

KANSAS FARMER

Volume XLI. Number 1.

TOPEKA, KANSAS, THURSDAY, JANUARY 1, 1903.

Established 1863. \$1 a Year

KANSAS FARMER.

Established in 1863.

Published every Thursday by the
KANSAS FARMER CO., - - TOPEKA, KANSAS

E. B. COWGILL.....President
J. B. MCATZEL.....Vice President
D. C. NELLIS.....Secretary and Treasurer

SUBSCRIPTION PRICE: \$1.00 A YEAR

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I. D. GRAHAM.....Advertising Editor
H. A. HEATH.....Advertising Manager

Entered at the Topeka, Kansas, postoffice as second-class matter.



ADVERTISING RATES.

Display advertising, 15 cents per line, agate (fourteen lines to the inch). Continuous orders, run of the paper, \$1.54 per inch per week.

Special reading notices, 25 cents per line. Business cards or miscellaneous advertisements will be received from reliable advertisers at the rate of \$5.00 per agate line for one year.

Annual cards in the Breeders' Directory, consisting of four lines or less, for \$16.00 per year, including a copy of the Kansas Farmer free. Special rates for displayed live stock advertising. Special Want Column advertisements, 10 cents per line of seven words per week. Cash with the order. Objectionable advertisements or orders from unreliable advertisers, when such is known to be the case, will not be accepted at any price.

To insure prompt publication of an advertisement, send cash with the order; however, monthly or quarterly payments may be arranged by parties who are well known to the publishers, or when acceptable references are given.

All advertising intended for the current week should reach this office not later than Monday. Every advertiser will receive a copy of the paper free, during the publication of the advertisement. Address all communications to

KANSAS FARMER CO.,

116 West Sixth Ave., Topeka, Kans.

BLOCKS OF TWO.

The regular subscription price for 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, Kansas Farmer Company, Topeka, Kansas.

We wish every one of our readers would send us the names of all of his neighbors who do not subscribe for the KANSAS FARMER and we will gladly send them sample copies and invite them to participate in the feast of good things we have in store for 1903.

A good New Year's resolution for every reader of the KANSAS FARMER: See that every one of your neighbors who is not a subscriber is given an opportunity, especially while the introductory half-price rate obtains. Do a good act for your neighbor by inducing him to subscribe for the "old reliable" KANSAS FARMER.

J. G. Haney, superintendent of the Ft. Hays branch experiment station of Kansas State Agricultural College, promises to be at the annual meeting of the Kansas Improved Stock-Breeders' Association on January 12 and 13, and present a paper on "Our 4,000 Acre Experimental Farm and Its Possibilities." This is only one of the many attractive subjects to be considered at that meeting.

The Topeka Commercial Club have a surprise in store for the Kansas Im-

proved Stock-Breeders' Association and their friends of the Kansas State Board of Agriculture, and of the Kansas Legislature for Wednesday evening, January 14, 1903. Further announcements will appear in the daily press and in the souvenir program for the thirteenth annual meeting gotten up by Secretary H. A. Heath.

The Kansas State Teachers' Association is in session at the capitol this week. The attendance is large and the interest well maintained. Of the many State meetings which occur at Topeka none is so warmly welcomed by the electric railroad management as the teachers' association. Its members want to go everywhere, they go in shoals, and they never walk. Their coming is a veritable harvest for the car company.

Mr. Percy J. Parrott graduated a few years ago from the Kansas State University. He had given especial study to entomology. The State Agricultural College realized the need of specialty and placed him in the position of assistant in the entomological department. About two years ago he accepted a call to a similar position with the New York State Experiment Station at Geneva. Ohio was on the lookout for a man of suitable preparation, enthusiasm, and energy. Mr. Parrott fills these requirements and was last summer elected head of the entomological department of the Ohio Experiment Station, at Wooster. He will fill the position ably and, while making Kansas proud of another of her many sons abroad, will doubtless give occasion for regrets that his valuable services along practical lines are rendered to another State.

ECONOMICAL RATIONS FOR FINISHING HOGS.

A correspondent recently sent to the KANSAS FARMER inquiries as to the most economical rations for hogs in the growing and in the finishing stages. The subject of the computation of rations in general was considered two weeks ago, and the computation of rations for growing hogs was dwelt upon last week.

Those who have followed the discussion will remember that for the computation of rations the following formulas were deduced:

The first ingredient=
 $(C \times p_1 - c_1 \times P) \div (c_1 \times p_1 - c_2 \times p_2)$

The second ingredient=
 $P \times c_1 - p_1 \times C \div (c_1 \times p_1 - c_2 \times p_2)$

In these formulas, in which everything is expressed in pounds and decimals of pounds,

C=carb. in required ration.
P=protein in required ration.
 c_1 =carb. in first ingredient.
 c_2 =carb. in second ingredient.
 p_1 =protein in first ingredient.
 p_2 =protein in second ingredient.

These formulas are mathematically correct and may be used by the farmer who is familiar with arithmetic, only, as well as by those familiar with algebra.

The formulas are useful only in making computations upon data, furnished by the chemist, of the digestible nutrients contained in feeding stuffs, and data, furnished by the experimental feeder aided by the chemist, of the food requirements of animals.

For the purpose of having such data convenient brief tables will be given

containing the desired information of the animals and feeds under discussion.

TABLE III.

Transformed Feeding Standards for Swine per 1000 Pounds Live Weight.

Age in months.	Aver. Total		Protein, c-12% f. live wt.	Carb. c-12% f. live wt.	Nutritive ratio, 1 to—
	age wt. dry per mat. head, ter. lbs.	ter. lbs.			
2-3	50	44	7.6	30.3	4.0
3-5	100	85	5.0	25.1	5.0
5-6	120	33	3.7	23.3	6.0
6-8	200	28	2.8	19.4	7.0

Fattening Swine.

First period.....	36	4.5	26.6	5.8
Second period.....	32	4.0	25.1	6.5
Third period.....	25	2.7	19.0	7.0

TABLE IV.

Transformed Statement of Average Digestible Nutrients in One Pound of Feed.

	Total dry matter, lb.	Protein, c-12% f. live wt. lb.	Carb. c-12% f. live wt. lb.	Nutritive ratio, 1 to—	Price, cent.
Corn.....	0.894	0.078	0.764	9.79	0.00625
Bran.....	0.877	0.123	0.429	3.43	0.007
Middlings.....	0.879	0.128	0.606	4.73	0.008
Oats.....	0.890	0.092	0.587	6.16	0.00875
Alfalfa hay.....	0.516	0.110	0.423	2.85	0.003
Skim-milk.....	0.664	0.122	0.703	2.91	0.003
Cottonseed-meal.....	0.818	0.372	0.444	1.20	0.0125

The method of applying the formulas to the information desired from the tables was illustrated last week. The illustration need not be repeated here. We shall however repeat the statement of rations found last week for growing hogs and follow this with rations computed in the same way for finishing hogs. The cost of the rations is based on the following prices per pound for feeds:

Corn.....	\$0.00625
Bran.....	0.007
Middlings.....	0.008
Oats.....	0.00875
Alfalfa hay.....	0.003
Skim-milk.....	0.003
Cottonseed-meal.....	0.0125

DAILY RATIONS FOR 120-POUND GROWING HOGS, PER 1000 POUNDS LIVE WEIGHT.

	Pounds.	Price, cents.
Corn.....	17.4	10.9
Alfalfa hay.....	21.3	6.4
Totals.....	38.7	17.3

Corn.....	19.2	12.0
Bran.....	18.0	12.6
Totals.....	37.2	24.6

Corn.....	12.2	7.6
Middlings.....	21.6	17.3
Totals.....	33.8	24.9

Corp.....	25.1	15.7
Skim-milk.....	60.0	12.0
Totals.....	85.1	27.7

Corn.....	26.65	16.7
Cottonseed-meal.....	4.35	5.4
Totals.....	31.00	22.1

DAILY RATIONS FOR FINISHING HOGS, PER 1000 POUNDS LIVE WEIGHT.

	Pounds.	Price, cents.
Corn.....	18.67	11.7
Alfalfa hay.....	11.35	3.4
Totals.....	30.02	15.1

Corn.....	19.5	12.2
Bran.....	9.5	6.6
Totals.....	29.0	18.8

Corn.....	15.75	9.8
Middlings.....	11.5	9.2
Totals.....	27.25	19.0

Corn.....	8.33	5.2
Oats.....	22.25	20.6
Totals.....	30.58	25.8

Corn.....	22.68	14.2
Skim-milk.....	32.03	6.4
Totals.....	54.71	20.6

Corn.....	23.46	14.7
Cottonseed-meal.....	2.35	2.9
Totals.....	25.81	18.6

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It is interesting to note that in every case the ration containing alfalfa hay is the cheapest. From this it may be inferred that the alfalfa is undervalued by the correspondent who gave the prices. The fact is that alfalfa is priced at less than its true feeding value in comparison with other feeds in every market in which it is sold. The Topeka market price for alfalfa is \$9 per ton or \$0.004½ per pound while corn sells at 35 cents per bushel, the price used in these computations. Alfalfa is worth more in comparison with corn than the Topeka price.

The most expensive ration for the hogs is that containing oats. Where skim-milk can be had at 15 cents per hundred it is undoubtedly profitable to feed it to any kind of hogs. At 20 cents it is a little costly.

The editor does not wish to be understood as recommending cottonseed-meal in the hog's ration. It should be used with caution, if used at all. A ration for fattening hogs composed of a mixture of equal parts of the corn-and-alfalfa ration and the corn-and-cottonseed-meal ration should give good results, and would doubtless be safe for a short time at least. Such a ration would consist of

	Pounds.	Price, cents.
Corn.....	21.02	13.1
Alfalfa hay.....	5.68	1.7
Cottonseed-meal.....	1.17	2.0
Total.....	27.87	16.8

This ration would cost a little more than the corn-and-alfalfa ration, but it would have the advantage of being less bulky. It would have the further quality of rasping less harshly on the

(Continued on page 12.)

ADVERTISING IN THE KANSAS FARMER.

We have many reports from our advertisers telling of the success they have attained in selling pure-bred livestock through the medium of the advertising columns of the KANSAS FARMER. One prominent and successful breeder remarked the other day that the KANSAS FARMER was worth more to him than all the other papers he ever used combined. This is a very general verdict as given by those who realize that an inquiry is half a sale, and that when a paper brings inquiries its mission is complete. It is also to be noted that the breeders who use liberal space are the ones who make the most sales and get the best prices. The breeder is a business man who of necessity must hang up his sign as do other business men and who must patronize the breeders' papers in order to attain that success which is so much desired.

Confirmatory of the above remarks we would cite the case of H. W. Cheney, owner of Shady Brook Herd of Poland-Chinas, North Topeka, Kans. Mr. Cheney has never fitted a herd for the show-ring and is not a man who is favorable to blowing his own trumpet. He has carried a one-inch breeders' card in the KANSAS FARMER and has constantly kept his sign up so that people know who he is, where he lives, and what he has to sell. As a result his books show that in less than sixty days he has made the following sales:

J. L. Dion, Keats, one boar; J. W. Gilpin, Admire, two bred sows, one gilt; F. J. Schuelle, Sharon, one boar; N. W. Prang, Westmoreland, one boar; C. M. Cellar, Waverly, one boar; C. W. Strickland, Junction City, two gilts; S. B. Reed, Attica, one boar; J. W. Hall, Troy, one boar; A. A. Schoeni, Athol, one boar; F. M. Haynie, Bois d'arc, Mo., one boar; A. S. McGill, Corning, one boar; A. J. Avery, Milford, one boar; F. H. Stanford, Reading, one boar; J. S. White, Topeka, one boar; W. A. Miller, Council Grove, one boar; Pat Crowley, Troy, one boar; T. Winzeler, Hilltop, one boar; Albert F. Droll, Winger, one boar; T. G. Hill, R. F. D. No. 6, Topeka, one boar; S. O. Foshay, Overbrook, two gilts; J. B. Roberts, Persimmon, Okla., one boar; Shady Brook Perfect, and one gilt by Perfect Model; O. S. Moyer, Ludell, one boar; John P. Burns, Parsons, one boar; Theo. Swenson, Cleburne, one boar; Louis Lockenour, Manhattan, one boar; Christoph Maier, Garnett, one bred gilt and one boar; F. H. Haid, Belvue, one boar; E. F. Savage, Hammon, Okla., one boar; Jos. Kackley, Kackley, one boar; F. G. Thomas, Republic City, one boar; Fred Peter-

son, St. Marys, one boar and one bred gilt; G. W. Priest, Meriden, three bred gilts.

Here is a sale of forty-three pigs to thirty-four people in widely separated districts in less than sixty days, which we consider a very good business.

Mr. Cheney's herd boar, Perfect Perfection 10th, is a son of Perfect Perfection, a one-half interest in whom sold at Chicago a few days ago for \$2,000.

STOCK-BREEDERS' ANNUAL MEETING.

The Kansas Improved Stock-Breeders' Association will hold its thirteenth annual meeting at Topeka, January 12, 13, and 14. There is every assurance of this being the greatest meeting in the history of the association, by reason of the increased membership during the past year and the fact that the executive committee has prepared a program of unusual excellence.

The present year has been the association's high-water mark for membership. It now has 521 members representing seventy-seven counties in Kansas. It has the largest and wealthiest membership of any of the industrial State societies. The Kansas Improved Stock-Breeders' Association also enjoys the distinction of being the largest association of its kind in the United States.

The breeds of pure-bred cattle represented by the membership rank in numerical strength as follows: Short-horns, Herefords, Aberdeen-Angus, Galloways, Red Polls, Jerseys, Polled Durhams, and Holstein-Friesians.

Breeders of pure-bred swine come next in the following order: Poland-Chinas, Duroc-Jerseys, Berkshires, and Chester Whites. Other pure-bred classes of stock are well represented, comprising Percheron, Clydesdale, Coach, Saddle-bred and Standard-bred horses, jacks, and all breeds of sheep, Angora goats, etc. Then there is a miscellaneous list representing the general farmer and feeder and other allied interests.

H. A. Heath, secretary, Topeka, gives out advance announcements regarding the program of the thirteenth annual meeting. Special attractions, among which may be mentioned, a trio of Chicago experts who have consented to attend and contribute to this program; F. B. White, national expert on agricultural advertising; will contribute a paper on "Class Advertising;" Ashleigh C. Halliwell, the editor of the Chicago Live Stock World, and the oldest live-stock market editor in America, will contribute a paper on the "Stockman's Finish;" Mr. Roy B. Simpson, who has devoted great attention to compiling facts regarding feed products, will give a specially prepared paper on the "By-products of Corn."

The other outside eminent authorities engaged for this meeting consist of Hon. L. H. Kerrick, Bloomington, Ill., who has regularly produced the highest-priced beef in the Chicago market, and who will give an address upon "Economic Production of High-class Beef," and Hon. W. W. Marple, St. Joseph, Mo., president of the Missouri State Dairy Association, will present a paper on "The Cream of the Business."

The Kansas talent will present the following: "English Blue-grass Culture, and Its Special Value," Geo. Plumb, Emporia; "Railroad Transportation of Fine Stock, Its Evils," C. W. Taylor, Pearl, Dickinson County; "Fitting Cattle for the Show-Ring," James Tomson, Dover; "Honors Won During the 1902 Show Season by Kansas Breeders," I. D. Graham, associate editor of the KANSAS FARMER, Topeka; "Live Stock Pedigrees—Value and Abuses," Geo. W. Maffet, Lawrence; "Abortion in Cattle—the Problem Solved," O. O. Wolf, V. S., and H. O. Tudor, Holton.

The Kansas State Agricultural College management has promised short addresses and aid in the discussion of other papers and addresses, by President Nichols and Professor Otis, Willard, Webster, and Mayo.

"The Sheep Industry for Kansas," is a special subject set down for a general discussion by the entire company. The Kansas Improved Stock-Breeders' Association standing committee reports on "Needed Legislation," "State Fair," "The New Live Stock Classification," the "World's Fair in 1904" are topics that will be up for the free-for-all discussion.

In view of other attractions at Topeka during the same week, notably the State Board of Agriculture meeting, opening of the Kansas Legisla-

ture, and the fact of the meeting of the National Live Stock Association at Kansas City the latter part of the week, and consequent low railroad rates, indications point to a tremendous attendance of farmers and stockmen.

Farm Notes.

It is a mistake to keep breeding animals over-fat.

Growing colts need plenty of pure air, exercise and sunshine.

True economy on the farm is a wise use of resources.

Feeding grain to sheep will increase the weight of fleece.

Growing pigs should be fed so as never to be stunted in the least.

Too long pulls on a muddy road often hurts the wind of a horse.

No work is so discouraging as that which does not pay.

With dairy-stock more than others, merit must be settled by actual test.

Other things being equal, the best offspring comes from matured animals.

Be sure that the seed-corn is stored where it will keep perfectly dry.

By prepotency is meant the power of the animal to stamp his progeny with characteristics.

It is the amount digested and assimilated and not the amount eaten that benefits the horse.

Digestion is best accomplished when all other parts of the body are at rest.

Comfortable quarters will do for swine what feed can not do.

There is very little profit in feeding an old cow grain to make good beef.

Under all conditions young animals make the largest gain in proportion to food eaten.

Manure if properly managed will always pay for the work of feeding and caring for the stock.

Check the growth of an animal and you increase the amount of food necessary to secure given results.

The cost of production and the expense of marketing are the two great factors in determining the cost of a crop.

There is no need of run-down farms if the farmers would grow clover plentifully and follow a good system of rotation. The best square on his feet should be chosen as a breeder in preference to a grumpy, weak-kneed animal.

The nature of any kind of farm stock is largely determined by the feeding and care given the first year of its life.

With all stock the profitable line of productiveness is to maintain good health with early maturity.

The time to sell a horse after he has been raised for market is whenever a good price is offered.

During the winter on many farms the feeding and caring for the stock is the principal work done and it should be done well.

Start the new year by keeping accounts with the various crops and kinds of stock so as to know where the profits of the farm come from.

One of the ways manure can be used to a good advantage is to haul out and scatter evenly over the meadows. The work can be done during the winter.

A young animal should be made to secure bone and frame. It can be fattened after it has matured.

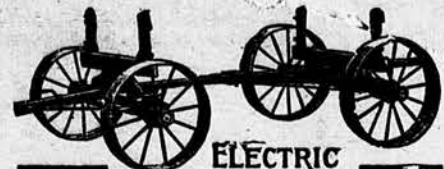
One Way to Cure Worry.

ROSA WARD ATWOOD, IN THE PRACTICAL FRUIT-GROWER.

It is a common enough saying that it is worry rather than hard work that wears and makes tired, but the truth of it comes home with peculiar force after the tenseness of an unusual strain has loosened and we see how very foolish our worry was. I overheard a lady say to her daughter: "See what an amount of work I have done this morning! I could not possibly have done it any day last week I felt so good-for-nothing." "I think," replied the daughter, "you were worrying about that club meeting." And so it was. The lady was, unconsciously, indisposed physically, on account of an anxiety of mind (an anxiety there was no occasion for), which relieved by a satisfactory meeting of her club, strength returned and she could resume her normal duties with ease and enjoyment.

The proposition might be stated another way, thus: The sense of duty done is the greatest known promoter of content and satisfaction.

I have often noticed that when copy for Home Department is due and I try to evade it, not knowing where it is to come from, effort in any other direction, worthy as it may be, ordinarily, is irritating and physically fatiguing,



ELECTRIC Handy Farm Wagons

make the work easier for both the man and team. The tires being wide they do not cut into the ground; the labor of loading is reduced many times, because of the short lift. They are equipped with our famous Electric Steel Wheels, either straight or stagger spokes. Wheels any height from 24 to 40 inches. White hickory axles, steel hounds. Guaranteed to carry 4000 lbs. Why not get started right by putting in one of these wagons. We make our steel wheels to fit any wagon. Write for the catalog. It is free. ELECTRIC WHEEL CO., BOX 46, QUINCY, ILL.

but once the will of the brain sets in motion and grinds out its product, good, bad, or indifferent, the irritation is allayed, things run smoothly, and life seems once more worth living.

So with any allotted work, whether it be cleaning the lamps, paying a bill, reading a story to the children, or what not. Moral: Make haste to do the duty that nearest lies and other duties will adjust themselves in their proper order and there will never be need of friction or worry.

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 census of 1900. The size of the New Wall Atlas is 22 by 28 inches and it is decorated on the outer cover with a handsome design composed of the flags of all nations.

Tables showing products of the United States and the world, with their values, the growth of our country for the last three decades, and a complete map of the greater United States are given. This is an excellent educational work and should be in every home. The retail price of this New Wall Atlas is \$1.

Every one of our old subscribers subscriptions for one year will receive as a present a copy of this splendid New Wall Atlas postpaid, free.

Any one not now a subscriber who will send us 50 cents at once will receive the KANSAS FARMER for five months and will be given a copy of our new Wall Atlas free and postpaid.

The Plain People.

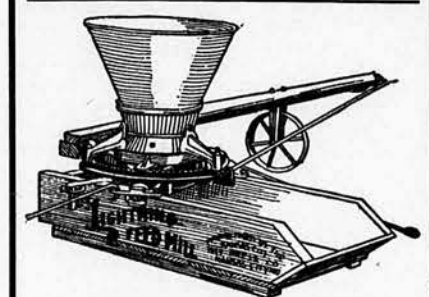
If we could take stock of our civilization to-day we should find that the men and women who have done most to sweeten and refine our National life have not been, as a rule, the millionaires, or those who have attained notoriety, but the plain, everyday people, the burden-bearers, the sacrificers. We should find that those who are doing the most to advance civilization in the aggregate, and to preserve the greatest of all our institutions—the home—are the unknown toilers.—Success.

Trying to farm without a farm paper is like trying to sharpen a lead pencil with a pair of scissors. See our "Blocks of Two" proposition.

TO CURE A COLD IN ONE DAY

Take Laxative Bromo Quinine Tablets. All druggists refund the money if it fails to cure. E. W. Grove's signature is on each box. 25 cents.

Lightning Feed Mill



Greatest Capacity. Lightest Draft, Quaternary Gear, Roller Movement. KANSAS CITY HAY PRESS CO., 129 Mill Street, Kansas City, Mo.

New way to smoke meat in a few hours with KRAUSER'S LIQUID EXTRACT OF SMOKE. Made from hickory wood. Delicious flavor. Cleaner, cheaper. No smoke house needed. Send for circular. E. KRAUSER & BRO., Milton, Pa.

Twenty-Five Hundred Strong We Await Your Orders

Each employee thoroughly trained to attend to his or her special part of your order in the quickest possible time and without mistake. Not only best goods at lowest prices, but **PROMPT SHIPMENTS** are largely responsible for our immense and still rapidly increasing business. Ninety-seven out of every hundred orders are shipped within 3 days after being received and thousands are shipped the same day.

Don't you think it would pay you to trade with us? From our large

catalogue you can buy everything you need at wholesale prices. Fill out the coupon and send it with 15 cents for our catalogue **TODAY**—you will more than save your money on the first order you send us.

CUT OUT THIS COUPON

Send for Catalogue TODAY and get ready for Spring "fixing up."

Montgomery Ward & Co., Chicago.

Enclosed find 15 cents, for which please send me Catalogue No. 71.

Name _____ Write very plain.

Express Office _____ Post Office _____

County _____ State _____

Montgomery Ward & Co., Chicago



Agricultural Matters.

Growing Alfalfa in Kansas.

FROM BULLETIN NO. 114, FARM DEPARTMENT KANSAS STATE EXPERIMENT STATION, BY H. M. COTTRELL, M. S.

Alfalfa is adapted to a wide range of soils and climate. In Kansas it will make the greatest growth on rich, well-drained bottom land where the subsoil, while not sand or gravel, is porous. It has been grown for years on the farm of the Kansas State Agricultural College on high upland, where it is 180 feet to water. The yield on this land averages more than three tons per acre per year. On better land the yield is four to six tons per acre.

Alfalfa makes the strongest growth and lives longest on rather heavy land that is well supplied with lime. On sandy soils the growth is vigorous when moisture is abundant, but during drouth alfalfa suffers severely on sandy soils. It is much shorter-lived on sandy than on heavy soils, one reason probably being the lack of potash and lime. It is somewhat difficult to get a stand of alfalfa on waxy, gumbo soils, but once a stand is secured heavy crops may be expected for many years, and the growth is less affected by drouth than with other soils.

The writer has traveled thousands of miles in Kansas each year for the past five years, and has found profitable crops of alfalfa growing on almost all kinds of tillable soil. He believes that at least 90 per cent of the tillable land of the entire State is adapted to the growth of alfalfa, and that there are very few farms anywhere in the State that do not have some land that will grow alfalfa profitably.

Alfalfa is a profitable crop both on bottom land and upland, and under present conditions, on the greater part of the tillable land of the State, this crop will return a greater cash income year by year than any other feed crop raised.

CONDITIONS DEMANDED BY ALFALFA.

The young alfalfa plant is one of the weakest plants grown on Kansas farms. It grows slowly, is a weak feeder, and is easily checked or killed by weeds and by unfavorable conditions of soil, weather, or treatment. Mature alfalfa is a most vigorous plant. Its roots go down deep in the soil. It is a vigorous feeder, and lives and yields well under many unfavorable conditions. For this reason it will pay well to give the baby alfalfa plant good care and favorable surroundings for the first year of its life.

Moisture is an absolute necessity to the growth of the young plant. Land for alfalfa should be in the best of tilth and carry a full supply of moisture, without being soaked. Loose soil should be backed before seeding and during the life of the plant, while hard soil should be made mellow. Both classes of soils should be put

and kept in the best condition for holding and supplying moisture to the plant. Do not seed land to alfalfa until this condition is secured, if it takes two or three years to get it.

