated Wild Eyes was formerly a favorite bull in the service at Crystal Springs Farm. His dam was Kirklevington Princess 27th by Winsome Duke 3d. Ten cows got by this great sire are in this dispersion sale. These cattle were practically wintered without grain, a few cows suckling calves only having a small grain ration. They were fed corn fodder prepared by the husker and cutter. The entire herd is in model breeding condition. These cattle carry the exact lines of blood from which the Bothwell prize winners were made. I have been thirty years a breeder of Shorthorn cattle at Crystal Springs Farm. The farm is now sold, and I invite all lovers of good Shorthorns to come to the sale at Breckenridge, Mo., on September 17th, whether you care to buy or not. Railroad connections easy from all points. See my catalogue early. Caldwell House Headquarters.

AOL. J. W. JUDY }
 AOL. M. W. HARDING } Auctioneers. **J. F. FINLEY, Owner, Breckenridge, Mo.**