A good seed-bed almost insures a good stand of alfalfa. The stand to be secured from seeding alfalfa largely depends upon the condition of the seed bed. As alfalfa is a costly crop to seed, and as it is expected to furnish good crops for ten or more years after seeding, it is profitable to spend much labor on the seed-bed and get it just right. The land for alfalfa should be thoroughly firmed on the surface to a depth of three or four inches; below this the soil should be mellow but compact, in such a condition as to hold moisture and to bring up the greatest amount of moisture from below.

The young alfalfa plant is a very weak feeder, and must have soil that is fertile and in condition to furnish plant-food easily. After alfalfa reaches maturity it can secure abundant food from tough, hard soils. Mature alfalfa adds nitrogen to the soil in large quantities, but the young alfalfa plant must be supplied with nitrogen in an easily available form, or it will not thrive and will often perish. In Kansas, this supply of nitrogen is secured cheaply in two ways—by a short fallow, and by growing some legume, such as soy-beans, Canada field-peas, or cow-peas, on the land before it is fitted for alfalfa. Either of these methods will put in the surface soil sufficient nitrogen in the right form for the young plant.

Alfalfa will not grow with wet feet. The land must be well drained, either naturally or artificially. It grows best where permanent water is fifteen or more feet below the surface. With thoroughly drained soils, it sometimes only six to ten feet below the surface, but not often. On hundreds of farms in Kansas alfalfa is a paying crop with the permanent water 30 to 180 feet below the surface.

To insure a good stand of alfalfa, the land must be free from weeds and weed-seeds at the time of seeding. The weak, young alfalfa plant is more easily killed by weeds than any other farm plant. If it is desired to sow alfalfa on land that is foul with weeds, it will pay to plant some cultivated crop for a year or two and give such cultivation as will thoroughly clean the land. The additional yield of alfalfa secured through this preparation will repay for the expense and the delay.

Prof. William P. Headden found at the Colorado Experiment Station that each ton of alfalfa hay removed from the soil fifty-one pounds of potash, forty-four pounds of lime, and eight pounds of phosphoric acid. A ton of alfalfa hay contains forty-four pounds of nitrogen. The soil must furnish these materials.

The conditions demanded by alfalfa are abundant moisture, a perfect seed-bed, fertile soil at seeding, good drainage, and no weeds. The cheapest method of securing these conditions on the farm where alfalfa is to be seeded is the method to adopt. Each farm will require slightly different treatment from neighboring farms.

CONDITIONS UNDER WHICH ALFALFA WILL FAIL.

When alfalfa is covered with water from forty-eight to seventy-two hours it dies. There is some land in Kansas on which alfalfa can not be grown that is suited in every other way to alfalfa, except that it is subject to overflow. An overflow where the water stays on less than twelve hours seldom injures alfalfa, except from washing, but where the water stands two or three days the alfalfa will be killed. On close soils alfalfa sometimes kills out in spots, because there are low places or small depressions where water stands. On such soils, care should be taken before seeding to have such depressions treated so that the surface-water will drain from them with shallow open ditches or furrows. Alfalfa will not grow in water-soaked soils. In swampy ground and in poorly drained soils the roots will rot and the plants die.

Alfalfa will not grow where permanent water comes too near the surface. Under most conditions alfalfa does best where permanent water is from twenty to thirty feet below the surface. In loose land it frequently does well where permanent water stands ten feet below the surface, but in such cases the soil above the permanent water must be well drained. During spring rains alfalfa may thrive for a short time if the ground-water comes much closer to the surface than the distances given, but the shorter the time in which water stays near the surface the better it will be for alfalfa.

Alfalfa does not grow well where the subsoil is loose gravel, unless there is a good body of good soil above the gravel.

In some places in western Kansas the ground-water is sufficiently close to the surface for good results, but between the surface-soil and permanent water is a layer of dry sand that cuts off the connection between the surface-soil and the ground-water. With such conditions alfalfa will die in time of drouth. Under the same conditions cottonwood trees will die and corn will be a failure. These conditions are not common, and where they do occur one farm will often be found to have them while on adjoining farms the strata of sand is either absent or moist and alfalfa thrives. A rule that holds true, with some exceptions, in all parts of Kansas is that alfalfa land is land which will grow regularly good corn and cottonwood trees.

CROPS TO RAISE BEFORE SEEDING TO ALFALFA.

When every condition is favorable, alfalfa may be seeded on freshly turned prairie sod that has been well firmed. More often alfalfa fails on sod, and does best when seeded after the land has been cropped for two or three years.

With land that has been under cultivation for many years, crops must be grown that will free the land from weeds and put it in good mechanical condition. Corn and potatoes are both good crops for this purpose. On stiff, hard land, millet is a good crop to mellow up the soil, but it must be cut

when the heads appear. If left until some of the seeds harden, enough will shell off to seed the ground, and volunteer millet is one of the worst weeds young alfalfa has to contend with.

Many farmers have found difficulty in securing a stand of alfalfa following sorghum or Kafir-corn. Both of these crops exhaust the soil of water more than other farm plants, and if the ground can not be put in good condition and become well supplied with moisture from the surface to a good depth, after sorghum or Kafir-corn have been harvested, it will be useless to seed alfalfa. Usually, good conditions for alfalfa can be secured following these crops if the ground is well plowed, packed daily as it is plowed, and thoroughly harrowed as fast as

with scant early rainfall, an almost perfect stand of alfalfa was secured with these methods on land which last year grew a heavy crop of sorghum.

The best crop to raise on land before seeding to alfalfa is some legume, such as Canada field peas, soy-beans, cow-peas, or clover. The legumes have the double value of putting the land in good condition and of adding nitrogen and vegetable matter to the soil in just the form needed by the young alfalfa plant. Canada field peas should be sown in March with oats, sowing two bushels of each per acre. Cut when the oats are in bloom and a heavy yield of good hay is secured. Soy-beans may be planted late in May, and will be ready to harvest in August. Both Canada field peas and soy-beans are off the ground in time for thorough preparation of the soil for fall seeding of alfalfa. Cow-peas and red clover are especially valuable to grow the previous season, when alfalfa is to be seeded in the spring. If the land is weedy, soy-beans and cow-peas may be cultivated.

Red clover is a good plant to grow before seeding to alfalfa on soils that have a hard-pan subsoil which holds water and prevents good drainage. Red clover is much more vigorous than young alfalfa, and will grow down into the hard-pan under conditions that will kill young alfalfa. After the red clover has stood two years or more and has penetrated the hard-pan to a good depth, the ground can be prepared and seeded to alfalfa. The decaying clover roots will keep the hard subsoil open and drained, and furnish nitrogen to the alfalfa plant until it reaches full vigor, when it will yield a much larger crop than clover, live for many years, and each pound of alfalfa will be worth considerably more than an equal amount of clover.

PREPARATION OF THE SOIL.

The ground for alfalfa should be thoroughly pulverized and deeply plowed, but it must be well settled before seeding and only the surface kept loose. Alfalfa will usually fail if seeded on freshly plowed ground. If it is necessary to plow the ground before seeding, plow as early as possible, harrow thoroughly, making a good seed-bed, and then wait until a good rain has settled the soil before seeding.

A well-cultivated corn-field, with

the stalks cut and drawn off, will give ideal conditions for seeding alfalfa. Such a field should not be plowed, but harrowed, before seeding. Wheat, oat, flax and millet stubble-ground, plowed, disked, and harrowed thoroughly, and allowed to settle before seeding, furnishes good conditions for alfalfa. If such ground is mellow plowing may not be necessary, and the land will need only to be disked and cross-disked.

A careful farmer and a careless renter a few years ago put in alfalfa in adjoining fields in northeastern Kansas. The farmer plowed the land deeply and pulverized it until it was like a garden-bed. He immediately sowed alfalfa, secured a thick stand, and in a few months the alfalfa entirely died out. The renter thought it would not pay to spend much time on another man's land. His field had been in corn the previous year. He broke the stalks with a pole, sowed the seed broadcast, and covered it lightly with a harrow. He secured a good stand that was permanent. Usually a good stand can not be secured with so little preparation, but a deep, mellow seed-bed at seeding time generally insures a failure. The more thoroughly the seed-bed is prepared the better, if it is allowed to settle before seeding.

The ground must be deeply pulverized, well settled, with a good mulch on the surface, and saturated with moisture, so as to bring up the seed quickly and force growth. If any of these conditions are lacking do not sow.

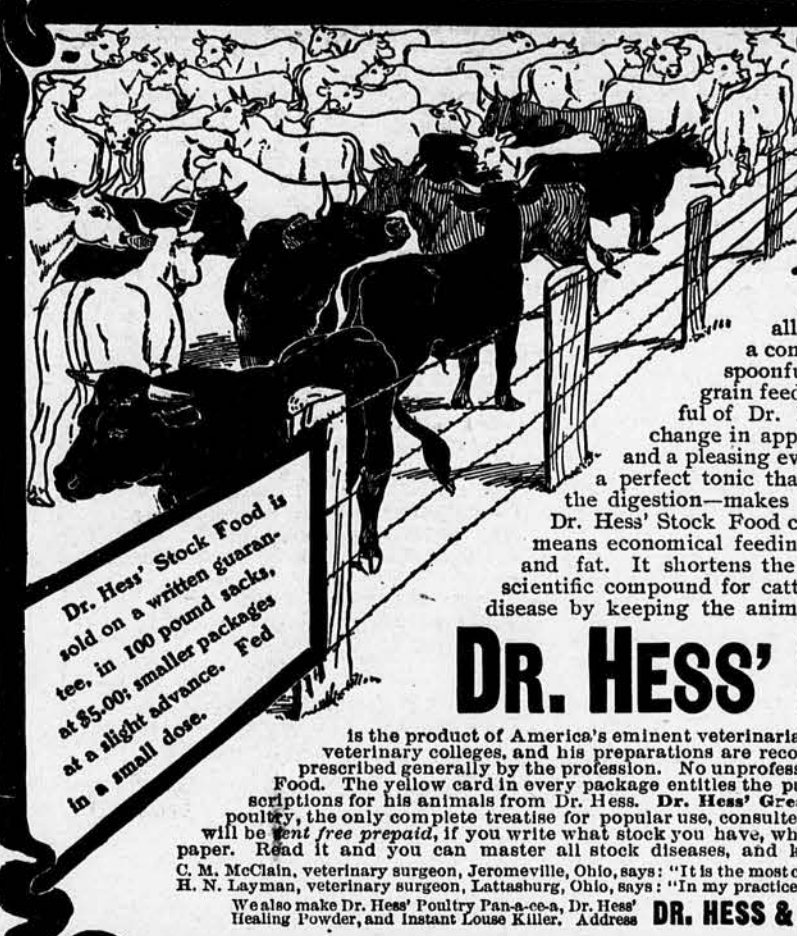
On clay lands to be sown in the spring, we prefer deep plowing in the fall, followed by a thorough surface preparation without plowing in the spring. Hard and waxy subsoils that hold water and prevent good drainage may be greatly improved by listing deeply late in the fall, putting the furrows close enough together to make a sharp ridge instead of a flat one, as in listing for corn. Such land will freeze through and through, the ridges will freeze and thaw each warm day during the winter, and the deep furrows allow the subsoil to be frozen to a good depth. The alternate freezing and thawing of the subsoil will not be otherwise secured, and the freezing of the tough subsoil has a tendency to granulate it and make it porous. Often this effect will last for several years, by which time the alfalfa has attained such a vigor that the unfavorable soil does not affect it. Land listed in the fall for alfalfa should be leveled in March and, as leveled, have a good surface mulch provided to retain the moisture. This is very important on firm soils.

With either spring or fall seeding, if the land needs to be plowed, we harrow each day's plowing the day it is plowed. As soon as the surface has become dry we go over the ground with a Campbell subsurface packer. This is an implement which consists of a series of wheels mounted on a shaft. The wheels are about thirty inches in diameter and are placed six inches apart on the shaft. The rims of the wheels are sharp, so that they press and cut into the ground, and a six-foot machine weighs nearly a ton.

The packer leaves the soil firm at the bottom of the furrow and loose at the top. The firm bottom soil makes a good connection with the subsoil and puts the soil in such condition that the water in the subsoil is brought up by capillary action to the soil in which the roots grow. The loose surface-soil, left by the packer forms a dust mulch that prevents the evaporation of moisture from the surface. We follow the surface packer with a harrow, and a harrow or disk every ten days until seeding.

On loose and sandy soils the preparation of the soil is different, the need on these soils being to compact the land as much as possible. One of the best preparations for loose soils is to grow legumes for a year or two, to add vegetable matter to the soil and hold it together and retain the moisture. The cow-pea is one of the best plants for this purpose.

In Kiowa County good stands of alfalfa followed by heavy yields have been secured on very sandy land by sowing the land to wheat. After harvest, volunteer wheat and grass sprang up, and through the fall and winter these were pastured heavily, the object being to pack the soil with as much trampling as possible. Early in spring the trash on the ground is burned, and alfalfa drilled in without stirring the ground with either harrow, disk, or plow. In favorable



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C. M. McClain, veterinary surgeon, Jeromeville, Ohio, says: "It is the most comprehensive work for farmers I have ever seen."
H. N. Layman, veterinary surgeon, Lattasburg, Ohio, says: "In my practice I often follow suggestions given in your book."

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seasons a good stand is secured. In an ordinary season, the fall after seeding there will be patches of alfalfa and patches of sand-burs. The entire field is again pastured through the fall and winter, to secure more packing. Early in spring the trash is again burned off and the bare places seeded to alfalfa with a drill, without stirring the soil. In two or three years a good stand is secured all over the field. Such treatment will only succeed with very loose soils and light ment would insure an absolute failure.

For fall seeding we disk the ground the day the crop is removed, if possible. Where the land has been in wheat or oats, we disk as soon as the crop has been shocked, running the disk around the shocks. The disking should be deep enough to form a good earth mulch. As soon as convenient after disking, if the land needs plowing, it is plowed, harrowed, and packed, as previously described, and then cultivated, disked or harrowed every ten days thereafter until seeding. The repeated cultivation keeps the surface fine, compacts the subsurface, aids in retaining moisture, promotes the formation of the nitrogen compounds so much needed by the young alfalfa, and rids the land of weeds. After each cultivation a crop of weeds starts up, to be killed by the following cultivation.

The seed-bed is the most important factor in securing a stand of alfalfa. The conditions needed in a seed-bed have been fully described, and some of the methods of securing them have been given. Each farmer should treat his land in such a way as to best secure these conditions cheaply.

(To be continued.)

The Thirty-Second Annual Meeting of the Kansas State Board of Agriculture.

The thirty-second annual meeting of the State Board of Agriculture is to be held in Topeka, January 14-16. This is the big annual gathering of Kansas farmers, stockmen, et al, and in the State of Kansas is rightly regarded as one of the more, if not the very most, important of the year.

The personnel of the program for the next month's meeting of the Board of Agriculture makes it one of unusual interest. Governor Bailey and Mayor Parker will deliver addresses of welcome, and following them will be two speakers of considerable note—Dr. B. T. Galloway, chief of the Bureau of Plant Industry, Washington, D. C., representing the U. S. Department of Agriculture, and A. C. Halliwell, the wide-awake, up-to-date editor of the Chicago Live Stock World, who will exploit "The End of all Cattle—Meat," while Dr. Galloway will tell of "The Work of the United States Department of Agriculture in Its Relation to the Development of the Middle West," which will bring

to a close the first session of the meeting proper.

Thursday morning, January 15, Mr. E. W. Westgate, of Manhattan, master of the Kansas State Grange, will have for his theme "The Grange—Its Past and Possibilities." Many people still have the Grange confounded with the old Farmers' Alliance organization, which is entirely a mistake, and Mr. Westgate is given a most excellent opportunity to correct these impressions and make clear just what the modern Grange stands for, its work, etc. Mr. Frank Hoover, a prominent stockman of southeastern Kansas, will dwell upon "The General-Purpose Hog of the Twentieth Century." In the afternoon will come a battle royal, and by many considered to be "the feature" of the whole meeting, i. e., the discussion of "The Railroads and the Farmer," by J. W. Glead, of Topeka, and "The Farmer and the Railroads," by Mr. Henry Wallace, editor of Wallace's Farmer, of Des Moines, Iowa.

The evening session will serve to introduce to agricultural Kansas the new professor of agriculture at the Manhattan college, A. M. Ten Eyck, who has for his topic "Soil Culture," by which his hearers will be enabled to take his "measure." It will be a ten-strike for Ten Eyck if he makes good, as is confidently expected. Mr. Otis L. Benton, of Oberlin, will discourse on "The Live Stock and Agricultural Future of Northwest Kansas," which should give much interesting information about that section of the State. Kansas lands are becoming higher priced as they become older and there is much demand at this time for information along such lines as "Growing Beef on High-Priced Land," and this topic will be handled by E. A. Burnett, professor of animal husbandry, University of Nebraska, Lincoln, and in the afternoon session the famous "doddie" breeder and feeder, Mr. L. H. Kerrick, of Bloomington, Ill., will present a paper on "Live-Stock Husbandry and Agricultural Prosperity," and in the evening Prof. James Atkinson, editor of the Iowa Homestead, will tell about "Improvement of Farm Crops."

In preparing his program, Secretary Coburn has not been unmindful of the better halves, and those to be and not to be, and the women of Kansas are ably represented by Mrs. Hill P. Wilson, of Lawrence, whose topic is "The Ideal Woman." Mrs. Henry Block, of Syracuse, Hamilton County, will give some personal reminiscences and observations of "Gardening on the Santa Fe Trail," which will be interesting, entertaining, and instructive.

Besides the addresses and papers mentioned, more or less time Friday afternoon will be taken up with answering questions found in the "Query Box," and with the election of officers and members, successors to the following to be chosen: President Edwin Taylor, Vice-President J. H.

Churchill, Treasurer Edwin Snyder; members, Chas. E. Sutton, Geo. W. Hanna, Geo. W. Glick, Ed. R. Smith, and J. T. Cooper. All railroads in Kansas have made a greatly reduced rate for the round-trip for this meeting, and the indication is for a large attendance.

Experience With Emmer.

EDITOR KANSAS FARMER:—In the first week of March this year I sowed four bushels of Russian emmer on two and one-half acres of ground, also sowed about ten acres of adjoining land to barley at the same time. Owing to an extremely dry and windy spring, the barley produced but a very poor stand, yielding about five bushels per acre, while the emmer produced twenty bushels per acre. The stand of emmer was not thick enough (not less than two bushels should be sowed to the acre) but every plant grew and produced good sized heads. From this experience it seems that Russian emmer must be a very valuable cereal for Kansas.

I saved my seed and will sow twenty-five acres with emmer next spring. Have found that all kinds of stock eat the grain free, and the straw of emmer is preferred to prairie hay. The seed is a medium between barley and oats, but is nicer to handle, being free from beards.

Farmers having gained experience with this cereal will oblige me by giving me the advantage of their experience through the KANSAS FARMER.

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The Stock Interest.

THOROUGHbred STOCK SALES.

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

January 13, 1903—J. B. & A. M. Thompson, Nashua, Mo., Galloways, at Kansas City.
January 14-15, 1903—C. W. Armour and Jas. A. Funkhouser, Herefords, at Kansas City.
January 22-23, 1903—Combination sale pure-bred Hereford cattle, at South Omaha. W. M. Rogers, McCook, Neb.
January 23, 1903—Breeders' State combination Berkshire sale, at Topeka.
January 28-29, 1903—C. A. Jamison, Peoria, Ill., Shorthorns, at Chicago.
February 2, 1903—G. E. Fuller, Morrowville, Kans., bred Poland-China sow sale.
February 3, 4, and 5, 1903—Combination sale at Wichita, Kans., Percherons, Shorthorns, and Poland-Chinas. J. W. & J. C. Roelison, Snyder Bros., and others.
February 5, 1903—Thompson Bros.' sale of Poland-China bred sows and gilts, at Marysville, Kans.
February 6, 1903—Breeders' combination sale of Berkshires, at Kansas City.
February 10-11, 1903—G. M. Casey and T. J. Wornall, Shorthorns, at Kansas City.
February 10, 11, and 12, 1903—J. F. Stodder, George Bothwell, and others, Shorthorns; also C. A. Stannard and others, Herefords, at Oklahoma City, Okla.
February 17, 1903—Geo. F. Kellerman, Shorthorns, at Kansas City.
February 20, 1903—S. S. Spangler, Milan, Mo., Percheron horses.
March 3, 1903—L. M. Monsees & Son, Smithton, Mo., Jacks, Jennets, saddle horses, and Poland-China swine.
March 8 and 9, 1903—C. H. Gardner and M. A. Judy, Aberdeen-Angus cattle, at Chicago.

Experiments in Crossing Various Breeds of Swine.

Nearly every farmer is interested in cross-bred swine, and will therefore be interested in the work of the Minnesota Experiment Station has been doing in breeding and feeding various cross-bred animals. This station has been carrying on an extensive series of feeding experiments with animals of the various breeds and crosses of the same. The results of these tests are given in Bulletin No. 73, of which we make the following summary:

In the first experiment the general plan was to take hogs of certain breeds, grades and crosses at birth, and to rear them on their dams until weaning time. The dams were to be fed the same kind of food during the nursing period. The pigs were then to be fed on the same kind of food during successive periods and to be finally slaughtered at the station for the purposes of making comparison. The object of this experiment was to determine the capacity of the different breeds and crosses, under similar conditions as to feed and treatment, the relative cost of producing pork from swine of different breeds fed on a diet essentially nitrogenous, the relative cost of producing pork fed on a corn diet.

The following breeds and crosses were used: 1, Poland-China; 2, Tamworth-Poland-China cross; 3, second and cross Large Improved Yorkshire on Berkshire; 4, Poland-China, fed corn; 5, Large Improved Yorkshire-Poland-China cross; 6, pure Tamworths; 7, pure Large Improved Yorkshires.

The food eaten was valued as follows: Shorts, \$10 per ton; corn, 22 cents per bushel; barley, 30 cents per bushel; field roots, 10 cents per 100 pounds; skim-milk, 15 cents per 100 pounds; green feed, \$1 per ton. An allowance of 5 cents per 100 pounds must be made for grinding the corn and barley, and this is added to the cost of the feed consumed.

The cost of securing 100 pounds increase during the period covered by the experiment is as follows: Lot 1, \$2.52; lot 2, \$2.24; lot 3, \$2.17; lot 4, \$2.28; lot 5, \$2.31; lot 6, \$2.16; lot 7, \$2.01; lot 8, \$2.02. The gains made were very moderate, but are just as satisfactory for comparison. It will be noted that the pure Tamworths, lot 7, made the most economical gain. The pure Improved Yorkshire, lot 8, were almost on a par with the Tamworths, there being only 1 cent difference in cost of producing 100 pounds of pork. Next to these come the Yorkshire-Poland-China cross, lot 6, with the second cross of the Yorkshire and Berkshire, lot 3, about the same. Strange as it may seem to many hog-raisers, the Poland-Chinas, lot 1, stand highest in the cost of production. The experiment station calls attention to the fact that Poland-China dams were essentially corn-reared. However, the dams of the Tamworth and Poland-China crosses, lot 3, were of the same type.

In the second experiment an attempt was made to cover the same ground as in the first. However, there was a slight difference in the breeding of some of the animals, although they were mainly the same. There was also a slight difference in the kinds of green food given. This second experiment, as the first, began with the birth of the pigs and ended when they were 28 weeks old. In this test, the cost of increase was somewhat differ-

ent. The large pure Yorkshires made the gains most cheaply. It will be remembered in the first experiment they stood second. The Tamworth-Poland-China cross was next, and the third in cheapness of production was the Yorkshire-Poland-China cross. The pure Poland-China again stand highest in cost of production, as in the first experiment, and the next highest is the Yorkshire-Berkshire cross.

In summarizing these two tests, the station points out that it is not safe to draw conclusions from these experiments as to the cost of production from pigs fed on corn, as compared with those fed on a more nitrogenous diet. The experiments point to the fact that gains made by well-fed hogs increase with advancing age for several months after birth.

The experiments do not sustain the view that feeding will be less satisfactory with each succeeding cross of Yorkshire or Berkshire. The swine of the lard-producing type are not more cheaply grown up to the age of 196 days than swine of the bacon-producing type. The tests point to the fact that pork can be more cheaply produced from the Yorkshire and Tamworth breeds than from the Poland-China or strictly lard types. The test further shows that the crossing of the Large Improved Yorkshire and Tamworth boars upon Poland-China sows produces animals which are vigorous, shapely, growthy. During the two years covered by the experiments, pork was produced after weaning time at an average cost for food of \$2.24½ per 100 pounds.

Treatments for Hog-Cholera.

Much has been said and written about treatments for hog-cholera. Doubtless an efficient treatment will eventually be found for this as for other germ diseases if one has not already been found. Writing of this subject Dr. W. L. House, of Grand Rapids, Mich., says:

Christ said, "Cast not your pearls before swine."

I am doubtful whether any information on this subject will be appreciated or not.

I do not mean that the farmers can be likened to swine, but they have been humbugged and deceived so many times, they naturally and with good reason look with suspicion upon any person who attempts to suggest a remedy.

However, I will say that Dr. Brown, formerly assistant State veterinarian of Indiana, spent several years and a good deal of money trying to produce a serum or lymph for hog-cholera.

He finally succeeded but found it impractical for the following reasons, viz:

1. The serum only immunized for one season. The secretions of an animal are so strong they quickly eliminate the serum from the system.
2. The serum or lymph is of no value unless it contains the live germ.
3. From the secretions of the animal this live germ is thrown out, which impregnates the soil and gives the disease to some other herd occupying the same ground the following year.
4. The serum is effective only during between the twentieth and thirtieth days, as the germ dies of his own poison after thirty days.
5. To be of any value, it would require fresh serum or lymph being made continually which would be impractical.
6. As it spreads the disease to other herds its use would be suicidal and inadvisable.

It would be unprofessional for me to advertise a remedy. I will say, however, that an effective and successful remedy has been known to the leading light of the veterinary practice for three or four years which has proven equally successful in almost all forms of germ diseases including blackleg, providing the veterinarian can reach the animals in its earliest stages, or say, before the disease has destroyed, say 25 per cent of the herd, in which case the veterinarian rarely ever loses to exceed one or two more out of the remainder of the herd after his arrival.

Among those who have been treating these diseases successfully during the past five years are Dr. Rowan, Belvidere, Ill.; Dr. Brainwaith, Champlain, Ill.; Dr. Roys, Manning, Iowa; Dr. Martin, assistant State veterinarian, Buffalo, N. D.; Dr. Kirby, Waukena, S. D.

A full copy of these reporting would take up needless space. I have given a few scattering ones for the benefit

of any who wish to make any further investigation.

The truth is always simple when we finally reach it.

The problem involved in germ diseases including not only hog-cholera, but nearly all diseases of a germ origin is a very simple one.

Germs may be divided into two classes—one that thrives in an alkali and the other that thrives and propagates in an acid condition, in the same way that there is a fresh water and a salt water fish.

The pagocytes or white blood cells thrive in an alkali condition, the blood in its normal state being an alkaline fluid.

All germs known as disease germs, however, thrive in an acid condition. Entering the system they set up fermentation, transforming the system from an alkaline to an acid condition, which would be like transforming a fresh water fish to salt water. Well, he would kick lively for a while and soon die.

Now the same rule applies in all germ diseases of man or beast.

The remedy is very simple. In all diseases (except glanders and other cyst diseases) the veterinarian simply throws under the skin and administers internally the remedy referred to which embraces an alkali and antitoxine.

The alkali neutralizes the acid produced by the germ and the antitoxin destroys the virus. Nature now assisted comes in and does the rest.

Mange or Texas Itch Among Horses.

R. A. CRAIG, IN NEWSPAPER BULLETIN, PURDUE UNIVERSITY AGRICULTURAL EXPERIMENT STATION.

This is a disease of horses corresponding to scab among sheep. It has been reported occasionally during the past year from various parts of the State. The majority of these reports have shown the disease to be in Western horses recently brought to the State and in natives that have contracted the trouble from them.

The disease is due to a small parasite or itch mite that affects horses only, and the disease is spread by the animals coming in close contact with infected animals have been or from using harness or blankets that have been used on diseased animals.

The earliest symptom is the intense itching as shown by the animal rubbing against trees, fences, sides of the stall, or biting the part. Blanketing the animal increases the irritation. The affection usually begins with some small patch and gradually extends over the body. If the skin be examined carefully it will be found to be reddened; there will be numerous small elevations like pimples and the hairs will show matting. Crusts form, the hair falls out, leaving large, dry patches. In extensive infection the skin becomes thickened and markedly ridged. The animals lose flesh and become generally debilitated and some may die.

The disease responds to treatment very promptly. Strong solutions of any of the sheep dips, especially the creolin like or coal tar preparations, as zenoleum or chloronaphtholeum, or the tobacco extracts will soon arrest it. The washing should be thorough and repeated once a week until well. The harness, stalls, etc., will need to be washed with a similar solution to prevent reinfection.

Peculiarity of Red Polled Records.

EDITOR KANSAS FARMER:—I few weeks ago I gave in your paper a brief account of the milk record made by the Red Polled cows, No. 7560 Sunshine R 2 and No. 14547 Beulah Bride R. 8. When my article appeared in print it read as follows: "Sunshine Rose 2d No. 7560 and Beulah Bride Rose 8th No. 14547. I suppose I ought to thank the editor for thus correcting, as he thought, my mistake. As the editor was kind enough to endeavor to do me this favor I would like to enlighten him and many other editors (as there seems to be few who understand how to print the name and number of a Red Polled cow as it is done by the editor of the Red Polled Herd Book). The numbers of all cows precede the name, while the numbers of all bulls follow the name. Now as to the R 2 and R 8, that R does not stand for Rose as seems to have been supposed. When the English Red Polled Herd Book was originated, its editor, Henry F. Euren, conceived the plan of each pedigree showing to what foundation cow the animal for which the pedigree was made traced. So each herd was given a letter of the al-



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A safe, speedy and positive cure for

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

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

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The Original Hog Dip.

Used on Outside and Inside of Hogs

Kills lice and fever germs, removes worms, cures mange, canker and cough; aids digestion, promotes healthy growth, and

Prevents Disease, at Small Cost.

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MAN OR BEAST.

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LUMP JAW.

A positive and thorough cure easily accomplished. Latest scientific treatment, inexpensive and harmless. NO CURE, NO PAY. Our method fully explained on receipt of postal.

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Immune Hogs

The pigs are born Cholera-proof.

Inoculation before birth the most scientific and best hit ever made in preventing Hog Cholera. Write for free book and agency.

ROBERT RIDGWAY, Box 300, AMBOY, IND.

phabet and all the twenty-six letters were used except, I believe, J and Z. The herd belonging to Lord Sondes, called the Elmham herd, was given the letter A and the cows of the herd were numbered, beginning with No. 1 and running through as many numbers as there were cows in the herd. To illustrate: The cow in the Elmham herd called Primrose was registered Primrose A 1. The second cow of the same herd was registered Cherry A 2. B stands for the Biddell group, and all cows belonging to the Messrs. Biddell were registered as, Handsome B 8, Suffolk B 11. The letter C stands for the Crammer group, the letter E for the Eaton group, H for the Hammond group, K for the Kimberley, L for Mileham and East Dereham. It seems to have been impossible to give each group the letter which was the first letter of the name, but this was done as much as possible, as N for Necton, O for Oakley, P for Powell, etc. Now, in the case of the two cows, Sunshine and Beulah Bride, they trace to the Starston and Bungay group, Sunshine tracing to the second cow of the group, Lovely R 2, while Beulah Bride traces to the eighth cow of the group, Beauty R 8. All persons versed in Red Polled pedigree know when they see Sunshine R 2 that the cow Sunshine traces to the second

cow, Lovely, of the Starston group, and bred by Mr. James Read, at Laxfield, while they know that Beulah Bride R 8 traces to the eighth cow, Beauty, of the Starston group, and was bred by Mr. Thomas Easter, of the Wood Farm, Raveningham, Norfolk. I am puzzled to know, however, what students of Red Polled pedigree thought when they read of Sunshine Rose 2d, and Beulah Bride Rose 8th.

WILKIE BLAIR.

Beulah-land Farm, Dec. 19, 1902.

The Protection of Cattle Against Tuberculosis by Vaccination.

Some experiments on the vaccination of cattle against tuberculosis have recently been published by Dr. Leonard Pearson, State Veterinarian of Pennsylvania, and Dr. S. H. Gilliland. These experiments were conducted at the veterinary school of the University of Pennsylvania, with the support of the State Live Stock Sanitary Board. The work has been in progress more than two years, thus antedating all other work along this line, for the German investigations of Von Behring did not begin until July, 1901. No other investigations of this sort has been reported in any other country than in the United States and Germany. The process used was to inject into the vein of the animal to be protected a small quantity of a suspension of tubercle bacilli non virulent for cattle. This procedure, called vaccination, may be repeated several times with gradually ascending quantities. The immediate effect is to produce a passing fever following each injection, which does not annoy the animal enough to cause it to lose a single meal. The general health is not disturbed by the process of vaccination. When the series of vaccinations is completed the animal had an astonishingly high degree of immunity to tuberculosis. In the last experiment completed four young cattle were used. Two of these were vaccinated last March. All four were inoculated in July by injecting into the wind-pipe a quantity of culture of virulent tubercle bacilli. A large quantity was introduced and each of the four animals received exactly the same treatment. These animals were later in October. It was found that the two that had tubercular, showing tough lungs of this disease in the wind-pipe, throat and intestinal glands; while the two vaccinated animals, inoculated the same time, from the same material, and in the same way, were free from tubercular infection and were sound.

Dr. Pearson considers that this principle of immunization as applied to vaccination against tuberculosis of cattle is proven and it now remains only to work out the details of the method. This important work is being continued on a larger scale for the purpose of ascertaining the simplest and shortest practicable method of vaccination.

It is not yet known how long the immunity will last nor what the ultimate effect upon the animal will be. So far, however, as the few experiments here and in Germany show, no fear need be anticipated of unfavorable results in these particulars. What is needed now is the painstaking use of the method on a few tubercular herds kept under careful and continuous observation. A scrupulously careful trial on a limited scale under proper conditions will do more to furnish the information needed to answer the few remaining questions upon this discovery than any amount of general use under less careful supervision. In the estimation of the investigators it would be premature to apply this vaccination to herds until such further experiments are completed. An effort will be made to secure State aid for experiments on a scale large enough to solve this most important problem.

The Horse and His Rider.

There is more demand in this country for a man that can ride a binder, or mower, or sulky plow than for men who cut a good figure on a saddle horse. But the man who is an adept in horsemanship may give pointers to those who will never ride to hounds in the style of the English squire, and such a teacher has turned up in the person of F. S. Peer, a man well known in the Eastern States as a first-rate judge of importer of good horses. He has just published a book on riding to hounds.

In this book he speaks of the influence that may be effected on a colt even before it is born. Artificial characteristics, he believes, are developed chiefly during the period of gestation. He says:

"Anything you can do towards the

education of the colt, through the dam, the better. The dam should be turned out as soon as possible after conception, and treated and fed in a way to relax her muscles; yet nothing better can happen to the unborn colt than to have its dam occasionally used in schooling green hunters, say once a week or so. The best and most natural hunters that I ever raised came from mares that had this identical training. The best driving horse I ever bred came from a mare that was occasionally driven while carrying her foal. While carrying her next colt by the same horse, the mare was never in harness, and the difference in the two colts as they grew up was so pronounced as to call my attention particularly to this subject. The first colt was a decided improvement on either sire or dam as to harness or road work, while the second one was barely up to and certainly not beyond them. The third colt by the same horse was a better roadster, but smaller than either the first or second, and I attributed this to my over-doing the matter in my desire to educate the third colt. The mare's muscles were not relaxed enough to give the colt proper room for development, and it never attained the size I believe it would otherwise have reached."

What is true for the driving horse is equally applicable to the every-day drafter. There are colts whose heredit makes them so easily trained for any kind of work that they need, in a sense, no breaking at all. "They have old heads on young shoulders," and their natural tractability is an important element in their cash value.

What the writer has to say about training a hunting horse is equally applicable to any kind of horse on a farm.

"In regard to schooling after birth, the main point is to win and keep the colt's confidence. Go gradually, never ask him to do nearly as much as you know he can. Above all, do nothing to impair the sensitiveness of his mouth. If it is necessary to punish him, take him to the stable and throw him; this does no harm, and nothing takes the conceit out of him so well. Never punish him when he is taking a lesson, especially when he is in the whip, or spurred or injured or even uncomfortable every time he jumps, associates the act of jumping with something that is going to hurt him, and refuses or rushes it, not from fear of the jump, but of the pain he expects to accompany it."—Nor-West Farmer.

National Live Stock Association at Kansas City.

Following is an abstract of the program of the sixth annual convention of the National Live Stock Association, to be held at Kansas City, Mo., January 13, 14, 15, 16, 1903:

TUESDAY, JANUARY 13.

9:45 a. m., prayer.
Address of Welcome—Hon. A. M. Dockery, Governor of Missouri.
Address of Welcome—Hon. James A. Reed, Mayor of Kansas City.
Response, on behalf of the Association—Hon. Peter Jansen, Nebraska.
11:15 a. m., Annual Address of the President, Hon. John W. Springer.
12:00 m., Annual Report of the Secretary, Mr. Charles F. Martin.
2:30 p. m., "Mortgage Law with Reference to Live Stock," Hon. L. C. Boyle, Missouri.
3:15 p. m., "The Great Northwest as a Stock Country," Dr. J. Withycomb, Oregon.
4:00 p. m., "Railway Live Stock Agents and their Relation to the Shippers," Mr. W. V. Galbreath, Texas.
4:45 p. m., "The Movement of Live Stock and Prospects for 1903," Mr. Thomas Flynn, Illinois.
Discussion—M. C. Campbell, Kansas.

WEDNESDAY, JANUARY 14.

9:45 a. m., "The Angora Goat Industry in the United States," Dr. W. C. Bailey, California.
10:15 a. m., "The Louisiana Purchase Exposition and What It Will Do for the Live Stock Industry," Hon. D. R. Francis, President Louisiana Purchase exposition, Missouri.
11:00 a. m., "Changes in Our Financial System Which Would Benefit Stockmen," Mr. S. R. Flynn, Illinois.
11:30 a. m., "Our New Markets for Live Stock," Hon. George F. Thompson, Washington, D. C.

THURSDAY, JANUARY 15.

9:30 a. m., "How the Stock Interests of the United States are Regarded in England, and How They Compare with European Countries," Hon. F. S. Peer, New York.
9:45 a. m., "Infectious Diseases and Their Prevention," Dr. W. H. Dairymple, Louisiana.
Discussion—Dr. Charles Gresswell, California.
10:15 a. m., "The Tariff as it Affects the Live Stock Industry," Hon. A. B. Cummins, Governor of Iowa.
Discussion—Hon. W. W. Turney, Texas; Col. John F. Hobbs, New York.
11:15 a. m., "Irrigation as it Affects the Stock Grower," Prof. J. E. Stubbs, Nevada.
Discussion—Hon. N. O. Murphy, Arizona.

1:30 p. m., "The Destruction of Hides by Warbles," Mr. R. C. Jacobsen, Illinois.
1:45 p. m., "What Changes Congress Should Make in the Laws Governing the Public Domain and Forest Reserves," Hon. Charles J. Buell, South Dakota.
Discussion—Hon. E. A. Harris, Iowa; Col. John P. Irish, California; Dr. W. H. Patterson, Nevada.
3:00 p. m., "What Congress Should Do to Aid the Live Stock Industry," Hon. Charles H. Grosvenor, Ohio.
3:45 p. m., "The necessity of a Classified Census of Live Stock and How this Work may be Best Conducted," Hon. H. Parker Willis, Washington, D. C.
4:15 p. m., "Co-operation in Marketing Live Stock," Hon. Marion Sansom, Texas.

FRIDAY, JANUARY 16.

10:00 a. m., "The Proposed Merging of the Packing Plants of this Country and the Effects and Remedy," Hon. Wm. M. Springer, Washington, D. C.
Discussion—J. H. Vandusen, Nebraska.
10:45 a. m., "The Live Stock Industry in the Republic of Mexico and its Relations to the United States," Captain Britton Davis, Chihuahua, Mexico.
11:30 a. m., "The Benefit Derived from Experimental Stations," Prof. C. F. Curtiss, Iowa.
1:45 p. m., "The Benefit of a Traders' Exchange on a Stocker and Feeder Market," Mr. E. S. Downs, Missouri.
2:15 p. m., "The Process of Evolution from a Populist to a Stockman," Hon. Jerry Simpson, New Mexico.
2:45 p. m., "The Stockman in Politics," Hon. Herbert S. Hadley, Missouri.

Specialty Farming in Sumner County.

Situated in the wheat county of Sumner about fifteen miles west of Arkansas City, is one of the most beautiful farms in the lustrous Arkansas Valley. This farm is owned by Neal A. Pickett. Though a farmer who raises a great many hogs, Mr. Pickett raises no corn. Several years ago Mr. Pickett was live stock agent for the Kansas & Southwestern Railway Company, and in that capacity he had occasion to meet a great many very successful stock-raisers and farmers. Many times he would ride with shippers in cabooses and as time dragged wearily, while switching was in progress, he would lead the conversation into channels of business and trade and hear discussions on the best methods for the Kansas farmers to make money. So the opportunity to glean facts and figures at first hand was thrust upon him and he kept the sayings and pondered them in his heart. He is now demonstrating the practicability of the theories formulated as the cream of the best methods of many successful stock-raisers.

Constant watch of the markets and close application to business showed that "baby beef" is the most profitable animal a farmer can raise, and years of experience demonstrated to him that wheat, even though a crop fail once in a while, is the most profitable crop. Not only is this true but the two supplement each other in such a manner that each can be more profitable with the other than alone.

When the subject of raising stock comes to a farmer the question of pasturage is the one of first importance. By raising wheat, Mr. Pickett thinks he has settled this vital question. He claims that he gets more pasturage out of his wheat land than his neighbors do from their pastures of wild grass, and has his crop beside. In fact, there are only four months in the year he does not pasture his fields. When the crop is harvested he turns his herds in for the bunch grass and stubble. The animals are not taken out until the last of March.

At planting time, the first sown wheat is up when the last bunch of grass is turned under. It must be known from this that the fields are large. When the reporter for the Arkansas City Traveler visited Mr. Pickett's farm, he was driven over one field of 420 acres and footed it over another of 30 acres, where there was a cow or a horse to every acre and still the wheat was growing too rank. Manure taken from the feed-lot had produced the tremendous growth, and had so favorably impressed Mr. Pickett with its value, that he had men hauling to the fields everything they could get that would enrich the soil. He will extend the work over every acre of his land.

Mr. Pickett raises no corn. Less fencing is required, less help needed, and it is easier on the women folk than where corn is raised. By using the additional pasturage he can better afford to buy corn than raise it.

"Baby beef" to be the best and top the market must be from good grade stock and this is the only kind raised. He has a bunch of well-selected Herefords nearly all of which are registered. The marks of the breed can be seen across the farm and a bunch of his young stock raised on the farm make as fine an object lesson in cattle-raising as any fancier wishes to see. Two of the old cows in the herd were purchased at one of the Kansas City fine stock sales at a cost of \$500

No Lump Jaw

Fleming's 3 are free if they fail.

It is absolute folly to suffer loss by Lump Jaw among your cattle. Fleming's Lump Jaw Cure was proved a certain cure years ago. Hardly a stockman in the country now but who knows that this remedy is an easy, cheap and thorough cure.

SPAVINS CURED

In 45 Minutes.

Worst possible Spavin, Ringbone, Splint, Curb, etc., cured in 45-minute treatment. Don't question this, because there's no cost if Fleming's Spavin Cure fails. Can't harm, not painful, doesn't leave a scar. Easily applied. You should have the facts about this at once.

FISTULA & POLL EVIL

Cured in 15 to 30 Days.

Fleming's Fistula and Poll Evil Cure does the seemingly impossible because it strikes at the cause. Simple, harmless, easy to apply and it cannot fail. Write today for circulars on any or all the above remedies. State which circulars are wanted.

FLEMING BROS., Chemists,
212 Union Stock Yards, Chicago, Ill.

each. He has since found that his investment was a good one, for he says registered cattle eat no more, if as much, as poor grade cattle and they sell far better.

In handling "baby beef," which has netted him so handsomely, his object has been to get a reputation in the Kansas City market for the best beef raised. In order to do this he crowds his calves from the day they are dropped until they are turned over to the purchaser at the Kansas City stock yards one year later. In this wheat-pasture is used almost exclusively. Calves run on the wheat-fields and are fed once a day during the fall and winter and twice a day after February 1, until March, when they are marketed.

In raising cattle no effort is made to produce milk except for house and family use and the calves are permitted to run with the cows until weaned by them. Mr. Pickett takes advantage of everything that will make the calves grow. But when it is remembered that he sells calves less than a year old from \$32 to \$35 a head, and in carload lots, it is easily seen that the raiser is glad to do anything for his stock. Mr. Pickett started in the farming business sixteen years ago, purchasing a quarter section of his present beautiful farm. Application to business and hard work, combined with definiteness of method, showed that there was money in farming, and in six years he added another quarter section to his homestead. Five years later 240 acres more was added and now he owns all but 80 acres of a complete section and all is under hog tight fence. General farming and stock-raising was carried on at first. It has been only within the past few years that the specialty has been followed.

It takes horses to do farming. Mr. Pickett raises on his wheat-pasture the finest breeds of draft horses. Normans are his favorites and he has one team of match gray mares that weigh 3,300 pounds. He raises a great many horses, keeping about forty head all the time, of which twenty are work horses. No grain is fed until the colts are 3 years old, yet fine animals are raised. None but young horses are kept, the middled aged are sold off and young ones kept coming on to take their places.

Hogs are fed on wheat-pasture, also. The high-tight fence around the entire farm adds greatly to the value of the fields as hog pasture. Hogs spread manure. They are fed on the fields. A wagon loaded with corn, bought from the neighbors, is hauled to the fields and the feeding is done from that. Only the well-bred hogs are allowed on the place. Mr. Pickett's are the Ohio Imported Chester, crossed with Poland-China. The heaviest on the farm this fall weighed 600 pounds. No harm is done the wheat by the hogs rooting. They do not bother the roots while there is plenty of vegetation above ground.

But Mr. Pickett's taste does not all run to high-bred cattle and horses. Located on his farm is one of the finest homes in Sumner County. It has just been completed at a cost of \$5,000 and every stick of lumber in it is new, although there are nearly enough old buildings behind it to build a house

as large. These old buildings are the houses that were on the farms bought up as the quarter sections were absorbed and added to the farm. The horse has ten large rooms besides bath rooms, closets, pantries and attic. The bed chambers are heated with oil stoves, the lower floor rooms with ordinary stoves. The kitchen has all the conveniences a woman's work demands. Cupboards for everything, a big range, water, sink, everything handy. Located in the attic is a large tank, fed by the windmill, which supplies water to the house.

Mrs. Pickett, too, has caught the full-blood contagion and has a brood of 200 full-blooded chickens, which top the market and pull on the scales when taken to the city. The pride of the household centers in little Vera, the 2-year-old daughter, and the only child.

In a country neighborhood when one farmer gets a fine horse, the next one wants a better one. When one man builds a house, the next one wants a nicer one. Now if the neighbors follow the lead Mr. Pickett has set there will be some of the best farm houses in that part of Sumner County that there are in the State of Kansas.

The Greatest Politician of the Senate.

One of the most powerful men in the senate is Aldrich, of Rhode Island. As chairman of the great committee on finance, no action affecting the revenues can be taken without his consent. Known for years as the chief high priest of protection, his performance has vindicated his title. He is the great tariff-maker of the senate. None other is so well informed as he in all the intricacies of the customs schedules, magic figures where the change of an innocent-looking numeral, or even of a fraction, or sometimes the omission or insertion of a little comma, means a fortune won or lost to someone. Aldrich is suave, alert, smart, sometimes mysterious, and always single-purposed. That purpose is to see that protection is preserved in season and out of season in the house of its friends for its friends. Everything is bent to the end in view. Aldrich's hand is often seen; oftener it is invisible. He is crafty, burrowing, never-sleeping. A senator has a pet measure. He presses it with all his power. There seems to be no active opposition to it. Yet it fails to get ahead. Some mysterious influence blocks the way. If he is experienced, if he is smart, if he knows the ropes, the senator will go to the chairman of the committee on finance and make his peace. He will sign a treaty of alliance. He will promise to be good. He will pledge himself to be by Aldrich's side when Aldrich needs him. Aldrich is the greatest politician of the senate. Sooner or later he has his finger in every legislative pie. Often his is the actual controlling power when few if any suspect that he is bestirring himself. He has the consummate art which enables him to exert tremendous influence when to all outward appearance he is wholly quiescent. To him the senate is more than a legislative body, more than a club; it is a chessboard upon which he loves to move the pieces without showing his hand. He is never in a hurry; never anxious or eager; never seems to be mixing in other people's affairs. He sits quietly at his place, a picture of calm indifference; and, when he moves about, it is to drop down beside this senator or that for a casual word or inquiry. It is with these casual words, these little chats, that he sows his seed. He knows men, knows everyone's weakness and strength, knows each senator's dearest hope and most poignant fear. Give him a little time and he will have full information as to what everyone else is up to and scarcely anyone will have any information as to what he is up to. But he knows, and in the end he usually gets his way.—Walter Wellman in the January "Success."

Forest Park Improved Stock-Breeders' Association.

On Saturday, December 27, 1902, the above-named breeders' organization was perfected by the breeders of Franklin County at Ottawa, Kans. At a previous meeting a temporary organization was formed and various committees appointed to prepare for the meeting just held. H. A. Heath, Topeka, secretary of the Kansas Improved Stock-Breeders' Association, was present and presided at the meeting which resulted in effecting a district association of breeders with headquarters at Ottawa. It is not the intention of the promoters to make the Forest Park Association a Franklin County enterprise—rather an eastern Kansas breeders' association. Forest Park at Ottawa is famous throughout the West as one of the finest and most comfortable parks in Kansas and visitors to the Chautauqua Assembly or the Franklin County fair declare it to

be one of the most charming spots in the State. Local breeders have held some very successful sales and the new breeders' association propose to erect a building to be known as the Forest Park Show and Sale Pavilion where breeders' combination sales may be held, as occasion offers, and during the annual fair it will be utilized for exhibiting fine stock.

The annual meetings of the Forest Park Improved Stock-Breeders' Association will be held on the first Saturday in January each year, and accordingly the officers and directors for 1903 will be named on Saturday of this week. All breeders interested in this enterprise are invited to be present on January 3, 1903, at Ottawa.

The Year at Kansas City.

Cattle receipts at Kansas City for the year 1902 are the greatest on record, the total supply aggregating 2,070,000 head. The previous banner mark was in 1901 when 2,000,000 came in. Sheep receipts also break a record, the supply for the year reaching 1,550,000 head, compared with 1,134,000 as the previous record mark, which was for the year 1897. Hog receipts were in the neighborhood of 2,260,000 head, a falling off of 1,420,000 from the year 1901. Calf receipts were 200,000 head, a record breaker, and a gain of 69,000 over 1901. Receipts of horses and mules were 76,500 head, a loss of 20,000 from 1901. Total car receipts were 118,000, a decrease of 17,500 from the preceding year. The highest price given for cattle was \$8.75 paid in September. This is the high water mark for all time. Hogs sold up to \$3.17½ in July per hundredweight, the highest ever known. Stocker and feeder shipments aggregated 750,000 head, constituting another record breaker.

Gossip About Stock.

The seventh annual meeting of the Polled Jersey Cattle Company will be held at the City Hotel, Cedarville, Ohio. Chas. S. Hatfield, secretary, R. F. D. No. 4, Springfield, Ohio.

Every able-bodied and active stockman should have a pair of buckskin brand of rubber boots not made by a trust. Every one interested in the matter of the best boots on earth should consult the attractive advertisement of the Monarch Rubber Company on page

A Saunders, Manilla, Iowa, sold 44 head of Shorthorn cattle on December 24, at his home place, which resulted as follows:

9 bulls brought....	\$1,055; average....	\$117.22
35 cows brought....	4,755; average....	135.85
44 head brought....	5,810; average....	133.04

Those of our readers who wish to buy, sell, or exchange live stock, farms, machinery, etc., will find the "Special Want Column," a great business puller. Every week there are a number of new bargains offered by readers of the paper. Keep your eye on the "Special Want Column."

A sale of special interest is the auction of registered Percheron horses to be held at Kansas City, Thursday, January 22, 1903. The offering so far as breeding is concerned is of the very best and the owner, Mr. R. D. Ross, avers that the horses are superior stock as to individual excellence. Send for catalogue at once to R. D. Ross, No. 2, Carthage, Mo.

The Kansas Farmer wants a few more good active young men or women to act as its representatives in the various farming localities in Kansas and other States of the Southwest. Very favorable terms will be given to the right parties, especially to students of the agricultural and other colleges, who are dependent upon their own efforts to win an education.

Sec. C. R. Thomas, of the American Hereford Cattle-Breeders' Association, Union Stock Yards, Chicago, announces that Volume 24 of the Record is now ready and can be furnished to members of the Association at \$1.25 postpaid. This Record contains entries from 125,001 to 145,000 inclusive, with a very comprehensive index and a frontispiece showing Queenly 108933 at her best.

D. Trott, owner of Ash Grove herd of Poland-China and Duroc-Jersey swine, reports a good business for this season in both breeds. As Mr. Trott is a continuous advertiser people know him and know the quality of the stock he breeds. He still has several very fine Poland-China sows for sale that are bred to a fine hog. They will be guaranteed and will be sold at very reasonable rates to those who apply early.

The recent sale of Duroc-Jersey swine held by W. E. Mason at his former home near Haddam, Kans., was a success in every way. It was a dispersion sale of fifty-two hogs, forty head of which were April and May pigs. The general average for the entire sale was \$18.00 while the average for the yearlings was \$28.00. Mr. Mason has recently purchased a large farm near Berryton, Kans., where he proposes to build up a prize-winning herd of Duroc-Jersey swine.

On Christmas day the sheep buildings of the Union Stock Yards at South Omaha were destroyed by fire and with them about 500 sheep. The total loss is fixed at about \$50,000. The fire is supposed to have started from a lighted cigar dropped in the straw by one of the workmen. In the high wind which was blowing at the time the flames spread so rapidly that two of the barns, which measure 100 by 700 feet and are built of wood, were destroyed. About 8,000 sheep were in the barns at the time but were all saved except about 500.

Don't forget the Armour-Funkhouser sale. The best imported herd and the best native herd in Missouri contribute to this sale at Kansas City on Wednesday and Thursday, January 14 and 15. Armour's name has become synonymous with the other side, and Funkhouser's name means the best that is bred on this side of the water. A card to either Chas. W. Armour, Kansas City, or Jas. A. Funkhouser, Plattsmouth, Mo., will bring a catalogue which will tell all about this wonderful offering. Remember that you get reduced railroad rates on account of the meeting of the National Live Stock Association at Kansas City during the same week.



The Old Reliable Anti-Friction Four-Burr Megul Mills

No gearing; no friction. Thousands in use. Four-burr mill grinds 60 to 80 bushels per hour; two-burr mill grinds 30 to 50 bushels per hour. We make a full line of FEED MILLS, best ever sold, including the famous Iowa Grinder No. 2 for \$12.50. Send for free Catalogue.

Manufactured and sold by the IOWA GRINDER and STEAMER WORKS, Waterloo, Iowa.

incubators. These machines for producing young poultry are circular in form and hence have no cold corners. They are fitted with combined regulator and ventilator which makes it possible to control the ventilation and the heat automatically on a level with the eggs. The heat is distributed from the center to the circumference and the outer shell of the machine is composed of a compressed fiber board which has the advantage over lumber in being a better non-conductor of heat, and will not warp, crack, or get out of shape from dampness. The heat-retaining qualities of this material are well-known and its structure is such that it lends itself to the purpose in hand much better than lumber would do. The 1903 illustrated catalogue is just from the hands of the printer and will be mailed free if you will mention the Kansas Farmer in writing for it.

The Galloway men will undoubtedly be out in force during the week of the National Live Stock Association because of the great sale of their favorite breed of cattle which will be held in Kansas City on Tuesday, January 13, by I. B. & A. M. Thompson, Nashua, Mo. If you are already a breeder of Galloways here will be an opportunity to get some more of the best. If not a breeder you will here be afforded an opportunity to start by buying some of these cattle which grow their own storm sheds. Reduced rates on the railroads; the National Live Stock Association meeting and the greatest sale of Galloways ever, will help to make the week at Kansas City a most profitable one.

The names of Geo. Bothwell and H. C. Duncan will carry to the minds of all Shorthorn men the idea of the best breeding and finest quality known to the breed and when it is remembered that fifty cows and heifers and ten bulls will be offered for sale from the herds of these two breeders at Kansas City on Friday, January 16, Shorthorn men will have reason to take advantage of the reduced railroad rates which are given on account of the National Live Stock Association meeting to be held during that week. The bulls used in these two herds are of the best of Scotch breeding and the reputation of these breeders is such that no man interested in the breed should fail to be present at this sale, whether he intends to buy or not. But any breeder who goes there will find it difficult to get away without taking home with him some of the choice stuff that will be offered.

Publisher's Paragraphs.

In no one thing does the farmer have to rely so much on the honor of the dealer as in the buying of his supply of seeds. If his seed-corn is poor, for instance, the result is a poor stand or no stand at all. This he generally finds out too late to remedy it. This issue contains the advertisement of W. W. Vansant & Sons, of Farragut, Iowa, expert seed-corn breeders and growers. These gentlemen are perfectly reliable, they grow their own corn, select only the best, tip each ear, shell it, sack it and ship direct to the farmer. They guarantee their seed-corn to be true to name and to grow where any seed-corn will grow. Write them for circular and free sample. W. W. Vansant & Sons, Farragut, Iowa. They sell the kind of seed-corn which grows.

Like everything else there are good seeds and bad seeds; seeds that grow and seeds that don't grow; seeds that yield and seeds that don't yield; and a little thought given now to the selection of the seed you'll need, will be found time well spent, though realized much better at the harvest if you select the world-famed Ferry's seeds—the kind that always yield. For nearly half a century Ferry's seeds have been known and sown wherever good crops are grown, until farmer and gardener alike, have learned to depend upon their wonderful reliable growing and yielding qualities, year after year. It is better to pay a little more for the seed and be assured of a great deal more at the harvest by sowing Ferry seeds. The 1903 Seed Annual which is sent free, postpaid will be found unusually interesting and instructive. Write for it to-day. Address D. M. Ferry & Co., Detroit, Mich.

We are in receipt of a very handsome catalogue issued by the Iowa Incubator Company, 310 E. Second St., Des Moines, Iowa, who are manufacturers of the Iowa and the Iowa Junior hot air incubators and brooders. This company has met with a flattering degree of success because of the strong points shown in their

Short Seed Crop.—It will soon be the seedmen's catalogue time when every good farmer and grower will be expecting to receive the various seed catalogues issued by these enterprising merchants. Among the most interesting will be found the Garden and Farm Manual of Messrs. John & Stokes, 217-219 Market St., Philadelphia. This catalogue differs from those offered by any other seedmen in this country, as it is illustrated throughout with handsome photographs taken direct from the vegetables and flowers themselves. This gives it not only a distinction and quality of its own, but gives it an added value to the planter, as he can see as exactly as though the vegetable itself were in front of him what the seed which he is ordering will produce. This old firm makes a specialty of introducing sterling novelties, and their success in this direction has scarcely been equalled by any other seed firm in this country. One of their latest introductions, and which has brought them a very considerable amount of favorable comment, is their "Sparks' Earlane Tomato." This has proven to be a novelty of very sterling merit, being the finest large, round, smooth tomato and coming as early if not earlier than any other grown sort. But it, together with nearly all other seed crops this year, is a very short crop indeed, and those wanting it will have to secure their supply early, as there will not be nearly enough seed to fill the large demand that is sure to come for it. This situation also applies to nearly all the early peas, cucumber seed, all muskmelon and watermelon seeds and many a copy of this "Garden and Farm Manual" where you will find it.

For Big Hatches.

Poultry-raisers can afford to experiment in some directions—but when it comes to hatching chicks—the foundation of their business—they can not afford to take chances or run risks. They dare not trust their time and eggs and labor to a machine which may fail them. They want an incubator upon which they can depend with absolute certainty of results. That is the reason, we think, why the old standby Reliable Incubator continues year after year to lead the world in sales, both in this country and abroad. It has long proved its worth. Experienced poultrymen know exactly what they can count upon when they start it; they run no risks. The Reliable is built by practical poultrymen who devote all their time and energy to the poultry and incubator business and keep constantly improving their product. The long years of experience which they have had is worth thousands of dollars to poultry-raisers. A part of this experience is incorporated in the new catalogue they have just issued, and we know that every one of our readers will find it of great interest and practical value. Don't fail to send for a copy, enclosing 10 cents for postage. Address, Reliable Incubator & Brooder Co., Quincy, Ill.

...Public Sale...

REGISTERED

Percheron and National Draft

Stallions and Mares

TO BE HELD AT THE STOCK YARDS HORSE PAVILION, KANSAS CITY, MO., THURSDAY, JANUARY 22, 1903.



This offering will consist of twenty-five head of stallions, mares, Mammoth and Warrior Jacks. Mares, showing in foal. This consignment of Percherons, is equal in breeding, bone, style, soundness of quality, color, and action of any offering in America. They represent the deepest blood lines of the Brilliant (710) family, also Brilliant 1899 (756). Catalogue, giving full description will be sent upon application to

R. D. ROSS, R. F. D. No. 2, CARTHAGE, MO.

Horticulture.

Plant Trees and Care for Them.

EDITOR KANSAS FARMER:—I am a great lover of trees and have been for several years a keen student of forestry, noticing the manner of growth of various kinds in this climate and also the result of different soils upon the life. Such a study is very comprehensive and embraces a great variety of conditions which must be known and fully understood before any great measure of success will reward our efforts.

THE REQUISITES.

The first requisite is soil. Given a soil suitable to the growth of certain species we have laid the foundation to build on. The next thing is a question of moisture and its fairly even yearly distribution for the needs of the tree. Thirdly, the tree. It should be of the proper age to insure its growth, also possess great vigor and be free from all parasites. The bole should be straight and free from blemishes. Fourthly, the planting stage. This depends almost entirely upon the nature of the tree, character of the soil, climatic conditions, and moisture. With the climate of Oklahoma we can safely advise deep planting, allowing several years of gradual cultivation with which to level the ground. Deep planting is practically a system of conservation of moisture, and where water is near the surface, or where the soil is porous so the roots can readily penetrate to lower regions of moisture, deep planting is not so obviously indicated. Deep setting is also a safeguard against injury from winds which many times move the tree till there is a circular hole around the trunk causing a severe strain upon the tender feeder roots.

CULTIVATION.

Cultivation is next in order. Many farmers plow their trees early in the spring and not again until fall. It is a serious mistake to neglect trees through the entire growing season which usually is from about May until the first of September. Spring and summer weeding is meant to turn the entire soil, not as many do leave a strip along the tree row to sap the soil and be a safe harbor for all kinds of harmful tree enemies. Turn all the soil and after harrowing let it remain. After each rain harrow again. Occasionally give the orchard a stirring with a two-horse cultivator. The object of such culture is to preserve the moisture and to exterminate weeds.

Such a method is given for hard or semi-hard land for tree growth and fruitage. Besides it is a wonderful bug and worm exterminator.

PRUNING AND CARE.

Proper pruning and general care of the tree is of vital importance and one which, I am convinced, three-fourths of farmers neglect or do not understand.

THREE PARTS OF THE TREE.

A tree is divided in three component parts. The first is the root-system or the food-gatherer. The second is the body and branches or the structure. The third is the leaves or the vital organs.

In a state of health there is perfect unison and cooperation between these three distinct functional systems. So close is the sympathy existing between them whenever one is impeded in its work by any means, the whole unit suffers, and if there is no remedy the tree perishes. Briefly stated, the root fibers collect moisture and other necessary material in solution and convey them by capillary attraction along the inner bark upward to the leaves where oxygenization takes place, after which the sap is distributed over the tree-system, causing the growth of the ends of twigs and the lengthening of the roots. Nearly all trees build from the outside in layers of growth while the inner wood is inert. Anything obstructing the flow of sap stops growth. More trees die every year from impairment of leaf pores than from any other cause. A good remedy is to cut a circular piece of bark from the trunk just above the ground, and, after removing, bore a small slanting hole and fill with sulphur. Replace the bark and seal. The sulphur will be absorbed into the circulation and will kill all parasites coming in contact with it.

THE EXPERIMENT STATIONS.

The experiment stations are doing a wonderful work and while they are appreciated they should be aided in every possible way, and every farmer should take an active interest in their labors and results. Benefits beyond conception accrue to agriculturists every year through the painstaking preservation of our experiment station officials. Before closing I wish to say, how much more beautiful would the farmers' homes be if each one had a well-laid-out grove, and along the section lines were rows of trees. Trees are the best expression of God's handiwork on earth outside of soul-life. How peaceful, soothing, and how home-like is a grove filled with song-birds. Plant more trees and thus beautify your landscape, also conserve the moisture, finally producing a climatic change which will be conducive to more abundant production from the soil. L. A. WELD, Medford, Okla.

Starting Osage Orange and Red Cedar Seedlings.

EDITOR KANSAS FARMER:—On the strength of your forestry articles, I have gathered a lot of seeds. I want to know how to handle Osage orange before planting, also seed of red cedar. J. B. WHITTAKER, Sylvia, Reno County.

We have found it an easy matter to grow Osage orange seedlings. A variety of methods of handling the seed have all proved successful. If the "oranges" or "hedge balls" are gathered in the fall and kept wet through the winter the seed may be readily washed out in the early spring. The "balls" may be put in a tank or barrel of water, or in a sack in a pond. Covered with moist sand they will soften enough to allow the seeds to be washed out readily. Fair stands of plants were secured by drying the "balls" over winter and pounding them to pieces in the spring.

We have best success with reasonably early planting, sowing the seed quite thickly in rows, covering about one and one-half inches deep and firming the soil well over the seed. It is much more difficult to secure satisfactory results with red cedar seed. The seed is covered with a coat of gum or resin which is hard to remove. The best results have been secured by mixing the seed with wood ashes, moistening, and allowing the mixture to stand a day or two, then planting the mixture of seed and ashes. The seed must not be covered much over an inch and as it is slow to germinate some means must be provided for keeping the soil moist, a mulch of leaves, or putting the seed-bed in a shaded place will often answer the purpose.

The seedlings are very delicate after they are through the ground, a dashing rain is liable to injure them unless the surface of the bed is covered with sand or leaves to prevent the mud from splashing them. It is best to shade the seedlings for two seasons after they appear. It is often the case that a considerable number will germinate the second season after planting. ALBERT DICKENS, Kansas Experiment Station.

Hotbeds and Cold-Frames.

The season for making hotbeds will soon be here. The following descriptions from Rural New Yorker will be found convenient both for those who know how to make a hotbed and for those who want to learn:

"Granted their necessity, then comes the size desired, length of purse, etc. Directions for making the most approved kinds will be found below, which may be varied according to circumstances. The most convenient size of sash is five feet six inches by three feet two inches, which may be made at any sash and blind factory. This size of sash will require four rows of eight-by-ten glass, six and one-half panes to the row, or twenty-six in all; and about four pounds of putty. Before glazing, the sash should be primed with white lead and oil, about one pound of lead to one quart of oil; or better still, white lead and yellow ochre equal parts, as it makes a more lasting body than the lead alone. For the priming coat paint thoroughly but thinly, as it is the oil and not the filler that is required to hold the putty firmly. In laying the glass, begin at the lower or level end of the sash, lapping the first glass not less than a half inch on to the sash rail. Lay the glass crowning side up and lap each glass a full half inch, as shingles are laid, only with less lap. Tack each glass firmly in place

KENTUCKY BLUE GRASS SEED.

For a Beautiful as well as a Most Profitable Pasture sow BLUE GRASS. The genuine Kentucky seed is what you want, and from September until June is the proper time to sow. For pure seed of our own raising, and full particulars, write MT. AIRY SEED FARM, Paris, Kentucky.

J. G. PEPPARD MILLET
1101 to 1117 West 8th St.
(Near Santa Fe St.)
KANSAS CITY, MO. CLOVERS OAK
TIMOTHY GRASS SEEDS.

SEEDS



There was more money made by Farmers and Gardeners in 1902 than in any previous year in the history of the United States. 1903 will equal if not excel it. Good seed is scarce—buy early. Johnson & Stokes' Garden and Farm Manual

For 1903 illustrates by photographs and describes some of the greatest Money Bringers ever offered. Shall we send you a copy? It is free. Sparks' Earliana Tomato has no competition in the extra early class—enormously productive of large, fine, smooth, solid fruit. Has made more hard cash for our customers than anything ever before introduced by any seedsmen. Pkt. 20c. or \$1.00. Our Manual is illustrated by direct photographs and is free. Shall we send you a copy? Johnson & Stokes, 217-219 Market St., Philadelphia, Pa.



with zinc points, or, preferably, small brads. The putty should be as soft as possible, as when it is once set, it will adhere more firmly than if applied too stiff. After the putty is set, paint the sash with two coats, same as the priming coat only four to five pounds of the lead and ochre should be used to the quart of oil. Paint thoroughly, as it will pay many times over in the wear of the sash. The cost of the sash at present high price of material will be upwards of \$2 each, ready for use, exclusive of labor of painting and glazing. The labor, however, may be done at odd times by any man, woman or handy boy by following carefully the directions. Four sash of the above size will cover a box twelve feet eight inches by five feet six inches, and its capabilities if properly managed will be a revelation to the uninitiated.

The higher side of the bed should be eighteen inches in height and the lower side twelve inches, giving six inches slant, which is none too much. Each side should have three two-by-four posts, cut four inches longer than the height of the respective sides; and the tops of the posts should be cut the same slant as the top of the bed. With the side boards nailed to the top of the posts, the bed when completed and set up will be four inches above the ground, which will permit the posts to be settled into the ground somewhat and also gives more space for manure and economizes in lumber. A board twelve inches wide by five feet six inches in length, sawed cornerwise from end to end, will make the slanting end pieces, and the remainder of the ends may then be filled with any width of board convenient. Three cross pieces one inch by three should be used for the sash supports, and should be let into the side boards even with the top and set at such distance apart that the edges of two sash will rest on one support. Nail a strip of board on the outside of the lower side of the bed, letting it extend an inch or more above the top of the bed, which will hold the sash squarely in place and prevent their slipping down. A cheaper box and one much in use in large operations, is made by simply using four corner posts same height as the side boards. When filling, one side is tilted, letting the posts rest on bricks or blocks to give sufficient slant to carry off the water when the sash are placed on. This latter method is, of course, somewhat cheaper, but is also far less satisfactory. Should the above size be too expensive, use less sash; one sash is better than none. Cold frames are made in the same way, simply using soil on the inside and packing or banking with manure on the outside. For winter or early spring use, straw mats or closely fitting board covers should be used on both hotbeds and cold-frames when there is danger of severe freezing.

CLOTH COVERS.

A very cheap and also satisfactory covering may be made of cloth instead of glass, and while not entirely dependable for winter work in northern localities, will meet every requirement in many parts of the South. The boxes or beds are made in the ordinary way, but no glass being used the expensive sash are not required. The frames are made of one-by-two-inch strips, and in size are three feet in width by length sufficient to fit any width of bed. The corners are halved together and nailed with wire lath or shingle nails and clinched. For the center brace or support take a piece

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FRUIT BOOK free. We PAY CASH
WANT MORE SALESMEN
STARK BROS., Louisiana, Mo.; Huntsville, Ala.; Etc

HONEST TREES Honest in Quality and Price. We pay freight. Illustrated Catalogue. German Nurseries. We Pay the Freight. German Nurseries. Carl Sonderegger, Prop., Box 9, Bozefica, Neb.

Trees That Grow The best and hardiest varieties. See our prices. Grafted Apple, 45c. Budded Peach, 50c. Concord Grapes, 5c. Black Locust Seedlings \$1 per 1000.

Veneered Tree Protectors
Cheapest and Best Ever Made.
Millions in use everywhere. Send for testimonials and full description—1c each; 1,000 for \$8. Will last for years.
Hart Pioneer Nurseries, Fort Scott, Kansas

For nearly half a century
Ferry's Seeds
have been growing famous in every kind of soil, everywhere. Sold by all dealers. 1902 Seed Annual postpaid free to all applicants.
D. M. FERRY & CO., Detroit, Mich.

same width as the sides and long enough to fit snugly between the side pieces, place in the center and toe-nail the ends to the side pieces. The frames are covered with medium or heavyweight sheeting stretched tightly over the frames and tacked to outside edges. After this is done paint the cloth with two or three coats of the following mixture: Two thoroughly beaten eggs to a pint of raw linseed oil. When painting keep the mixture well stirred, and allow one coat to dry before applying another. Three, or even four coats of the paint are better than less, and frames thus covered will stand almost any amount of rain, and transmission of heat will be found ample for ordinary weather. These frames being very light, should be fastened to the bed by means of screw-eye and hook at each end. They can, of course, be made any length, to fit any width of bed, but should be three feet in width, as yard-wide sheeting will stretch sufficiently to lap over the edges of the frame. These frames will repay many times their cost if used for no other purpose than hardening off plants; and for growing lettuce and cabbage plants they are far and away superior to glass, as the heat is less fierce. A writer in the South complained of much annoyance by the sagging of the cloth, but finally overcame the difficulty by covering first with poultry wire (presumably of fine mesh) then with the cloth. Our experience has been that when the cloth was tightly stretched and thoroughly painted with the eggs and oil there was no trouble with the sagging, while unpainted cloth loosely put on would invariably cause no end

(Continued on page 11.)

The Young Folks.

NEW YEAR'S BELLS.

Ring out, wild bells, to the wild sky,
The flying cloud, the frosty light;
The year is dying in the night;
Ring out, wild bells, and let him die.

Ring out the old, ring in the new,
Ring, happy bells, across the snow;
The year is going, let him go;
Ring out the false, ring in the true.

Ring out the grief that saps the mind,
For those that here we see no more;
Ring out the feud of rich and poor,
Ring in redress to all mankind.

Ring out a slowly dying cause,
And ancient forms of party strife;
Ring in the nobler modes of life,
With sweeter manners, purer laws.

Ring out the want, the care, the sin,
The faithless coldness of the times;
Ring out, ring out my mournful rhymes,
But ring a fuller minstrel in.

Ring out false pride in place and blood,
The civic slander and the spite;
Ring in the love of truth and right,
Ring in the common love of good.

Ring out old shapes of foul disease;
Ring out the narrowing lust of gold;
Ring out the thousand wars of old,
Ring in the thousand years of peace.

Ring in the valiant man and free,
The larger heart, the kindlier hand;
Ring out the darkness of the land,
Ring in the Christ that is to be.

—Alfred Tennyson.

ANIMAL INTELLIGENCE.

The Gleaner.

A friend told me this story of his dog, Sancho. My friend and Sancho were in a field from which the corn had been shucked, and he noticed the dog looking carefully at each corn stalk.

Occasionally he would find an ear of corn that had been missed, when he would stand on his hind legs and hold the stalk steady with his fore paws, and catching the ear in his mouth he would twist it off the stalk.

This accomplished he would lie on the ground with the ear of corn between his paws and contentedly munch the kernels.

JESSIE E. ADAMS.

Iola, Allen County.

A True Guinea Story.

When Mr. Guinea's mate had completed her number of eggs in her cozy nest and commenced to set, Mr. G. made a nest by her side and there he sat every night for five weeks to keep her company and protect her from harm, while during the day he went about with the other fowls. When she came off for food he would go on her nest and keep the eggs warm, and when the cute little brownies came out he assumed his full share of the care of them.

This same guinea was also a peace officer, as he would not allow any fighting among the other fowls. When he commanded peace woe to the one who refused to obey, for he was a strong and active bird, with a sharp beak.

At one time when our rooster and one belonging to our neighbor was fighting out in the road, Mr. Guinea came on the ground and proceeded to part them, driving the other home, then bringing ours in, never stopping until he was in the barn, then he went on chattering, seeming to say, "No more such disgraceful conduct on these premises." Would you call this intelligence?

A READER.

A Fine Gelding.

Two years ago at fifteen years of age, I broke to saddle a handsome chestnut gelding purchased by my older brother for a combination horse, that is, one to ride and drive nicely. Being raised on a farm and having the opportunity to see many different kinds of stock, I have not yet seen any animal that possessed more intelligence than he does. Besides his intelligence and fine form, he is spirited enough, and at the same time is so tractable that at the slightest touch of the rein he will obey. He walks, trots, canters, paces and single-foots as nice and fast I think as any of the horses that are exhibited in the show rings, and will eat an apple from a lady's hand very neatly and enjoys music and being petted very much. His name is Lieutenant Pike.

Faithful Animals.

Living on a farm, I have some knowledge of animals in general; but those foremost in intelligence must certainly be the horse and dog.

At one time, on our farm, we had a very deep well. We were in the habit of drawing water with one of the

horses, and in a short time he was so trained that we needed only to hitch him to the end of the rope and he would go the full length of the rope, stand quietly, and then come back.

We have a dog that knew his name before he was two weeks old. When he grew older, we were away from home one day, and as usual the dog was faithful to his duty and stayed to watch the house. One of our neighbors came with a letter for us; and finding us away, thought to lay the letter inside. But when he went to go inside, he changed his mind; the dog flew to the door, and bracing himself against it showed his teeth in rather an unpleasant fashion. Our neighbor decided to leave the house alone.

ADA VROOMAN.

Hope, Dickinson County.

Wonderful Intelligence of a Bird.

About nineteen years ago my father was riding horseback, when a little bird, one of the ground sparrows, common to the prairies of Kansas, came and circled above his head, uttering piteous cries, then flew to the roadside. These strange actions were repeated the second and third times, when he turned and followed it, the bird flying ahead a few feet at a time, till he had followed it about a hundred yards, when it fluttered close above a snake, which had a bloody head, as though the bird had been fighting it. Having no whip my father killed the snake with his bootheel, the bird sitting on the ground five or six feet distant watching the performance, after which it again circled above his head, but uttering cries of unmistakable joy, and flew away.

Now, do you call this instinct or reason, or did the bird know that there is enmity between mankind and the devil's representative? See Genesis 3:15.

Clever Horses.

I have been very much interested in the stories of animal sagacity and intelligence or affection. Of all the lower animals it always seemed to me the horse came the nearest to having intelligence. I always loved the horses when at home on the farm. Two of them were my special pets and pride. One a small sorrel mare with no attraction except her great affection for the one who used her kindly. I often took long rides on her. Stopping at the farm-houses she was given her freedom till I was ready to go. Once was Nellie gone, and calling her by name I was answered by a low whinny. Some of the family seeing her loose tied her in a lot near by. One summer when teaching some distance from home I rode Nellie to and from school, tying her some distance from the house during school hours, allowing her to eat grass during the noon hour. One day she was forgotten; school was called to order and everything was progressing nicely when a smothered titter and a darkened window caused me to look around. There was Nellie's head thrust through an open window close by my desk.

The other pet was a large bay mare we raised from a colt. Although she was nervous and high strung, she did not seem so affectionate as the pony, yet she was gentle and sensible, almost human in understanding. When lead up to the block to mount, if not quite close enough I would say, "Step a little closer, Fanny." She would step quickly to the right place. When riding or driving there was no use for the whip and not often the reins.

I could talk to her and she would obey every command. "Step faster."



It Doesn't Scare Folks
to be told the truth about

Lion Coffee

The scare-crow coffees are those that hide under a glazing of factory eggs, glue and such stuff.

Lion Coffee is pure, wholesome, unglazed, rich in flavor and uniform in strength. The air-tight, sealed package insures cleanliness, freshness and uniformity.

All the world's a stage. Elgin
Watches are the prompters.

Elgin Watches

are the world's standard for pocket time-pieces. Sold by every jeweler in the land; guaranteed by the world's greatest watch works. Booklet free.

ELGIN NATIONAL WATCH CO.

ELGIN, ILLINOIS.

"Steady, now." "Go slow." "Take the other side," was my way to control her, but no one else could make her obey so well.

With me she would travel very easily, while others said she was the hardest animal on the place to ride.

When I went to my new home Fanny went with me. When children came to our home they early learned to ride and drive Fanny as their mother did, while the neighbors wondered that they could control her as she went prancing by. Dear old comrade, he was to me on many long, lonesome rides.

We have now a pony that loves to have the little colts come and eat with him and seems to think as much of them as their own mother. He also has shown a preference for our baby who likes to pat his head. When the pony sees baby in his buggy at the gate he always comes and puts his head down for baby to pat. The other children have some trouble to catch him when in the pasture, but they overcame that difficulty by taking the babe to the gate, when Dandy would walk up to the gate and stand quietly while being altered.

A. C. B.

Intelligence of Our Driving Horse.

Our driving horse, whose name is Bert, is very intelligent.

We girls always hitch him up and unhitch him. When he is in the pasture we can go up and catch him anywhere in the pasture. Last winter my brother was teaching school seven miles north of our home.

He would ride Bert nearly into town, turn him loose, let him come home, and he would walk the rest of the way to his school.

One morning he rode him to town, turned him loose and told him to go home. He started off down the street, my brother watched him, he went towards home a little while, then turned down another street and walked up to the door of the livery barn and tried to get in. My brother had to get him and ride him on to his school. It was rather cold and I suppose Bert thought he would not come home.

He will push on the barn doors and he can open any of them.

When he is turned in the pasture, unless the gates are tied, if he wants to come to the barn he will put his foot on the bottom wire of the gate, and lift the upper wire up with his teeth and come out. If it is a board gate he will push it open with his head.

If we laugh at him it makes him very mad and he will try to bite us.

My sister lives south of us and when we go south he always wants to turn in at her gate.

I ride him to school sometimes and he always will come right home as soon as I turn him loose. He can get his bridle or halter off whenever he wants to. He is very playful but I do not call him mean. He reminds me of a mischievous boy.

LEOTA MAXWELL.

Valley Falls, Jefferson County.

Many years ago two other men and myself were standing in the bottom of one of those deep hollows characteristic of the north part of Jewell County, Kansas. A greyhound in the neighborhood noted for his speed and dexterity in the jackrabbit chase, came suddenly down the west hill but a few rods behind a large rabbit, the one object of his pursuit. A fine-looking shepherd dog, belonging to one of the men, seeming to think it would be folly for him to join in the

chase, made up his mind instantly what would be the most satisfactory thing for him to do. Instead of following them he ran full speed to the top of the hill from which they came, and reaching the highest point turned round, pricked up his ears, and in the most intelligent of canine language said, "Seek him, Snoozer; my heart's in the work."

LEVI BOWLES.

Galena, Kans.

The following incident showing animal intelligence happened on my farm some two years ago. A heifer brought forth her first calf and while she seemed to think a great deal of the little fellow she would not allow him to suck. I then put a halter on her and compelled her to stand for him. This process was repeated several times, then I turned cow and calf out where I was feeding the balance of my cattle. About noon the cow came up to the fence and bawled to me several times. My wife and I went out where she was and again placed the halter on her and led to the calf, where she stood perfectly quiet while we had the halter on her; then to see what she would do I took the halter off and she would not stand on all. After that we had to

her every day with the halter and finally as the calf grew, he too seemed to know that he could not get his dinner unless we were there, and he would come to the fence with his mother and bawl until we came and caught the cow.

CLEM. M. HUBBARD.

Gate, Okla.

A Smart Dog.

I have a smart bird-dog named Sampson, because he was born on the day our ships sunk the Spanish ships.

He sets quails for papa, and I hunt rabbits with him. Papa hunts squirrels with him. He is a good smeller and can always tell if there is a squirrel up a tree.

A few days ago he found a big 'coon on a large limb in the top of a tall elm tree. Papa shot it and it weighed twenty-four pounds.

Sampson is the smartest dog we ever had and he is an honest dog, too.

ALBERT FRANKLIN YEAGER.

Bazaar, Chase County.

Prince.

Prince is a dog and the subject of my story. Our school children think a great deal of him for he lives close to the schoolhouse and comes down to visit them every day.

He makes his regular trip after the bell has rung for dinner, and then is when the boys and girls have their fun with him. He shakes hands with them, and will sit on a chair with his master's hat on, a pipe in his mouth and pretend to smoke—that is, if there is nothing in the pipe. Once the boys



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STANBERRY, MISSOURI.

put some tobacco in the pipe, lighted it and put it in his mouth. This made him angry and he gave a long, loud bark, jumped from the chair and ran under the teacher's desk.

He will come to the schoolhouse only at noon, for he has learned when dinner comes and knows he will get his share. The boys will hold a piece of bread in their hands and say, "Speak, Prince, speak," he begins to bark, and soon gets his bread.

Prince is getting old now, and has seen his best days, but nevertheless because of his intelligence his master will not part from him.

The Flood.

There was once a man who lived by a large river and owned a dog who had three little puppies. He built a kennel not far from the banks of the river and chained the mother dog to it. During the night it rained so hard that the river overflowed its banks and took with it the dog-house. The poor mother being chained could only climb on the roof of the house where she watched one puppy drowning, and she kept howling but could not go to assist it. Two little puppies were on the roof with her. How sad the poor dog must have felt to see and yet be unable to assist the little puppy struggling in the water. EDITH QUIGLY.

Blaine, Kans.

For the Little Ones

A BOY'S MOTHER.

My mother she's so good to me,
If I was good as I could be,
I couldn't be as good—no, sir!
Can't any boy be good as her!

She loves me when I'm glad or mad;
She loves me when I'm good or bad;
An', what's a funniest thing, she says
She loves me when she punishes.

I don't like her to punish me;
That don't hurt, but it hurts to see
Her cryin'—nen I cry; an' nen,
We both cry—an' be good again.

She loves me when she cuts and sews
My little cloak and Sunday clothes;
An' when my Pa comes home to tea,
She loves him 'most as much as me.

She laughs an' tells him all I tell;
She hugs an' hugs my Pa,
An' she loves him 'most as much as Ma.

Dahlia—A True Story.

One day on a western farm, a little fawn-colored calf was born. She was an awkward little thing, with very unsteady legs and an insatiable appetite. The children who named every living creature on the farm, called her "Dahlia." From her birth Dahlia was a favorite with every one. She was never confined to a pen but was allowed the freedom of the farm. She would come from any distance to the familiar feeding call, "Come, Dahlia, come a-running."

In the spring she was taken with the other cattle to a pasture some miles distant where a great herd was grazing. The children missed her greatly and there was sincere sorrow when some months later they received news of her death. In the fall they went to bring the cattle home and as one by one the cattle were recognized and driven out from the herd, various were the comments. "How well Mollie Cottontail is looking!" they cried. "How Sunflower has grown!" "How cunning the little new calves are!" Suddenly one of them exclaimed, "That looks like Dahlia!" "No," the owner of the pasture replied. "That is Mr. M—'s calf." But the children all were positive that it was Dahlia and no other. Then one of them began the old feeding call, "Come, Dahlia, come a-running." While the other cattle paid no heed, Dahlia—for it was she—threw up her head, lowed, and showed by every sign that she knew her old playmates. Her recognition of them was so unmistakable that they were permitted to take her home. The next day Mr. M— came to look at her and after examining her carefully, acknowledged that it was his calf that had died. And thus Dahlia was lost—and found.

That wheat was grown in Alaska by the Russians a century ago is proven by the discovery of two old flour mills built by the subjects of the czar. One of these has been discovered on Wood Island, in Southeastern Alaska, and the other in the interior. The former mill has just been investigated by R. B. Taylor, of the Smithsonian institution. He says the old flour mill was built by Russians early in the last century.

The Home Circle.

THE NEW YEAR.

The wave is breaking on the shore,
The Echo fading from the chime—
Again the shadow moveth o'er
The dial plate of time!
—Whittier.

We speak of a Merry Christmas,
And many a Happy New Year,
But each in his heart is thinking
Of those that are not here.
—Longfellow.

Enter upon thy paths, O year!
Thy paths, which all who breathe must tread,
Which lead the Living to the Dead,
I enter; for 't is my doom
To tread thy labyrinthine gloom;
To note who round me watch and wait;
To love a few; perhaps to hate;
And do all duties of my fate.
—Barry Cornwall.

Janus am I; oldest of the potentates!
Forward I look and backward, and below
I count—as god of avenues and gates—
The years that through my portals come and go,
I block the roads and drift the field with snow,
I chase the wild fowl from the frozen fen;
My frosts congeal the rivers in their flow,
My fires light up the hearths and hearts of men.
—Longfellow.

A Visit to Matanzas, Cuba's Largest City.

One of the greatest pleasures which awaits the tourist in Cuba is a trip to Matanzas, one of the largest cities in the island, outside of Havana, having a population of 45,282 in 1889. It can be made in a day, both ways, with several hours to spare, for sight-seeing, between the up and down trains, the distance between the two cities being but forty miles.

Five minutes for a hurried desayuno (bread and coffee), a volanta ride in the delicious morning air to the Muelle de Luz, whence the ferry-boat carries one across the beautiful bay, shimmering in the sunlight, to Regla, on its southeastern shore, a town of about 20,000 people, where there is the most substantial of railroad stations, like all those of the United Railways of Havana, built of stone; also numerous warehouses lining the shore, of the same material, with great shade, having corrugated iron roofs, covering the tracks in front, and we board the train for Matanzas, at five minutes to eight, and go whirling through the lovely country, past the pretty villages and towns, embowered in trees and vines—nine of them enroute—and arrive at Matanzas at 10:22.

A DREAM OF BEAUTY.

The country traversed is one dream of beauty, from first to last, diversified by hill and dale and running stream, with blue mountains in the far horizon, to the south and southeast ward. Natural and artificial groves of trees dot the landscape here, there and everywhere, the most prominent being the graceful palms which line the roadways and crown the hills and gather in groups along the margins of the fields—the royal palm, the coconut palm, and the sage palm, with its peculiar trunk, which swells in ever-broadening curves for a certain distance, and then diminishes much more slowly toward the top, instead of maintaining a uniform and evenly graduated slope all of the way up, like other trees of the same family. In other words, it bulges quite abruptly and then contracts by slow degrees, the greatest bulge being nearer the root than the branches. I called the attention of some fellow-travelers from New Orleans, who were on board the same train with me, to these facts, and reminded them that their idea that these trees were simply deformed specimens of the royal palm was erroneous and that the writer was correct in assuming that they were of a distinct species by themselves, as she afterward verified. They are as regular and complete in their development as their royal kin, but the plan of their unfolding is different. They are not stunted and deformed growths—the humpbacks of the vegetable world, so to speak—but as perfect in their generation as any of the rest of their kind.

These American gentlemen were on their way to inspect the great forests of hardwood timber in which the interior of the island, in the eastern province, is said to abound, and there are numerous other Americans in Cuba on the same errand, as well as exploring the vast mineral and other resources, which Sir William Van Horne's new railroad, the Cuban Central, will soon open up to the outside world.

Ask Your Neighbor



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"If you think the country between Havana and Matanzas beautiful," said Mr. Farquer, Sir William's assistant, "what would you think of the country farther east? This stretch of country is the poorest on the island. The scenery and resources of the eastern half are grand in comparison." This is the loveliest country I ever saw. What remains to be seen must, indeed, be a paradise, if his statements be true.

THE NEW RAILROAD.

This new railroad extends from Santiago, on the southeastern shore, in a northwesterly direction, for a distance of about 600 miles, through the central portion of the island, to the city of Santa Clara, the eastern terminus of the existing system of railways in the island, less than 150 miles from Havana.

It will be completed by September but will not probably be in full operation before the close of the rainy season, the last of October. The so-called "rainy season" here extends from about the middle of May till the first of November, except during the months of July and August, which are comparatively dry; that is, there is "the early and later rain." It has rained but once—that a smart shower only—since my arrival here.

The island is continually fanned by ocean breezes, so that the heat is never excessive, seldom rising to 90 degrees in summer, or falling so low as 50 degrees in winter. Frost is unknown.

SUGAR AND CATTLE.

Sugar and cattle are the chief products of the section of country between Havana and Matanzas; but by far the greater part of the country does not seem to be under cultivation at all, having been devastated by the war, and buildings and fences destroyed, which the people are too impoverished to replace. Here and there are good haciendas in ruin, the wrecks of sugar mills and residences alone remaining to show where were once the homes of wealth and luxury. Like the French revolution, the wholesale destruction may result in giving the masses of the people a chance, through breaking up the great landed estates into smaller holdings, where those who were formerly virtual, or (at no very remote period) actual, slaves, may establish self-supporting homes for themselves. It is their only showing, as there is practically no government land in Cuba. Thus, as ever, does seeming evil evolve into ultimate good.

Amid the general devastation—not desolation, for, even though laid waste so far as man's so-called improvements are concerned, which are sometimes disfigurements instead—there are, here and there, extensive fields of sugar cane, and little narrow gauge railroads running hither and yonder through the fields, with their tiny engines hauling cars loaded with cane to the sugar mills which are still standing.

HOMES OF THE CUBANS.

The homes of Cubans seldom escaped the torch. There is one notable exception, near the station at Aguacate, where one of the largest haciendas in the country is visible from the train, with its great sugar mill, and tenant village adjoining, and its beautiful residence, embossed in a large grove of superb trees in the midst of thousands of acres of waving cane.

The owner and his two daughters, all in deep mourning, and all unmistakably Cubans, as shown by their dark complexions, were on the train. Their carriage awaited them at the station and bore them away down the beautiful palm-lined avenue to their magnificent home.

CUBANS AND SPANIARDS.

The Cubans are of mixed blood, Spanish and that of the native Indians, none of the latter now remaining on the island, I am told; that is, the native element has been absorbed and blended with the white race. There is every degree of amalgamation, as well as between whites and negroes. The mixed bloods, as a rule, however, no matter how small the admixture of the native element, are of a darker complexion than the Spaniards. The distinctive appellation of "Cuban," as understood here, applies to the mixed bloods in contradistinction to those of pure Spanish blood. The latter, even though their families may have lived here for generations, still call themselves Spaniards.

There is the same jealousy and hostility between the Cubans and those who have maintained the purity of their Spanish blood unadulterated that exists in Mexico between the Mexicans (Meztizos) and those of pure Spanish blood, largely due here as there to political causes. The Spaniard is identified in the minds of the Cubans with the oppressors of the masses of the people, whether he is in full sympathy with the former Spanish government or in favor of autonomy under the suzerainty of Spain, in one of which two classes all the Spaniards in Cuba may be grouped. The Cubans were for independence to a man, and would accept nothing else.

The Spaniard, on the other hand, looks down on the Meztizo, or mixed blood—the "Cuban"—despises and hates him, considering him unworthy of association or confidence. The Cubans are "on top" now, however, and the Spaniards "have to be good boys," as one Cuban gentleman expressed it to me. From policy and business considerations they are putting as good a face as they can on the situation, and making the best of it.

At Matanzas is another large and substantial station-house, built of brick, reminding one of European railway stations in the solidity of its construction and the extensive covered and asphalted raised platforms adjoining. Indeed, the entire equipment and bed of the road maintains the same general standard of excellence which is the characteristic of European railways.

There is an excellent eating house at the station, where the train stops for breakfast, almuerzo, which the Cubans always take late, desayuno preparing them for a long fast. After a sumptuous repast of fish, flesh and fowl, to say nothing of an abundant supply of all the fruits of the tropics now in season, for which an American dollar is not too big a tariff, I wended my way to the Hotel Paris, three or four blocks distant, it being sufficient recommendation to know that it was kept by Senor Don Lorenzo Zapala, the same host who runs the railway eating house. It is a gem of a hotel of its kind, with its open, central court and pleasant rooms grouped about it.

SIGHTSEEING.

Here I engaged a volanta with a driver who could neither speak nor understand a word of English to go sightseeing. Through the pretty town, still beautiful notwithstanding the ravages of war, which destroyed some of its most attractive residences, over one of the fine masonry bridges which crosses the Matanzas river, up some steep streets commanding a view of the incomparable bay, with its blue-black waters, we journeyed to the Montserrat Church, on a hill overlooking the Yumuri valley, which lay spread out—a great oval basin hundreds of feet below us, a beautiful panorama of green fields and groves of tropical trees, with toy houses and

orchards, as they looked to be in the distance, interspersed here and there, and the winding river and an eastern branch meandering in the midst, with the hilly background, now advancing, now retreating, walling it in on either side, with only one narrow outlet toward the sea, where the river valley debouches upon the plain on which a portion of the city is built.

It seemed a modern version of Ras-selas' "Happy Valley," where one might live "the world forgetting, by the world forgot," in blissful oblivion of the toll and turmoil of the common lot outside, and count "the world well lost" amid nature's largess of singing birds and ripening fruits and blooming flowers. It is said that Humboldt pronounced this the most beautiful valley in the world. Humboldt has been made responsible for establishing the reputation of many beauty spots in this and other lands. He certainly had an eye for the beautiful, and was an extensive traveler, and I am sure might well have said that if he did not of this gem of a valley in this gem of an island. If there is anything more beautiful of its kind anywhere I have never seen it.

The church itself is an ancient structure, but modern compared with many in Havana, being only about sixty years old. There are many votive offerings inside, made by those who have been cured of maladies by our Lady of Montserrat; that is, by their own faith, and a painting, a copy of one of Murillo's Holy Families, which my driver and guide—one and the same individual—tried to make me think original, but I hadn't sufficient faith to accept this tale as true.

Underneath the church is a large cistern, or reservoir, extending under the entire structure, for the storage of rain water, where one gets the most remarkable echo from calling down into the vault.

There is a beautiful specimen of the Pride of India, or Indian laurel, in the yard about the church, under whose spreading branches I sat down for a rest, where my Jehu repeated a story in pantomime, which he had attempted to tell me coming up the hill, about a lady who had lived in one of the fine residences we were passing, standing in the midst of beautiful grounds, but failed to make me understand. First he went through the motions of striking a match, holding it behind his hand, close to his mouth, and beginning to puff. I understood this; she had lighted a cigarette. He then threw down the imaginary match, which, it seems, was still lighted and set her dress on fire. He showed with motions of her hands how the flames rose about her and then laid his head over on one side, resting it on his hands and closing his eyes. She was dead—muerta. The sad little drama was closed. He had made it plain to me now, and I looked at the beautiful home where it had been enacted with greater interest as we passed it on our return to the city.

This time we diverged from our former route, crossing the Yumuri river on another fine bridge of arched masonry, and following a beautiful tree-lined boulevard, widening out here and there into glorietas (little circular parks), the last of which contained a fine monument erected to Cuban heroes, from the base of which I gathered a sprig of old-fashioned, away-down-East "Old Man," and finally brought up at Fort San Severino. This is another fine old mediæval fortification, like those at Havana, and equally useless for purposes of modern defense, which has, however, seen many a hotly contested battle in the past.

This is on the seashore commanding the beautiful bay, in which steamers are coming and going, this being one of the most important ports in Cuba for the coasting trade, as well as for foreign commerce. It is the Cuban terminus of the Munson Line of steamships plying between New York and Cuba.

Another of the great sights accessible from Matanzas is the Bellamar Caves, a few miles distant; but, as it would require another day's stay for me to visit them, which would prevent my making my steamer connection at Key West for New York, I was obliged

"C" With a Tail.

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to defer this trip until some future visit to Cuba, which I hope will not be in the very far distant future. I have seen enough of this lovely country, which opens up more and more beautiful prospects at every turn.

Back to the hotel, with some iced drinks of the country, including pineapple juice (a great digestive, by the way), in the patio; then again the volants in the flying trip to the station, where I take the incoming train from Josellanos for Havana.

It was near Josellanos that the revolution began. From the same point the railroad branches to Cardenas, another seaport, off which there was a smart sea fight during the war, between Spanish and American gunboats, the Winslow (American) losing more than half of its enrollment there.

THE BISHOP.

While waiting at the station at Matanzas for the arrival of the train, I noticed amongst others a Catholic padre, walking up and down the platform in a long cassock with a little cape about his shoulders and wearing a low-crowned, broad-brimmed, black felt hat. I was impressed by his benign countenance and his peculiar gait, so much like that of a woman. The next day I saw him in a carriage in Havana with a gorgeous green and gold mantle about his shoulders, and an equally gorgeous chapeau upon his head, and was told that he was the bishop of the diocese.

One thing which strikes me favorably about the operating of the railway trains here is that more time is allowed at stations than is common in the United States, doing away with the necessity of so much rushing and pushing and jostling, as is common in our own dear land, which, notwithstanding its manifold and manifest advantages and superiorities in many ways has still something to learn from other countries.

PASSENGERS AND SERVANTS.

The passengers came pouring into the car at Matanzas, many of them followed by servants, carrying no end of hand luggage, which they had ample time to stow away in the space beneath the seats, or the racks above, or in odd corners, anywhere, and to come and go several times to see that everything was right, while venders of various kinds brought drinks, both hot and cold, fruits and other refreshments to the through passengers, returing again and again for cups, glasses, etc. At length the bell rang; there was a general scurrying among the colored gentry to get off the train; the passengers bowed and waived their handkerchiefs and kissed their hands out of the windows to friends they were leaving behind them, and the train moved on as though on a triumphal progress through the land, with a similar scene enacted at every station, where it was welcomed by eager crowds and followed by their benedictions as it departed.

Notwithstanding the high rates prevailing for passengers as compared with fares in the United States, a great many people seem to travel in Cuba, the train being more than full of passengers, both going and coming; that is, all seats were filled and many standing in the aisles.

I reached Regla at about 6 o'clock, again crossing the ferry and taking a trolley car for Le Grand Passage. I knew where to alight from the fragments of the old city wall, in a little park, back of the hotel, across which I make my way and through the big arcade which pierces the building from back to front, with shops on one side and the great dining room of the hotel on the other, where a fine dinner once more awaits me, with its savory viands, which reminds me of Mexico and of Paris.—Caroline Westcott Romney, in States.

Never Fails.

Super—I have seen a white horse where there wasn't a red-haired girl within five miles.

Burger—But you have never seen a docked-tail horse where there was not an idiot less than five feet behind the animal.—Puck.

Merited Rebuke.

Saymold Storey—"Say, pard—" Goodman Gonrong (looking cautiously around)—"Ye blamed fool, hain't ye got no more sense than to talk to a deaf an' dumb man?"

The moral of the hare and tortoise is all right for a moral, but in a race with a greyhound, it would pay to be a jack rabbit.

The Family Friend

An old and true friend that will help you in times of distress. When racked with pain you would give anything for relief. In the hour when the little child, too young to make its wants known, lies suffering, its little face drawn with agony; in the hour when the good wife, worn and tired, needs an arm to lean on; at all such times, when the calling of a doctor means a dangerous delay, besides great suffering and a heavy bill, there is nothing else so good as a bottle of

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CLARA CITY, Minn., June 14, 1901. We had five children sick with diphtheria last winter and carried them all through in one week without any doctor. Watkins' Vegetable Anodyne Liniment should be used at once as soon as any symptoms appear. We mixed two teaspoonfuls of Watkins' Liniment with two of vinegar and one of salt. Gave some of the mixture once an hour, also rubbed the Liniment on outside of neck. OTTO PETER.

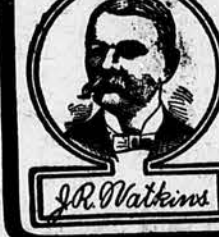
HORSES WOULD HAVE DIED.

SHIPSHAWANA, Ind., June 18, 1901. I have used Watkins' Vegetable Anodyne Liniment for nine years and find it the best remedy for colic in horses I ever knew. I saved two horses with it that would have died. Cannot speak highly enough of it. HENRY CATTON.

The best thing made for Cholera Morbus, diarrhea, flux, rheumatism, cuts, cramps, strains, burns, colic, mumps, sore throat, diphtheria, frosted limbs, etc. For horses and cattle it cures sprains, cuts, scratches, bruises, swellings, colic, etc. Of course when you read this advertisement you may not feel the need, but the need of it may arise at any moment of the day or night, and then its worth can not be counted in dollars and cents. Order it the next time our agent calls, or if we have no agent in your county, send us your name and address at once, and we will see that you are supplied.

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Hotbeds and Cold-Frames.

(Continued from page 8.)

of trouble. Some writers on the subject are prone to belittle the usefulness of the cloth-covered sash, evidently forgetting that many can not afford the outlay necessary for the glass, to say nothing of the greenhouse. Could we all afford greenhouses there would be little need for hotbeds of any kind; since we can not all afford the greenhouse, nor yet the glass-filled sash, it is fortunate that the cloth covers are available and ordinarily will take the place of the glass very nicely. The hotbeds should if possible face the south, and be sheltered on the north and west by buildings or other protection.

PREPARATION OF THE BED.

A few days previous to sowing the beds they should be filled to within eight inches of the top with manure, thoroughly tramped in, and at the same time be packed with manure on the outside. The amount used on the outside, of course, depends on the time of year, late winter and early spring work requiring a larger quantity than later work. In filling in the manure, it is always well to keep as nearly as possible the same slant as the cover will have when placed on the frame. After packing outside and in with the manure place the sash on until the heat is well started. If too slow in starting, pour in a few pailfuls of boiling water to hasten the heating, and when well under way put on the soil to the depth of four inches. The bed should be well aired occasionally to allow the first rank heat to pass off before the seed is sown. Four or five days will not be too many, and by this time many weed seeds will have started which will be destroyed by the raking necessary for preparing the seed bed. By careful attention to the above directions any boy or man can make a hotbed and the end will amply justify the means.

Michigan. J. E. MORSE.

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ECONOMICAL RATIONS FOR FINISHING HOGS.

(Continued from page 1.)

mind of the man who thinks he never will believe hay a good feed for a hog. It will be observed that, confining ourselves to the feeds named, no balanced ration can be prepared without the use of corn.

No argument is needed to show any farmer who is interested enough to have followed this discussion that a ration to be economical should contain the nutrients the animal needs in the proportions in which he needs them, or in other words the economical ration should be a balanced ration. It may be worth while, however, to examine this branch of the subject with a little care. These hogs require, as shown by the most careful tests, 19 pounds of digestible carbonaceous matter per day. Now a pound of average, dent corn contains 0.764 of a pound of digestible carbonaceous matter. The hogs can therefore get the required amount of carbonaceous matter by eating $19 \div 0.764 = 24.86$ pounds of corn costing 15.54 cents.

If now this corn but contained also the required quantity of protein, the corn ration would be almost the cheapest in the list. But these hogs required each day 2.7 pounds of protein. Each pound of average corn contains 0.078 of a pound of protein, and the proposed corn ration would furnish but $24.86 \times 0.078 = 1.84$ pounds—nearly a pound too little. The hogs fed this deficient ration will not thrive and grow as they ought. They will require rings in their noses and will always appear to want something.

If we give them corn enough to supply the required amount of protein, allowing them to waste the excess of carbonaceous matter, the ration will not be an economical one. But let us see how extravagant it will be. The hogs require 2.7 pounds of protein. Each pound of corn contains 0.078 of a pound. The hogs can, therefore, get the required amount of protein by eating $2.7 \div 0.078 = 34.62$ pounds of corn, costing 21.6 cents.

This is not as expensive as the corn and oats ration. But there is a clear waste of $6\frac{1}{2}$ cents a day over the cost of the corn and alfalfa ration. Other comparisons will suggest themselves to the interested reader.

The editor hopes the correspondent whose letter called out this discussion and others as well will try some of the balanced rations here computed and report results for the benefit of the entire KANSAS FARMER family.

A STATE DAIRY COMMISSIONER.

For many years the State of Kansas has made annual appropriations for the maintenance of a State Horticultural Society and felt that the money was well invested. It has also supported a State Historical Society and has done well. Its appropriations for the support of the State Board of Agriculture have proved good investments. During all these years it has found the maintenance of these and other important State societies to be of vital importance to the State. During these years also the State has developed, and other and equally important interests have grown up and assumed such proportions that they now merit the attention of the State in the same manner. The State Dairy Association had its beginning fourteen years ago in the efforts of interested and wide-awake men to develop an important industry which would help to utilize the natural resources of the State and coin them into money. Through the influence of this association, and the agricultural press of the State, there has grown up a great dairy industry which takes rank among the foremost cash producing vocations for our people. The dairy business is one that has the merit of returning to the farmer a regular income at all seasons of the year. The grain farmer, the beef farmer, and the hog farmer, each meet seasons of the year when their surplus cash is invested in the growing crops or growing stock and in the employment of labor necessary to their care. The dairy farmer on the other hand has his product available for the market at all times and the cash returns available when other resources are not. Kansas, with her 800,000 milk cows, which are valued at \$24,000,000, has in the dairy industry one of the most important of the State. And it is but reasonable that this important interest should ask recognition at the hands of the State. The dairy business is but fairly begun. With her wonderful resources in feeds and pastures, Kansas has already made a record in beef

production that places her well in the front rank. She can do equally well in the dairy. In order to accomplish this the influence of the live stock and agricultural press, the experiments at the Agricultural College and the farmers' institutes held throughout the State are all powerful for good. One thing more is needed. Kansas should have a State dairy commissioner whose duties would include the inspection of products, the enforcing of dairy laws and the giving of instruction and demonstration at farmers' institutes and in the Agricultural College short courses. Iowa and Wisconsin are two States whose prominence as wealth producing States have been very materially aided by the maintenance of a dairy commission. So keen is the interest in the proposition to establish such a commission here that the effort to secure the passage of a bill during the next session of the legislature with this object in view seems to meet with general approval. The plan which is generally approved and which will be submitted for the consideration of the legislature is to establish a bureau in the department of agriculture which shall have the dairy commissioner at its head and which shall be under the supervision of the secretary of the State Board of Agriculture. As outlined some weeks ago in the KANSAS FARMER the plan will include the asking of a small appropriation for the pay of the dairy commissioner, the expenses of his office and the publication of his reports. The dairy commissioner to be named by the State Board of Agriculture and the work and expenditures of his department to be under the supervision of the secretary. The establishment of this commission and its maintenance can in no wise be thought of as an expense item to the State. It is simply an investment which will bring immense returns. In order to attain the best success our farmers are seriously in need of expert instruction in breeding for dairy type, in feeding for dairy produce and in the proper handling of the milk to obtain the best results. These interests have become very prominent in Kansas and it is the duty of the legislature to see that they are properly fostered.

ADVERTISING LIVE STOCK.

Prof. Thomas Shaw, whom everybody knows, has the following remarks to make in Class Advertising, which we most heartily commend to our readers:

"The idea that underlies any kind of advertising is, of course, to aid the successful sale of the article or articles so advertised. To make it effective there must be the medium in which to advertise effective statement in the advertisement and the constituency to be reached. To these conditions live stock advertising is no exception.

"It is not enough that a paper have a large circulation to make it an effective medium in advertising live stock. Even a farm paper may have a very large circulation and yet it may not reach a large number of that class of people who are likely to invest in pure-bred stock of any kind. It may circulate chiefly through that class that are not prepared to take this upward step from lack of instruction or for other reasons. Another paper with a smaller circulation may reach a large number of farmers so far advanced in their methods that they can easily be persuaded thus to improve their flocks and herds.

"The advertisement itself ought to have what may be termed effective statement in it. It is not enough to say that the advertiser has stock of a certain kind to sell. There may be a score of others who may have the same kind of stock for sale. If nothing more is stated than this bald fact, then the person who may want to purchase the said kind of stock is left to the dark as to the comparative merits of the stock of that particular breed which is thus advertised. But when something specific is stated, the would-be purchaser is given a clue that is likely to enable him to know what to do. For instance, if Shorthorns are advertised, something said about the breeding throws light upon the question, and so of any other particulars that may relate to age, sex, the number of animals to choose from, and any prizes which they may have won; whereas had only a bald statement been made that such an one at a certain place had Shorthorns for sale, the intending purchaser would have to write for such information, which is a tax on time that should not be necessary.

"Of course, to advertise stock effectively, numbers in circulation is

necessary, for no paper with a small circulation, especially if it has been established for many years, is likely to be of a character that makes it greatly to be desired by any class of farmers. It may be said of such a paper that it hasn't a constituency, and therefore, is not an adequate medium in which to advertise.

"Live stock advertisements may be divided into two classes. In one of these are permanent advertisements occupying space from the size of ordinary breeders' cards upwards. There should ordinarily be some relation between the size and quality of the stud, brand on flock advertised and the space occupied. Such advertisements give the fact of the breeder's residence the kind or kinds of stock which he has to sell, and, as stated before, they ought to give some specific fact or facts about the stock. It is also important that these advertisements shall be changed from time to time in their makeup. If they are not, the public is likely to lose interest in them because of their changeless character. If they have in them some distinctive illustration, as for instance the head or picture of an animal different from all others, the public comes to recognize it as a trade mark, hence it has the effect of quickly determining in the mind whose the advertisement is the moment the eye rests upon it. The changeless character of the advertisements of stock men is probably their greatest defect, and for this the advertisers themselves are wholly responsible.

"The second class of live stock advertisements may be termed transient. They are such as relate to some special offering. It may be dairy cows just come into milk, or young rams or bulls, or stallions. It is different from the permanent advertisement and in the judgment of the writer is more likely to be read than the permanent advertisement. When it has effected its purpose, it is taken out. The transient advertisement should not be too much cramped in space nor yet should unnecessary space be used. There is a relation between space occupied and the estimate which the reader puts upon the offerings referred to in the space so occupied.

"It is greatly important to live-stock advertisers that the stock advertised shall be so put before the public that no false impression will be made. An advertiser may possibly effect sales for a time through glowing advertisements, but the truth will come to the surface; so that where misrepresentation is indulged in, it will in the end react injuriously to the advertiser.

"It is very important that a due relation should exist between the amount of advertising on the part of stockmen to be advertised. To induce them to spend any considerable amount in advertising before they have any considerable amount of stock to advertise would be a mistake. The expense of such advertising without adequate returns would be likely to prejudice them against all advertising.

"The great sin of stockmen, however, is that they do not advertise enough. They are too prone to rely on old-time methods to sell their stock. These consist of such measures as telling their neighbors about them when they meet, showing a little at local shows, and having the county or local paper say a few things about them. These methods may have sufficed in former years but they will not now. The men who judiciously advertise good stock in the agricultural press will leave those in the race who do not, in spite of all the efforts which they put forth.

"Just a word about free advertising, that is to say the 'write-ups' that accompany advertising. This, for the advertiser, is excellent in a way, but it is easily overdone. The tendency to-day is to overdo it. In some papers the live-stock gossip is assuredly out of proportion to the advertising given. It is dry reading except to the comparatively limited number directly interested. Such gossip is excellent when briefly and concisely stated, but it tends to defeat its object when it goes into details so long that they can not but be wearisome."

"One step won't take you very far—
You've got to keep on walking;
One word won't tell folks who you are—
You've got to keep on talking.
"One inch won't make you very tall—
You've got to keep on growing;
One little ad won't do it all—
You've got to keep them going."
—The Implement and Vehicle News.

The serious disturbance caused in South America by the warlike demonstrations of Great Britain and Germany against Venezuela is likely to terminate in arbitration by the Hague

Peace Commission. This is a sort of international court created by joint action of the leading civilized nations. The reference of the troubles to this tribunal was brought about through the efforts of the United States. In response to President Roosevelt's urgent request that the differences be arbitrated before the Hague tribunal, both Great Britain and Germany proposed that President Roosevelt act as arbitrator. This proposition was satisfactory to Venezuela also. But the United States continued to urge the Hague tribunal as the proper court, and this country will be spared the embarrassing position which for a time seemed destined to be thrust upon her.

A BIG BUSY WEEK FOR STOCK-MEN.

The week of January 12-17, promises to be a busy and eventful week for stock-breeders generally. Beginning early Monday, January 12, the thirteenth annual meeting of the Kansas Improved Stock-Breeders' Association will be held at the council chamber in Topeka's new Auditorium. This will be a two days' session. Immediately following the State breeders' meeting the National Live Stock Association will hold its annual meeting at Kansas City, January 13-16. On January 16 and 17, the National Wool-Growers' Association will hold its annual meeting at Kansas City.

At the time of the National Live Stock Association at Kansas City there will occur a number of fine stock sales at the stock yards sale pavilion, as follows:

On January 13, will occur the auction sale of Thompson's Galloways, fifty-four head will be sold by I. B. & A. M. Thompson. On January 14 and 15, the annual auction sale of Armour-Funkhouser of 114 Herefords. On Friday, January 16, H. C. Duncan, Geo. Bothwell, and Jos. Duncan will sell 60 registered Shorthorns. With all these conventions and public sales there will be plenty doing, to say nothing of the private sales that will be made between individuals getting together on such occasions.

H. A. Heath, secretary of the Kansas Improved Stock-Breeders' Association, is receiving a very heavy correspondence from breeders and stockmen who expect to be at the State meeting and many of them indicate that they desire to meet breeders who have stock for sale so that in all probability the private transactions will aggregate large amounts. Everybody who expects to keep up with the rapid progress of the live-stock industry will make an effort to be present at the Kansas State meetings as well as the National at Kansas City.

The railroads have made low excursion rates for all of these live-stock events so that "whosoever will may come."

THE STATE HORTICULTURAL SOCIETY.

The thirty-sixth annual meeting of the Kansas State Horticultural Society began on Monday morning under the most favorable conditions. The delightful weather, the large crowd in attendance and the very satisfactory financial condition shown by Treasurer Holsinger's report give the old-time members ample reason for feeling good and is an earnest of a very successful meeting at this time. At the time of going to press considerable routine business had been transacted and a number of interesting papers presented. Among the latter was a lecture illustrated by the stereopticon and given by Prof. P. J. Parrott, of the Ohio Experiment Station on the codling moth, its life history and enemies. When it is remembered that Kansas stands fourth among the States of the Union in the number of apple trees growing within her borders, and when it is remembered that a half century ago she had no fruit trees whatever, and even at this time the great bulk of her orchards lie in the eastern half of the State, it will be seen that there is ample reason for both the past history and the present existence of a strong and vigorous State Horticultural Society. Much credit for the present efficiency of the State Horticultural Society is due to the ability of Judge Wellhouse, who has long been known as the owner of the largest apple orchard in the world and who has served this society for so many years as its president. It is to be hoped that at the forthcoming election of officers, which had not yet taken place at the time of our going to press, the members will see to it that efficiency and energy are first-class recommendations for any candidates and that the good of the society will

be their first consideration. There will be no fear of a lack of proper recognition on the part of the Legislature if our Senators and Representatives become satisfied that the money which they vote will be expended by efficient men for the advancement of the horticultural interests of Kansas.

New York, Pennsylvania, and Illinois are the only States in this Union which have more apple trees than has Kansas. Let us see to it that Kansas stands first.

KANSAS CORN-BREEDERS.

The second annual meeting of the Kansas State Corn-Breeders' Association will convene at the rooms of the State Board of Agriculture in the State House at 10:30 a. m., January 15, 1903. It is not desired that this association shall become numerically large. Candidates for membership will need the endorsement of some one now a member.

J. W. ROBISON, President.
E. B. COWGILL, Secretary.

The Kansas City Drovers' Telegram views with evident alarm the temerity of the Kansas people in undertaking to hold their regular annual meetings of the State Board of Agriculture and the Kansas Improved Stock-Breeders' Association during the same week when the National Live Stock Association is holding its annual meeting at Kansas City. The Telegram does not seem to remember that the annual meeting of the Kansas State Board of Agriculture is fixed by law and the State Breeders' some years ago joined with the State Board in occupying the entire week, while on the other hand the National Association could have varied its dates so as not to conflict with Kansas, if there was a mistake in the arrangement it is the fault of Kansas City and not of the State associations of Kansas. However, it is the intention of the Kansas Improved Stock-Breeders' Association to meet early Monday and get through with the session in time so that members who wish to take part in the more important part of the Kansas City program may not miss more than the first day of the Kansas City events. Under the circumstances, the only conflict of dates will be with the Kansas State Board of Agriculture. Those desiring to attend that meeting will be unable to attend the National at Kansas City.

During the Chicago Poultry Show, January 19 to 24, 1903, Commercial Poultry says: "We shall publish a daily edition of Commercial Poultry, and this we purpose making better than the editions we have published during the last two shows. During the week of the poultry show we shall also tender a banquet to the judges who place the awards on the birds in the show, and another banquet will be given to all winners of first prizes who exhibit three or more birds. With improved press facilities we shall also add to our artistic force and make Commercial Poultry still more distinctively the leader of the poultry press of the world from the artistic point of view. We shall continue to make our own style and not model after any other publications, and in all its departments make Commercial Poultry better and brighter than it ever has been, maintaining the place it has secured as the leader in circulation as well as literary excellence."

Proposed Duodecimal System of Weights and Measures.

The American Society of Mechanical Engineers has apparently not yet given up the idea of combating the introduction of the metric system into the United States. As a kind of compromise between the existing system and the metric, Prof. S. A. Reeve recently proposed before the society a duodecimal system, which takes as its standard the English yard. Upon the yard a system is to be reared, exactly as a system has been built up upon the meter. The divisions, however, are duodecimal to suit the duodecimal numbers. It is claimed that small units of length will be obtained which are exactly equal to those now in use in machine-shops. A unit of volume will be obtained corresponding with the meter, which unit is practically equal to the existing unit. This new pint, which is a cube measuring 3 inches on each edge, when filled with distilled water weighs within $2\frac{1}{2}$ per cent of the present standard pound.

The standard yard multiplied by 1,000 (which is the duodecimal expression for 1,728 decimal) very closely equals the statute mile. Prof. Reeve believes that this new system of units is as beautifully correlated as are the measurements of the metric system.

So far as the influence of the pro-

posed change on coinage is concerned, Prof. Reeve states that if the arithmetical notation and the standard of weights and measures unite in becoming purely duodecimal in character, the monetary system is bound to follow. The standard of value, the dollar, and all its unit representations would remain unchanged. All bills of five dollars or higher denominations would naturally be called in, and their equivalent issued in denominations of three, six, dozen, gross, dollars, etc. The process could be as gradual as desired. Under duodecimal notation five and ten dollar bills would be inconvenient, but they would be usable. The half dollar and quarter dollar would remain unchanged. The dime, the nickel and the cent would have to be retired. In their place would be issued fractional currency under the following plan:

1 dollar=10 bits (one dozen bits of 8 $\frac{1}{2}$ cents value each).

1 bit=10 groats.

1 groat=10 grets (for purposes where the mill is now used).

The probable coins would be:

Silver half-dollar (=50 cents)=6 bits=60 groats.

Silver quarter (=25 cents)=3 bits=30 groats.

Silver bit (=8 $\frac{1}{2}$ cents)=1 bit=10 groats.

Nickel half-bit (=4-6 cents)=6 groats.

Copper quarter-bit piece (=2 $\frac{1}{2}$ cents)=3 groats.

Copper groat (=0.7083 cent).

Change for a quarter could ordinarily be had in a single convenient denomination, that is, in three silver bits, whereas now it requires two denominations, dimes and nickels, to make it. The practical objections to relying upon nickels alone for changing quarters are obvious. The progress of business toward finer margins and lower prices is steadily making the cent too large for many retail transactions. The smaller value of the groat meets this need.

The duodecimal system as proposed by Prof. Reeve, necessitates the introduction of two new numbers. They are inserted by him between the 9 and the 10 the first is a peculiar-looking combination of the figure 1 and the 0, and is called the dek; the second is like an inverted 3, and is called an eln. Thus when our decimal 10 is reached is signifies a dozen. Prof. Reeve has compiled some interesting new names for his duodecimal numbers, such as "dozone" (thirteen), "fitze" (five dozen), "twoz-nine" (two dozen and nine), etc. This, of course, brings in the use of the dek and eln, and he has "dedz" (dek dozen), etc.—Scientific American.

Imaginary Ills.

It is probably within bounds to say that a large proportion, if not fully one half, of the troubles which afflict mankind are wholly imaginary, or at least greatly exaggerated. A considerable part of every physician's practice consists in the treatment of minor ailments and of diseases which exist only in his patients' imagination.

If this were all, and the only result of too much introspection and notice of supposed symptoms were to increase the physician's income, there would not be so much to be said against it. But, unfortunately, imaginary diseases cause a great deal of suffering—as much as, if not more than, the real troubles of which they are the counterfeits.

There are few more wretched objects than the confirmed hypochondriac, whose days and nights are spent in counting his pulse, looking at his tongue, noticing every flutter of his chest or little shooting pains in his head, and reading medical books and the circulars of quacks.

Such a man is perhaps more to be pitied than the victim of fatal disease; for while he may live longer, his life is so barren of happiness as to be scarcely worth the living.

There is almost no disease which one who makes a constant study of every little unusual sensation can not imagine himself to have, but heart-disease is perhaps the one oftenest simulated. It is so easy to count the pulse and to imagine queer sensations in the chest, and the rhythm of the heartbeats changes under such slight provocation, especially if there is a little indigestion, that nothing is simpler than to imagine one's self the subject of some serious disease of this organ.

The habit is thus formed of watching one's symptoms; and once formed, it is most difficult to overcome.

The best protection against the acquiring of such a habit is education in childhood. Parents should never appear solicitous, nor take notice of

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W. W. VANSANT & SONS, Farragut, Iowa.

every little ache or pain with which a child runs to its mother. A sharp stitch in the side does not always mean pneumonia, nor a stomach-ache appendicitis, and children should be taught to disregard little discomforts. If a child is given a very light supper and put to bed when it complains, it will soon learn not to exaggerate small ills.

Real sickness usually makes its presence known by unmistakable signs, and there is slight danger that a manly disregard of minor ailments, and a refusal to be frightened by them, will lead to the neglect of any really serious trouble.—Youth's Companion.

What Wireless Telegraphy Is.

In order to follow intelligently the advance of wireless telegraphy from the beginning, some rough idea must be had of the modern physicist's view regarding the nature of electrical phenomena. To this end all space must be regarded as permeated by a something, termed the luminiferous ether. Not only does this ether permeate the spaces between the heavenly bodies and our atmosphere (which conception offers little difficulty to the lay mind), but it also permeates all solids. Further, its nature is such that the movement even of solids is not in the least restrained by such permeation, the closest analogy being that of a sieve, representing the solid, being moved about in water, representing the ether. The ether is the seat not only of all electrical phenomena, but also of all the phenomena of light and heat. All of these, apparently so distinct, are but the result of vibrations, or waves, on the ether, the apparent differences being due only to differences in the length of the waves and the rapidity with which they occur, just as one musical note differs from another in the same particulars, only that the sound-waves are air-waves and not ether-waves.

Now, with the usual telegraphic methods, the current, as it is termed, is sent or directed through space by means of a metallic conductor. Actually nothing passes through the wire, as is implied by the use of the word "current." What actually takes place is the transmission of energy along the path of the wire by means of vibrations in the neighboring ether. That is, the metal of the wire acts merely as a guide for the ether-waves to the destination desired.

In wireless telegraphy ether-vibrations are also set up at the transmitting-station, but these, having no conducting guide, radiate in all directions through space, and a small percentage of them arrives at the receiving-station, and by means of suitable apparatus are made appreciable by the senses, or recorded.—The Great Round World.

The Farmer the Country's Hope.

PRES. J. G. SCHURMAN, CORNELL UNIVERSITY.

"My own experience leads me to sympathize deeply with the farmer's life and work. My father and his ancestors for many generations were farmers. My own family are farmers. I was brought up on the farm and know the meaning and realities of farm life. I believe that the farmers are the backbone of the country, the

ICE CUTTING is easy with DORSEY All Steel, Double-Row ICE PLOW. Marks and cuts two rows at a time; cuts any size cake and any depth, and does it with ease and economy. Does the work of twenty men sawing by hand. Pays for itself in two days. No farmer, dairyman, hotel man or other can afford to be without it. Ask for catalogue and introductory prices. John Dorsch & Sons, 242 Wells St., Milwaukee, Wis.

most conservative class we have, the people of the solidest character. In the cities families go to seed in two or three generations, and the cities would go to destruction but for their continuous recuperation by the coming of young men and women from the farms. The hope of the United States, therefore, is in the farming population. In the education of the farmers I am vitally interested. I know that the organization of agricultural education is more difficult than the organization of engineering education and the mechanic arts. But progress has been made in the past, and I think the time is now ripe for a new departure. The farmer stands nearer than any other man to Nature's source of supply. His business can not be syndicated; the individual must always play the most prominent part in it. I suppose that is one reason why the proper provision for the education of young men and women for farm life is really so difficult."

Unselfish.

"I had a proposal last night and refused it."
"You are always thinking of the welfare of others, aren't you, dear?"—Ohio State Journal.

Marks made on the table by hot dishes should be rubbed with paraffin. This will also remove white marks from furniture and you can afterwards polish with beeswax and turpentine or with a good furniture cream.

It is a custom in the Belgian Parliament, when a member is making a long speech, to be supplied with brandy as a beverage, at the expense of the government.

When washing silk add a tablespoonful of methylated spirit to each gallon of rinsing water, and the silk will look bright and new.

Biggs—Say, can I sell you a good horse? "Diggs—Don't know. What is the matter with the animal?"—Chicago News.

If I Knew.

If I knew the box where the smiles are kept,
No matter how large the key
Or strong the bolt, I would try so hard—
I would open, I know, for me,
Then over the land and the sea, broadcast
I'd scatter the smiles to play,
That the children's faces might hold them fast
For many and many a day.
If I knew a box that was large enough
To hold all the frowns I meet,
I would like to gather them, every one,
From nursery, school and street;
Then, folding and holding, I'd pack them in,
And, turning the monster key,
I'd hire a giant to drop the box
To the depths of the deep, deep sea.
—Margaret E. Sangster.

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Miscellany.

English Blue-Grass.

EDITOR KANSAS FARMER:—I want in the spring to sow ten acres of grass for pasture. Can you recommend the English blue-grass? What is the proper time to sow? How much should be sown to the acre? How soon will it do to put cattle on it?

ARTHUR CHILD.

Industry, Clay County.

The best information we have about English blue-grass is found in the following remarks by John S. Gilmore, of Fredonia, Wilson County, before the Kansas State Board of Agriculture in 1900. Mr. Gilmore said:

"In offering, by request, some observations upon the above-named grass, of which but little is practically known by Kansas farmers outside of about a dozen counties in the eastern part of the State, I have based the same on personal experience for five or six years in its growth to the extent of from 50 to 250 acres, together with that of farmers in different counties who have been the most successful in producing it for fifteen years or longer. The statistical and other information given has been gained, not without difficulty, from what are deemed the most reliable sources and authorities available.

"This grass has a twofold value: for its seed crops and for pasturage—the relative importance of each being determined by the view and interest of the grower. In suitable soil and under normal weather conditions as to moisture, it grows luxuriantly, the blades being broad, tender, and nutritious, and springing up quickly after cropping by live stock (cattle, horses, or sheep.) It starts in the spring not less than a month before native prairie-grass, affording most excellent picking by March 20 to 30, and in an average Kansas fall will sustain and keep cattle fat from the first of September until in November—even up to December 1, some seasons. Its advantages for fall pasturage are distinctly its own, and farmers having it especially appreciate this fact. It is estimated that from 25 to 35 per cent of the English blue-grass acreage in Johnson County is used exclusively for pasturage, leaving 65 to 75 per cent from which a seed crop is first harvested in the latter part of June and in July, with pasturing following later; in some of the greater cattle counties, as Coffey and Greenwood, a larger proportion of the acreage is devoted to pasture alone.

VALUE AS A SEED CROP.

"The seed crop brings early cash, and it is for seed that the grass is chiefly grown in Kansas. It probably yields better in Johnson County than elsewhere. Its production began there in 1866, starting from a small patch sown with seed which came from the South, and it was by chance, some years later, that the identity of the grass and the value of its seed for export was ascertained by farmers of that county. S. H. Ayres, near Gardner, developed its profitability as a seed crop, and ultimately retired with a competency. Others quickly took it up, and seed houses stimulated its production by proposing and making contracts with farmers to pay them a stated price per pound, for a period of several years, for all the seed they could produce. Johnson County still leads other counties in the crop by considerable, but it is grown to a limited extent in Franklin, Douglas, Anderson, Miami, Bourbon, Wilson, Greenwood, Elk, Coffey, Lyon, and possibly a few other eastern counties. In the area south of the Kansas River and extending westward from the Missouri line about 100 miles, it has been tested and approved. North of the Kansas River and beyond the 100-mile limit, we have no information that this grass has had a trial, so can not speak for those sections. In the two tiers of Missouri counties adjoining Kansas, southward from the Missouri River, the soil and climate are friendly to the plant, and some seed is grown.

"The only other State producing seed for the open market is Kentucky, though a few years ago it has been said, but not verified, seed grown in Wisconsin was bought by a Kansas exporter. Kansas is believed to produce 75 per cent of the seed crop of this country, and at least 90 per cent of the total crop of the United States is sent abroad. With this proportion of it coming from Kansas soil,

we might, in the spirit of D. W. Willer, be pardoned for claiming meadow fescue as one of 'our things.' Denmark raises seed and sells to other European countries, also receiving from the United States; a portion of our surplus is shipped to Copenhagen. Germany also produces some seed, but not sufficient for her own necessities.

"The seed is sought at harvest-time, or soon thereafter, by wholesale seed houses in the West, either by letter or through representatives who personally visit the farmers to make purchasing contracts. The competition of the seed firms ordinarily induces the paying of prices to growers in line with conditions of supply and demand, but demand is the prerequisite factor. The annual foreign requirement is an uncertain quantity, hence varies. Home needs are not material in influencing prices. Formerly the Western men resold to Atlantic-board exporters, but they now sell direct to foreign importers. The seed goes to Germany, Denmark, the Netherlands, France, Holland, Great Britain, Australia, and some to Ireland, in all of which it is sown for pastures and meadows, mixed with other grasses. Germany is the largest taker.

EXTENT OF PRODUCTION.

"The largest crop of fescue in Kansas was harvested in 1896, when those most capable of correctly gauging put the crop at 140 car-loads, averaging 1,000 bushels of twenty-four pounds per bushel to the car, a total of 140,000 bushels; the smallest crop, not going back to the initial years of its production, was that of 1899, which amounted to about thirty cars. The highest general market price paid in any season for a number of years was 8 cents per pound, with not improbably a few instances when scattered lots were sold higher because of temporary exceptional influences. The lowest price of any season was 2¼ cents per pound, approaching the close of the year when the crop was the largest in the history of its production. Farmers received for last year's crop from 5¼ to 6¼ cents per pound.

"In the Kansas area where English blue-grass is known to be profitable for both seed and pasture, it thrives best on the richest and heaviest soils, although it is found principally on the slopes and uplands. On moist or wetish spots (not too wet) and on gumbo land the plant flourishes wonderfully, yields the heaviest, and holds on more tenaciously than anywhere else. On black limestone soil it does admirably, and generally on reddish soil the results are satisfactory. On any lands fairly adapted for corn (in eastern Kansas) it can be advantageously grown; but on light, whitish soil, it does not show strong vitality nor resist extreme dry weather, and is brief lived. After yielding seed to the maximum extent and making exuberant plant growth for three, four or five years, it decreases in yield and vigor generally, and farmers begin plowing up the old sod, usually following with a different crop; and the latter, by its liberal product, proves beneficial effects from the land having been in this grass. But some successful growers who are considerate of their fescue fields, keeping them free from noxious vegetation by mowing the latter before its seed ripens, by not overpasturing when too wet or cropping too short in a dry, hot time, and by going over the sod in the early spring, before the shoots get too much start, with a slanting-tooth harrow, report that this treatment perpetuates the vigor and thrift of the plant for some years longer and prevents material diminution of yield. The first three or four years, however, it gives the heaviest crops, which run from six to twelve bushels per acre, according to soil and season, though fifteen- and eighteen-bushel yields are not rare, and above twenty bushels per acre has been recorded in this State. Ample moisture in the spring season is helpful, while lessened rainfall, particularly in May and June, reduces the seed crop. But when it is the purpose to cut for seed the field should not be pastured in the spring.

PREPARATION OF THE GROUND.

"The ground should be plowed some time before seeding (as for wheat) that it may settle, but if freshly plowed can be improved by going over it with a float. The best State of tillth attainable is highly important. The nearer the ground can be made like a garden, and the more even and level before drilling in or sowing the

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The Greatest Variety of Crops,

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S. V. R. HAYES, Michigan Trust Bldg., Grand Rapids, Mich.

seed, the better. A majority favor drilling, but other very successful growers sow broadcast and harrow in lightly; and some fall-plant, while others prefer the spring for seeding. I favor the fall, if the ground can be prepared and rains sufficiently moisten the soil by September 1 to 15, but am aware that ample moisture can be expected in the spring, and, therefore, a good stand is surer. But a fall start brings a seed crop a year sooner, and the grass gets dominant in advance of noxious vegetation. It is not easily winter-killed if the fall is not unfavorable and the ground was early plowed. I do not like the hoe-drill so well as a shoe-drill, nor the eight-inch so well as the six-inch-apart drill rows, though some have used the former with satisfactory results.

SEEDING.

"The quantity of seed planted per acre varies from a peck to three pecks when producing seed is the paramount object, and from three pecks to a bushel and upwards when pasture alone is sought. A half-bushel per acre, when seed crops are the first consideration and it is drilled in, is enough on rightly prepared ground, for then every seed is covered; if showers follow harrowing in, almost every seed will sprout and take root. An inch is ample depth to drill, and, if the ground surface is uniformly leveled, scarcely any of the seed is put too deep. When harrowed in, the harrow should be set to run as for millet and similar light seed. The seed should be cleaned and freed from cheat and weed seed, if possible, before planting.

HARVESTING.

"Fescue is ready for cutting for seed right after wheat, with the self-binding harvester, and is shocked as are wheat and oats. The bundles are somewhat ragged in appearance and bulky at the butts because of the heavy blade growth, the straw of which is valuable winter feed for cattle. It is stacked or threshed out of the shock by the regular thresher men, and the cost per bushel ranges from the wheat charge to double the same, according to quantity. If sold, the seed is taken from the threshing-machine direct to the railroad, loaded in a car, in two-bushel bags, and shipped.

COMMENDS ITSELF TO KANSAS FARMERS.

"The points in favor of raising this grass in the portion of Kansas where it best thrives are several and substantial. It is not especially risky nor expensive for seed and labor to get a stand; the same implements and machinery used for the other crops are employed in its planting and harvesting; the seed is a fairly profitable crop in itself with a yield near the average, and at a price of from 3½ to 4 cents per pound; the straw after threshing (probably one-fourth of a ton per acre) leads all other straw for roughage, and stock clean it up with avidity; for pasturage it makes more feed than any other of the tame grasses (not including alfalfa), comes as early and lasts almost as late as any, and cattle thrive on it; it stands extreme cold and dry weather; it restores and improves the soil, and does not require, like most tame grasses, the best land on the farm for a stand and prosperous growth. An increased acreage for pasture would be beneficial to the live-stock interests, and should the seed price become too low

for profit it need not be harvested, and greater pasturing benefit could be derived, thus in large measure offsetting or equalizing the seed loss."

Prof. H. M. Cottrell, of the Kansas Agricultural College (120 miles west of the Missouri river), says: "English blue-grass has been grown in fields on the college farm since 1879, and has withstood all extremes of climate, except in the winter of 1885-'86, when all seedlings of this grass were killed. It suffers more than orchard-grass from dry weather, but it is not so coarse, and many farmers are using English blue-grass and clover for hay on account of its fine quality."

LaGrippe is a germ disease which makes a direct attack upon the nerves. When the fever runs high, the blood becomes thin and poor; it is filled with impurities from the wasting tissues and used up cells; the nerve force is reduced to the lowest ebb and the heart is strained to its utmost capacity to maintain the circulation.

The congestion of the minute blood vessels which follows the onslaught of grip germs brings an acute aching throughout the body, chilliness and fever, cough and sore throat and a general sense of weakness. It is this intolerable aching of the body in general and the sudden loss of strength which proves beyond a doubt that LaGrippe is a disease of the nerves.

Those persons with overworked or run-down nerves will have excruciating pains in the spinal column and unbearable headache, followed by utter inability to sleep, and brain fever or insanity. In nearly every case the heart action is affected, owing to the weakening of the heart muscles and the sudden withdrawal of the nerve force or vital power. Its weakened walls are dilated, its feverish valves are strained to the utmost capacity, it flutters, palpitates and skips beats. Pains shoot through the left breast and round under the shoulder blade. There is a choking sensation in the throat, a feeling of oppression in the chest and heart disease, with its long story of suffering and sorrow, has been ushered in.

Dr. Miles' Restorative Nerve will restore the appetite, bring sweet sleep, strengthen the weakened nerves and muscles, rebuild the wasted tissues, restore health and establish a reserve of nerve force which will successfully prevent the after effects of LaGrippe.


Should the heart at any time show signs of weakness, such as palpitation, fluttering or pain, or by shortness of breath, Dr. Miles' Heart Cure should be taken in conjunction with the Nerve.

Heart disease is curable. Send for free Book on Diseases of the Heart and Nerves.

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Grange Department.

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ndence for this department should be ad-
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With this number the editorship
the Grange department changes.
less many will regret the re-
ment of Worthy Master Westgate
this work. But it was realized
the State Grange that to ask this
of Mr. Westgate in addition to
other work he is doing for the or-
was an imposition. After can-
ing the matter carefully the State
ge selected Mr. Ed. Blair, of Cad-
as Mr. Westgate's successor.
following announcement from Mr.
gate reached this office too late
ast week's issue:

With this number we complete
duties as editor of the Grange de-
ment of the KANSAS FARMER. For
years the Patrons of Husbandry
e been represented by this de-
ment and its influence in extend-
a knowledge of Grange principles
purposes, and in calling the at-
tion of the public to the work of
order has been second to none.
those—alas, too few—who have as-
ed us in our work we tender our
arty appreciation.

Brother Ed. Blair will assume the
es connected with this work and
bespeak for him the hearty sup-
of every subordinate grange in
State. Brother Blair is a ready
er, thoroughly imbued with
nge principles, has long been an
cient worker in our cause and we
e and expect he will increase the
fulness of the department."

the KANSAS FARMER management
peaks for Mr. Blair the cordial sup-
of every granger in his work of
ducting the Grange department.—
FOR KANSAS FARMER.]

A Short History of Oak Grange.

ed at a session held on its twenty-
th anniversary by Mrs. Lina E.
ckman.

On November 11, 1873, twenty per-
s, eleven men and nine women,
together at Pleasant Grove school
se No. 33, now better known as the
namaker school, for the purpose of
anizing a Grange of the Patrons of
bandry. Promptly at eight o'clock
meeting was called to order and
Grange was duly organized, by Al-
us Palmer, then deputy for Shaw-
County. After those present had
en the obligation, we elected as our
ers for the ensuing year Bro. A.
Moore, Master, A. H. Buckman,
turer, and Bro. G. W. York, Secre-
r. Naming the Grange came next.
result of the ballot gave us the
d old name of "Oak," which we
retain although an effort was once
e to change it to Elm. We think
name emblematic of our Grange,
dy and true, and when we think
all the discouragements we have
and conquered we think we have
e well. At our next meeting we
se as the design for seal the
orn."

Starting with only twenty members
have had during the twenty-nine
rs a membership of four hundred
seventy-five. At the present time
y two charter members still retain
mbership with us. Brother and
er Higgins joined us the next
ing, and thus became the next old-
in point of membership. Some
e moved away, others have
pped their membership, some have
wered the last long roll call, and
e to join each other in that great
nge above.

arious business enterprises have
n undertaken by the membership
Shawnee County, but none of them
ved successful. In December, 1876,
changed our place of meeting to
Mission Center school house. At

this time Bro. H. Wallace was received
on dimitt. December 20 Bro. J. B.
Sims was received on State dimitt.
These two brothers formerly belonged
to Fremont Grange. To these two
brothers we owe much of our success.

In February, 1877, we were request-
ed to send delegates to a grasshopper
convention to be held in Topeka. Grass-
hoppers at that time received as much
attention as have the chinch bugs of
later years.

At this time our Grange, not being
in a very flourishing condition, a mo-
tion was made at the first meeting in
December, 1877, to surrender our char-
ter and abandon the organization, but
a majority of the members resolving
to be true to our name, did not think
it wise to give up all we had gained,
so with brave hearts and willing hands
we have continued the work begun so
long ago. At that time our member-
ship numbered fifteen. Surely this
Grange has been a power for good sec-
ond to no institution in this neighbor-
hood.

In March, 1882, the members planted
a grove of trees near the east gate of
the fair grounds. In December of the
same year, in order to arouse interest,
as well as to rid the country of a pest
at that time very numerous, we
planned a rat hunt. We were to
choose sides and the side bringing in
the most scalps to be the winners.
The side having the smallest number
was to furnish oysters for the Grange.
One side brought in 199, the other 47
scalps. So effectually did they clear
out this pest that for many years af-
terward we were not troubled with
rats to any great extent.

During February, 1879, having col-
lected a surplus of \$30 we loaned it to
a neighbor, receiving a little interest.
This small sum furnished the basis
from which our hall sprung.

In September, 1879, the members of
Oak Grange made their first display
of agricultural products at the State
fair held at Topeka, receiving first
premium. This grange made seven
exhibitions of agricultural products at
the different fairs held in Topeka, al-
ways receiving some premium and
several were first ones. In Septem-
ber, 1887, we received as premiums
\$360. Afterward we sold the exhibit
for \$103, making a total of \$463.

In March, 1883, in order to test new
varieties, the grange purchased seed-
potatoes for the members, giving as
premium for the largest yield in pro-
portion to seed planted, a \$3.00 pho-
tograph album. They also agreed to
return half of the crop raised to the
Grange. Bro. A. H. Buckman won the
prize.

At the regular meeting held March
1, 1882, was a very interesting event,
the marriage of two of our young
members, Bro. Will Firestone and Sis-
ter Belle Fisher. The ceremony was
performed by Squire Thomas White.
The happy couple received the con-
gratulations and good wishes of those
present, also a number of handsome
presents.

On October 1, 1884, Bro. A. H. Buck-
man moved that we proceed to build
a hall for the grange. The motion car-
ried, and a committee was appointed
to draft and present plans for the
hall. The plan was to build a hall two
stories high, fifty feet long and twen-
ty-four feet wide. October 8 we ac-
cepted the offer of Bro. J. B. Sims of
a lot on which to build the hall, the
conditions being that we set it out in
trees. The hall was built and we ded-
icated it on the afternoon and evening
of December 5. There was a lecture
on that day and evening open to all
patrons and their families, and a large
number were present. Our hall cost
\$1,200, the different members contrib-
uting generously to the fund.

In 1887, we built good, comfortable
sheds to protect our horses from the
cold. The sheds cost \$248.55. During
the year 1887, the secretary received
from all sources the sum of \$776, this
being the largest sum received by any
secretary except when building the
hall.

On January 19 and 20, 1887, we held
in our hall the first farmers' institute
ever held in Shawnee County. Since
then they have been held annually at
this place under the auspices of the
Grange.

I fear that not one of us realizes the
benefits we have received through our
connection with this noble order. The
questions that have been discussed
from time to time have been varied,
usually instructive and often amusing.
Partisan political discussions have
never found a place in our grange, al-
though questions of State and Nation-
al importance have been discussed
freely. In our literary work nothing



IN THE SPRING

The farmer's fancy turns to the tillage of his fields. A new plow will be the order of the day on at least 1,000,000 farms this year. One fourth of them will be *Modern, Up-to-date, High Grade, Standard*

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If you don't need a new plow, you may want a Deere Spike Tooth or Disc Harrow, a Deere Corn Planter or Cultivator. In any event write for the little booklet advertised in KANSAS FARMER.

DEERE & COMPANY, Moline, Ills.

personal or in any way degrading has
ever found a place with us.

As for back as 1885 the grange
worked to have United State senators
elected by the direct vote of the peo-
ple, and have been working at it even
since, without visible success, but it
will come.

We have discussed all sorts of ques-
tions—from raising crops, making
bread, free rural delivery, good roads,
etc.

During July, 1887, our library was
started, and from time to time we
have added to our books as we were
able, till now we have about 220
books. Besides we have made use of
the traveling library.

At every meeting our lecturer gives
out a program and members usually
respond. We have been very much
interested in the consolidation of
country schools, nearly all favoring
the plan.

On September 20 and 21, 1899, we
held a little fair of our own, of prod-
ucts of all kinds. While not as ex-
tensive as at our State fairs, in qual-
ity it would compare favorably with
those held at Topeka. We considered
the fair a success both financially and
and otherwise. The merchants and
leading men of Topeka treated us very
kindly by way of advertising in our
premium list.

For some time past the subject of
rural telephones has received much
attention and we are hoping to have
one in the near future.

Things for Patrons to Think About.

S. G. BAIRD, MASTER MINNESOTA STATE
GRANGE.

No patron can regularly attend the
meetings of the Grange without re-
ceiving intellectual benefit.

Patrons and farmers should remem-
ber that whatever injures the busi-
ness of one injures the business of all.

It is not good manners to talk shop
all the time you are in Grange meet-
ing.

Patrons, if you have been diligent
in your attendance at Grange meet-
ings measure yourself to-day by your-
self before you joined the Grange and
you will be better able to talk for
the good of the order.

A good patron exercises charity to-
ward all and malice toward none.

Do not sit up as a reprover of other
people and do not regard every one
as an ignoramus or a knave who does
not think as you do.

If you wish to gain knowledge keep
your eyes and ears open and your
mouth shut.

Remember there is a time to talk
and a time not to talk.

If you are wise you will never
trouble yourself trying to convince a
man who is set in his ways.

Keep in mind that the members of
the order are your brothers and sis-
ters, and therefore entitled to your re-
gard and cooperation in every good
work.

If you wish to keep the young peo-
ple in the Grange give them some-
thing to do.

A few words of praise will oftentimes

do more good than a volume of criti-
cism.

No true patron will knowingly put
an occasion of stumbling in another
member's way.

The Grange stands for education,
morality and virtue.

In the Grange we find the best and
noblest men and women in the com-
munity.

Every grange should devote a little
time at each meeting to nature study.

The patron who does the most good
gets the most good.

Take The Farmer to the Grange
meeting and if the speech-making
gets tiresome read something from its
columns for the good of all present.

Patrons should always be found
standing up for those who stood up
for them.

The successful Grange worker un-
derstands the art of putting things.

There are a good many patrons who
think that joining the order and en-
joying the benefits of State Grange
constitute all that is required of them.

The prospect for a forward Grange
movement is bright in every section
of the country.

Give your best efforts to the Grange.

It is our deep conviction that if Pa-
trons were to do what they ought to
do, not many years would pass until
there would be a prosperous grange
in every township.

Now for Grange work. The season
is here. Pitch in.

Anticipation and hope are born
twins.

Kindness makes care seem lighter.
Man is much like a silkworm. He
is a spinner and weaver by nature.
He will spin for himself and, like the
silkworm, he spins and spins and he
only spins himself a shroud.

It is the practice of the multitude
to bark at eminent men as little dogs
do at strangers.

Well Machinery.



For drilling and boring either
deep or shallow wells, in any
kind of soil or rock; with en-
gines or horse power.
Easily operated; built
strong and durable. Used
for over 20 years and they
are no experiment. Before
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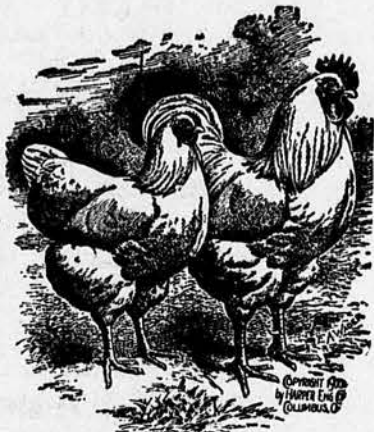
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and all other Raw Furs; also Cattle and Horse Hides
shipped to us will bring the Farmer and Trapper 10 to 50%
more than if sold at home. We want every Farmer, Trader,
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The Poultry Yard.

White Plymouth Rocks.

As a white fowl, the White Plymouth Rocks are very popular. They may now be seen on many farms in their purity, and kept exclusively in their purity. Under the very severe tests that have been made, in which many varieties have been entered in the contest, the White Rocks have come to the front in egg-production. They are also an excellent producer of meat of the best quality, and an all-purpose fowl that is not excelled by any other not even their near relative, the Barred Rocks. Ordinarily, a solid colored bird is more easily bred to standard requirements either in white or black, or other colors, and



the White Rocks are one of the highest scoring varieties we have. While the Barred variety reaches but from 90 to 92, or 93 points in very fair birds, the White reaches from 92 to 96 very easily if well bred.

A white variety of any kind should be just what the word white means, absolutely white, not creamy white or brassy white. Chalk white is the kind of white we must have in all fine, high-scoring birds of any white variety. This brassy tinge, while it crops out largely in all white varieties, we must guard against as much as possible in breeding, and select such specimens as show pure white plumage for breeding stock. It is not to be supposed that a bird showing brassy surface in plumage is not a pure, well-bred bird, as the best of them will show it to some extent, or a per cent of the flock, some more and some less. Good solid yellow skin, and yellow legs seldom appear on a chalk-white Plymouth Rock, but largely on the creamy-white plumage. Some of the high-scoring White Rocks have rather pale skin and legs, and slightly of a light green or willow tinge. It is not so easy a matter to produce a high-scoring standard bird of this variety as one might suppose, yet a good white body will offset the legs, and score well, even if the legs are not so bright a yellow as they may be. We like the yellow skin, legs and beak, and the body as white as possible.

Feeding for Eggs.

EDITOR KANSAS FARMER:—I would not advise anyone that has a good healthy flock to undertake doctoring them with antidotes with a view of forcing egg production, either summer or winter. On most farms there is plenty of feeds that would go towards making a perfect balanced ration, if we took advantage of it. The secret in making hens lay is simply providing them with suitable feed, and it is the safest way.

Corn, wheat, oats, barley, and millet-seed are good poultry feeds; some do not believe in corn, but their reasons are mostly like the small boy's "because." The agricultural experiment stations tell us that corn is one of the very best feeds for poultry, but they do not tell us to feed it exclusively; still more, cool reasoning would not suggest that we feed it exclusively.

The natural makeup of their feed is a variety; a little of this and that and constant exercise in procuring it. Some tell us to make them constant exercise in procuring it. Some tell us to make them scratch for their feed, a more correct way to say it would be to let them scratch for their feed, they would rather do it than not, besides, it does away with gorging and encouraging a lazy disposition.

Corn exclusively or in fact, wheat or millet it too heavy and too rich, something to make bulk must be added. I know of nothing better than wheat-bran to balance up a heavy rich feed—it's so common, though, that it

is hardly popular. Bran makes bulk, not only bulk but it clears the passages and keeps the digestive organs in condition. Bran alone would be too light for an exclusive feed, besides, it would not be in line with nature to feed nothing else. The crow is a grinding mill and we must keep it at work.

The different grains would not be a perfect feed alone; grass, insects and dozens of things we hardly think of, go towards completing the natural wants. Fowls on free range usually find these extra nicknacks, but penned up fowls or fowls in winter must have their equivalent in some form, or they can not do the very best. Cut clover and alfalfa hay imitates, cut vegetables imitate, and green cut bone helps to make summer out of winter as near as it would be possible. All these things are within our reach and the time required to procure them would return a nice profit. These means will bring eggs and it is a safe way.

M. M. JOHNSON.

Clay Center, Neb.

A Place for the Hens to Lay.

The nest should be rather hidden, it may be rather dark, and entirely out of sight of the flock; a separate room with but little light in it, as the fowls will not remain long in darkness, and will not bother a dark room very much. The hen likes to steal in a dark room to hunt a nest, and lay her eggs there, and you may think this rather queer, but such a place will increase the number of eggs largely. The best kind of nests are common small boxes, such as soap boxes, not nailed down fast, but left movable. Do not make a stationary nest, for you can not keep them clean. Always use nest-eggs at first, but after beginning to lay, they are of no benefit. A little soft hay makes the best material for a nest, as it holds its form and place better than straw. Artificial nest-eggs, or at least those made from china-ware, are objectionable in cold weather, as they become extremely cold and the hen will not sit upon them. Better to have none than to use them. Door knobs are frequently used, but they are just as objectionable. Something in the line of cotton balls or woolen balls is the best winter nest-egg. Gather eggs promptly every day, or better still, twice a day in winter, for some will become frozen, and when many have accumulated in the nest, some may get broken. Use plenty of nest boxes, and do not crowd the hens into a limited number of nests.

Winter Eggs.

Do not neglect the opportunity of getting high prices for eggs during the winter season. If you have a flock of hens, you should be able to produce many eggs, and the better care given, the more eggs you will have for sale. Many look upon the cost of producing eggs in winter as too great, since the cost of grain in winter is greater than in summer, and they do not figure the profits which follow. Winter eggs always pay the largest profit, and if you have comfortable quarters for the hens, and once get them started to laying, you can, with proper attention, keep them laying all winter. The hen produces as many eggs during winter if housed properly, as she does during the balmy days of summer; nay, more, she will come nearer laying an egg a day, than she will on free range during summer. Get the hens to laying early in winter, and it is but little trouble to keep them at it during all the winter months. Large quantities of feed will not do it alone, but good housing and yarding, with a good flock will. The food must first be prepared, then judiciously fed and the returns will surely come.

Water the Fowls in Winter.

Do not think that you can get good results without watering your fowls regularly. Highly fed fowls drink large quantities of water. Prepare your watering vessels so that you can keep the water as clean as possible. The drinking fountain may be large and deep, but should be covered on top, and openings made at the sides to allow the chicks to put their head in and drink. I like a common wash-bottle with a lid, and half way down a slot large enough for them to drink from, three inches wide and reaching all the way along one side. The sharp edges should be smoothed down. Wash the drinking fountain almost every day, using some disinfectant. In very cold weather, the water should be slightly warmed.

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How Merriam Helped Make the Sled.

Charlie is a little lad of five years, and his friend Merriam is a few months older. Charlie has sisters and a wee brother; but Merriam has neither brother nor sister, so he often gets lonely, and begs for some neighbor boy to play with. One day he came for Charlie, and promised to make him a new sled if he would come and play with him that afternoon.

Charlie's eyes danced, and his feet did too, as he went off with Merriam; for Charlie had no sled, and he did not feel at all sure that Santa Claus would bring him one.

When he came home his mama asked him about the sled. "Is Merriam making it?" "Yes," said Charlie, "but his papa is helping him."

A few days later he had another play with Merriam, and came home the happy owner of a sled. "Did Merriam make it?" said his mama.

"Yes, Merriam made it, but his papa helped him."

"What part did Merriam's papa do?"

"Oh, he did just the woodwork."

"And what part did Merriam do?"

"He? Why he tied the rope on it."

And Charley grew indignant at the laugh that followed his last statement, and reiterated, "Well, he did, too, tie the rope on it."

DOWN EASTER.

How's This!

We offer One Hundred Dollars Reward for any case of Catarrh that can not be cured by Hall's Catarrh Cure. J. CHENEY & CO., Props., Toledo, O. We, the undersigned, have known F. J. Cheney for the last fifteen years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligations made by their firm.

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In the Dairy.

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

The Farm Dairy Course.

Next week, January 6, will begin the twelve weeks course in farm dairying at the Kansas State Agricultural College, Manhattan, Kans. This course should bring out a large number of men, young and old, who want to learn more about milk and its use on the farm.

Instruction will be given in the testing of cows and herds, in keeping dairy records, in making up rations for cows, in breeding, in making cheese on the farm, in making butter on the farm, in preparing milk and cream for shipment to the creamery, in the use of the hand separator, in the rearing of calves on skim milk, etc.

For means of illustration the college has a dairy herd of fifty cows, housed in a new dairy barn with all modern improvements, a hundred-ton silo filled with first-class corn silage, eight different kinds of hand separators, a full line of machinery for farm butter and cheese making and one of the finest dairy buildings in the country. If you are intending to some, cost is low and tuition free. The State Dairy Association will hold its annual meeting at the college during the first week in March. There will be a feast of good things for dairymen.

Dairy Institutes.

While as a rule it is better to have an institute cover many sides of farm life, and the interests of the dairy are important enough to have a place in every such meeting, in many instances the whole program could very successfully and profitably be given to the subject. The subject of home dairying might receive considerable more attention than it does. Not all the attendants of the institutes are patrons of the creamery but all are interested in having good butter on the table and in producing pure milk for the household, and quite frequently the surplus is marketed in the form of butter at altogether too low prices because the quality is so poor. The line of subjects relating to the dairy industry which are within range of almost every attendant in any community is almost illimitable. The writer has at almost every institute he has attended been asked enough questions in regard to dairying to make a dozen programs for institutes.

The following list of subjects may be useful to those in charge of institute programs. They could be used as a text for short papers by some one in attendance. Often a paper written as an inquiry rather than with the thought of giving information will be the most successful part of the program, it will bring out what others have to say.

Some questions to be asked or suggestions for papers are:

"How can I get a fine flavor in my butter?"

"Why is it that it takes so long to churn in the winter?"

"What is the cause of my cows drying up so fast this winter?"

"A good way to manage skim-milk calves."

"My profit for the year 1902 from the dairy."

"Ripening cream on the farm."

"Making cheese on the farm."

"What can I feed with my alfalfa to best advantage for making milk?"

"Can I afford to buy a hand separator?"

"The best cows for the dairy."

"How much butter should a cow make in a year?"

"Feeding buttermilk to calves."

"Comparisons of dairy profit with beef."

The list might be increased indefinitely but this gives an idea. Many take too general a subject for a paper. A short, concise statement or inquiry on some point of interest that will bring out what other people think along the same line is often best. Give the ladies a chance at some of these questions. They should have a part in every program.

Testing Cream by Weight.

A Bourbon County correspondent writes: "I was reading in the KANSAS FARMER your article on the testing of cream by weight. Please inform me how it is done as I am interested in a creamery and the pipette is still used."

The necessary implements for testing cream by weight are a pair of sensitive scales weighing by grams, an ordinary pipette, such as is used for testing milk, the cream-test bottle and one or two cups for pouring the cream.

The scales are made specially for the purpose, they may be bought of almost any creamery supply company. Whatever kind is purchased they should have a beam for balancing the bottles and nine and eighteen gram weights for weighing cream.

The process of testing does not differ from that of the ordinary pipette method other than weighing out nine grams of cream if it is very rich and eighteen if it is thin. The pipette should be used for convenience in dropping the right amount of cream into the bottle in weighing. Testing by weight is the only correct method.

Two Methods of Doing Things.

A. H. McMANIS, BUTTER-MAKER FOR J. E. NISSLEY & CO., TOPEKA, KANS.

The most important thing in the care of milk is cleanliness. We are all familiar with the old adage "Cleanliness is next to godliness." And in no case is this more true than in connection with milk.

Absolute cleanliness in handling and caring for milk, we are sorry to say, is very much neglected by some farmers. Often this neglect is due to lack of proper thought on the part of the farmer or dairyman rather than to wilful neglect, but we can not say that this is excusable. Let us now visit for a few moments the cow-barn of an unsuccessful dairyman. We find the barn has not been cleaned for several days and gives off an odor that is anything but pleasant, the cow's coat is covered with dirt and manure, she is fed her roughness just previous to milking and the barn is filled with dust from the hay in which are millions and millions of bacteria. The cow is then milked in an open-topped pail which allows the hairs and particles of dirt from the animal's body to fall into the milk and carry with them numberless bacteria.

The effect of all this upon the milk is that it has a very offensive flavor and will not keep for any length of time. Is it any wonder this man says, "Dairying doesn't pay in Kansas?"

Let us now visit the more successful dairyman. His barn is kept neat and perfectly clean, and is practically free from odor. He cleans his barn in the morning just after milking so as to give it plenty of time to air out. His

cows are not bedded or fed hay until after they are milked in the evening. By this method there is no dust stirring in the barn at milking time. His cows are brought in at milking time and cleaned off, before the cows are milked the udder and lower portions of the abdomen are wiped off with a cloth, the milk is then drawn into a sanitary pail, which is a pail with a covered top in which is a circular hole covered with a removable strainer. The milk is drawn directly into this strainer.

This style of pail prevents the hairs, and particles of dirt and manure from falling into the pail. This milk has been handled with great care and cleanliness, is almost entirely free from odor, and will keep for a greater length of time than milk handled in the ordinary way.

Something to Anticipate.

The great need of the day in the dairy industry is a first-class mechanical milking apparatus. Almost every operation of the milk business and the manufacture of its products is done differently now than it was thirty years ago, except hand milking. To improve on this, probably the most laborious part of the whole industry, many attempts have been made, but none of the apparatus invented has come into any general use. With the advent of a successful milking machine the dairy industry would receive a greatly added impetus. When we consider that it takes about thirty-five billion pounds of milk to make the annual butter product of this country, besides the other billions of pounds made into cheese and consumed in its original state, the labor of squeezing this river of fluid out of the cows' udders by hand may be faintly appreciated.

In consideration of these facts we

30-CENT BUTTER

Has not been quoted in December on the New York market, or any other market, since 1893. The market will doubtless go higher within the next few weeks.

27 1-2-CENT BUTTER-FAT

Is our price to the farmer for the fat in hand separator cream delivered at the nearest shipping point, we pay all cost of transportation and furnish cans and tags. Every pound of fat we buy at skimming stations is paid for on the basis of New York.

ON COMMERCIAL BASIS.

That is the way our business is run. That is why our patronage grows. Our patrons know always what they receive for butter-fat the day the cream is delivered. Our price is always 2 1-2 cents below New York's top quotation. We buy butter-fat in the same way your dealer buys wheat and hogs, namely, on a price at your nearest shipping point, paying cost of transportation and all the expense of shipment.

For highest prices and greatest satisfaction in disposing of your dairy products, write for shipper's outfit.

THE CONTINENTAL CREAMERY COMPANY,
TOPEKA, KANSAS.

Davis Cream Separator Co.

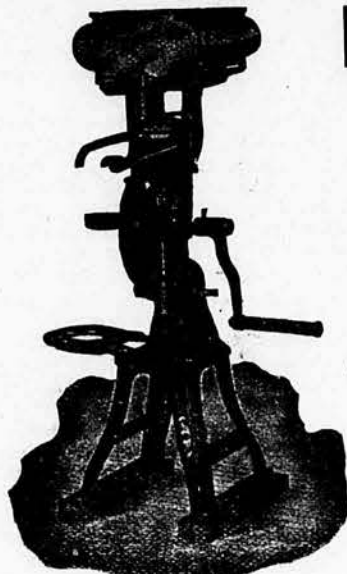
**BEST IN THE WORLD
EASIEST CLEANED
MOST DURABLE
CLOSEST SKIMMER**

CATALOGUES

Davis Cream Separator Co.,
54 TO 64 N. CLINTON ST., - CHICAGO, ILL.

Save time and freight by ordering from

PIONEER IMPLEMENT CO.,
COUNCIL BLUFFS, IA.



MORE GOOD NEWS.

November, the Best of All

The list continues to grow. The largest number of checks is being sent out to our patrons of any previous month. Our price for butter-fat is higher than ever for this season of the year, being 28 cents. This is the time to begin or to increase your herd. Write for particulars.

"Economy in operating and a high price for butter-fat" is our motto.

If you are hunting the best market, take your can of cream to the Depot and mark the tag

"BLUE VALLEY CREAMERY CO., St. Joseph, Mo."

are pleased to hear that Mr. P. M. Sharpless, of Westchester, Pa., has invented a new milking machine that is said to have been most successfully used and that it is soon to be put on the market. In this apparatus the action of the teat-cups is said to be closely imitative of the sucking of the calf, the milk passes to the closed pail without access to the air at any point, the the vehemence of the milking varies automatically with the disposition of the cow to "let down." It is hoped that this apparatus will prove to meet the great need of the day in the dairy industry.—New York Produce Review and American Creamery.

Work of the Department of Agriculture as Seen by a Live Westerner.

A great many Kansas people have a most pleasing remembrance of Prof. A. D. Shamel, of the Agricultural College of Illinois. About this time last year a boy—in appearance and enthusiasm—came before the Kansas State Board of Agriculture to talk about the improvement of corn. By his tremendous enthusiasm and his complete mastery of his subject he took the staid old State Board fairly off its feet. He talked so fast and so enthralled his hearers that before any one was aware of it the forenoon had passed. His address was later published in full in the KANSAS FARMER.

Not content with what he then knew, Professor Shamel wisely determined to go to "the root of the matter," and last autumn entered upon a course of study at the very center of our agricultural educational work—the department at Washington. And in response to a request from the editor of the Rural Voice of Chicago, Mr. Shamel has written something about that mighty organization of great minds and determined purpose and the work he is doing there. It is but a glimpse of the great wheels as they go round, but it is an encouraging and reassuring one, and the man on the farm, and the young man who proposes to make himself a thorough master of agricultural science will find in the following letter from Professor Shamel much that inspires with new hope, and to many may open wide the door of opportunity and point the way to success:

"I came here as a result of meeting Secretary Wilson at the Chautauqua Assembly at Ottawa, Kans., last summer. I found that the Government provides for a course of study in the Department of Agriculture for the graduates of agricultural colleges. In view of the fact that no institution in the country gives instruction in the lines of work I wished to follow, I immediately made up my mind to spend the winter in the Department, making a study of the various lines of work in which I am interested, as they are practically carried on by the scientists in charge of such work. The work of the Department of Agriculture is divided into several bureaus, as the bureau of plant industry, bureau of soils, bureau of chemistry, weather bureau, etc. One of the things with which I have been especially impressed is the great amount of work done by the Department, and the extent of the field covered by the various bureaus. To illustrate this matter, I will cite the work of the bureau of plant industry, in which I am working and with which I am most familiar.

"The head of this Department is Dr. M. T. Galloway, who has over three hundred scientists and trained men working under his direction. These men represent the very best of the scientists produced from our colleges and universities, and in addition to their college training they are, as a rule, widely traveled and broadly educated men. The Department is continually on the lookout for strong men in every line of its work, and when a man is found who has done especially valuable work, he is given every opportunity to pursue his favorite investigations under the most favorable conditions.

"The work of any division could hardly be covered by a short letter, so I will confine myself to a very brief description of the line of work in which I have been engaged. My first work has been done in the seed laboratory. This laboratory was established in response to a general demand for seed investigation. The work is divided into three general lines: (1) Study of purity of samples of seeds; (2) tests of vitality, (3) investigation of seed problems. Samples of seeds of all kinds are sent to the laboratory by farmers and seedsmen, who desire to know the quality of the seed which they grow or purchase. A small sample is taken

from this general sample, care being taken to secure a representative sample. This is then carefully studied for impurities. It is separated into three general grades: (1) Pure seed; (2) foreign seed; (3) inert matter. The pure seed includes all seeds true to type, and sound so far as external appearance may show. The foreign seeds include all seeds of different varieties from the original type and weed seeds.

"In a sample of Kentucky blue-grass seed which I recently analyzed, I found that it was adulterated with almost 75 per cent of Canadian blue-grass seed, and contained eighteen varieties of seeds of our most noxious weeds. In a sample of red clover I found that it was adulterated with fine sand and contained twenty-four varieties of weed seeds. The inert matter includes the chaff, dried or shriveled seeds, sticks, stones, or other dead matter found in the sample. The chaff is separated from the seeds by an ingenious machine recently invented by seed experts in the Department, which greatly facilitates the work of studying the sample.

"A report of the per cent of pure seed, the per cent of foreign seeds, together with the name of each variety, and the per cent of inert matter is sent to the person sending the sample to the laboratory. From the pure seed, a sample of from one hundred to four hundred seeds are tested for vitality. These tests are made in special germinating chambers, in which the conditions of moisture and heat are regulated. As soon as this report is made out, it is forwarded to the person sending the sample. Therefore, the farmer and seedsmen have an opportunity to have the seeds of all of their crops tested by experts in this line of work free of all charge.

"The value of this work can hardly be estimated, when it is considered that such a test is a means of preventing the spread of weeds and of finding out the vigor and vitality of the seed used for the production of crops.

"The future policy of the department seems to be the encouragement of seed testing stations at the State experiment stations, so that every farmer can have the opportunity of sending samples of seed which he purchases, or grows, to the station, where they will be tested free of charge, and a full report of the results made in as short a space of time as possible. Most European countries have such stations in their provinces, and they are among the most important branches of the experiment station work.

"The seed laboratory in charge of Edgar Brown has the most complete collection of samples of weed seeds and seeds of all species of plants in the United States if not in the world. This collection now includes over forty thousand samples, arranged in special bottles, properly labeled and placed so that they may be readily used for reference work. The seed experts continually use this valuable collection in identifying the weed seeds which are found in the samples of seeds sent to the laboratory for analysis. I have been particularly fortunate in being able to take a sample of every species for a duplicate collection for future work. As many of the samples will be reduced to the smallest possible amount by this process, it will not be possible for other collections to be made in this way.

"Sets of samples of 100 varieties of weed seeds are being put up by the seed laboratory for use by the schools of the United States. They are furnished to the school at the bare cost of the boxes and vials—about \$2 per set—and make invaluable additions to any school laboratory. Every public school interested in agricultural studies should have the set for reference work.

"In order to become familiar with the work of the seed laboratory I am making purity and germination tests of samples representing all leading varieties of seeds. In addition to this work I am testing the vitality of samples of seed-corn stored under varying conditions, as in shock, in crib, in dryhouse, kiln-dried, and stored in crib in the husk. The results secured so far indicate that the best preservation of vitality is found in fire-dried seed.

"Later in the season I will take up the study of plant breeding with Dr. Weber, who is the leading American authority upon this subject. Especial study will be made of the methods of plant breeding, and specific study will be made in future work of the improve-

What a Business!!!

That is what every patron of
THE J. P. BADEN PRODUCE CO.
says when referring to that firm.

The amount of creamery business done during the last three months, was more than double their expectations.

What did it? High prices, honest tests, and good treatment to all.

Remember, this firm handles in addition to butter-fat, country butter, eggs, poultry, and hides, manufacture their own ice, do their own cold-storing, and manufacture all kinds of feather goods.

Correspondence solicited.

The J. P. Baden Produce Co.
WINFIELD, KANSAS.

ment of leguminous crops. There is every reason to believe that a crop can be secured which will take the place of the oats crop in our rotation and which will produce a profitable crop of seed and straw, besides improving the condition of the soil.

"I have been most pleasantly surprised at the fact that every one with whom I have come in contact has been most anxious to give me every opportunity for work, and spares no time in helping me in every way possible. As a matter of fact, the men in the department strive to help each other in every way possible, and in this way they accomplish the greatest possible results. The spirit of energetic study, cordial helpfulness, and a sincere desire to accomplish the very best results pervades every department of the work with which I have come in contact.

"Julius F. Funk, of Bloomington, Ill., a member of the Funk Bros. Seed Co., is here making a special study of the seed work, including the distribution of seeds from the department as authorized under the congressional seed distribution act. This work has been turned over to the Department of Agriculture and placed in charge of A. J. Pieters, who formerly had charge of the seed laboratory. Mr. Pieters is making every effort to secure and send out only good seed, and to so arrange the distribution that it may mean the introduction of new and valuable varieties of crops in various sections of the United States. To this end he has agents scouring the entire world for valuable crops to meet the conditions found in our own country. Mr. Funk is pursuing a special line of work in botany and chemistry, looking toward special preparation for plant breeding and seed work.

"W. H. Stevenson, of the Iowa Agricultural College, until recently with the University of Illinois, is in the department studying the methods of soil investigation. Mr. Stevenson is greatly pleased with his work, and has been able to do some specially satisfactory work.

"I do not feel that I have been able to even begin to tell you of this work and hope that I may be able later to write you more fully on some points which are of particular interest.

A. D. SHAMEL.

Washington, D. C."

How to Hurry.

Perhaps we are all trying to do too much or too many things, nevertheless, as we are, perhaps a few suggestions that have helped me will help others, writes Joseph Elering, in the Breeder's Gazette.

Think a few minutes before you get out of bed of what lies before you to be done that day. Try to arrange a definite plan of campaign. Then, having it settled in your mind, get up. Do not permit yourself to lie and turn it over and over and worry over the magnitude of the task before you. Get ready before you go ahead. If you are going to the woods, take the axe to the stone and put an edge to it. Take the saw to the shop and dress the teeth and see that it has sufficient "set." Or if you are going to any work look first to your tools, so that you will not need to run back and forth getting ready after you are supposed to be working. Think a bit about the work in hand before you begin it. If you are to fall a tree take time to see which way it really leans, where it had best lie for loading well, then cut your chips accordingly.

Accuracy, not haste, counts in work. It is the man who strikes thirty telling

strokes with a keen axe in a minute who falls the tree quickly; the other man who hacks and chops desperately with a dull axe, making twice the number of strokes, wastes time and energy and accomplishes little. Brain and muscle are largely mechanical in their movements. Train your machine to do accurate work. Then it will wear better, do much more with less pounding and heating of boxes and screeching. Many men complain of overwork. Very few are accomplishing nearly what they might if their movements were accurate and well timed.

We are advised: "Go to the ant, thou sluggard; consider her ways and be wise." That might have been fair advice once. It will not do at all now. The ant is one of the least effective of workers, rushing here and there, apparently in a desperate hurry to do she knows not exactly what and not at all how to do. Man is the nearest to the ant in lack of directness of his movements. Solomon, had he lived today, would have advised the worker thus: "Consider the engine of Corliss; it does not jigger, it hurries not, it reaches out far enough but not too far; it is on time, but gets there without undue haste; it gets not hot under the collar nor makes others to so offend, yet when it turns itself all other wheels and parts hasten to turn and do it homage." And it quits work when it is done. Do you do that?

A Record Breaker—Iowa Man Pleased.

Onawa, Monona Co., Iowa,

March 19, 1902.

D. M. Bye Co., Indianapolis.

Sirs:—I am pleased to be able to announce that the Cancer parted company with me this morning. The cavity from which the growth has been removed seems at present to be simply an ordinary sore with healthy tendency. This makes two distinct cures—a record breaker—and part of the remedies yet on hand. Thanking you heartily for your interest and honorable dealing, I subscribe,

Yours truly,

WENTWORTH BARNUM.

The Combination Oil Cure for Cancer was originated and perfected by Dr. D. M. Bye. It is soothing and balmy, and gives relief from unceasing pain; it may be used safely at home. Those interested may receive books and papers free. Call on or address Dr. D. M. Bye Co., Drawer 505, Indianapolis, Ind.

Kansas Seed House.

The seed trade of the United States recognizes that the Kansas Seed House of F. Barteldes & Co., Lawrence, Kans., is one of the largest and best houses in America and has an enormous trade throughout the entire country as well as an extensive foreign trade. Especial attention is directed to the new advertisement on page 13 this week. The 1903 catalogue is now ready and will be sent free on application. The senior member of the firm informs the writer that good alfalfa seed will be quite scarce and intending purchasers should get in their orders early, otherwise they will have to depend upon foreign seed which is not as pure and reliable as the home-grown alfalfa. The same is true of many other seeds, hence it is advisable to buy early this season in order to get reliable seeds at reasonable prices. Readers of Kansas Farmer will remember the article by Hon. Case Broderick, Holton, giving the results of his successful experience with Russian speltz or emmer. This entire crop was purchased by F. Barteldes & Co., and is fully described in their new catalogue.

BEEES If interested in bees subscribe for the **Progressive Bee-Keeper** 50c per year. Sample copy free, also copy of catalogue of Bee Keepers' Supplies. **LEAHY CO., HIGGINSVILLE, MO.**

THE MARKETS.

Kansas City Live Stock and Grain Markets.

Kansas City, December 29, 1902. Holiday runs and better prices for all classes of stock prevailed here during the best seven days, Christmas week. Cattlemen had feared heavy supplies and another disastrous break, but their fears were not realized. Total cattle receipts for the week were 20,000 head, compared with 38,000 the preceding week. Trade opened brisk under the stimulus of light supplies. By Wednesday, however, beef cattle began to come in dangerously freely, shippers being attracted by the strength manifested by the market. No break of consequence was had, however. Top cattle for the week were marketed by S. McCleary, of St. Marys, Kans., who secured \$5.65 for a bunch of 1,500-pound steers. By Wednesday forenoon the cattle market had advanced fully 25c over the previous week. Part of this was lost later, but trade ruled on a healthier basis than during the preceding seven days. The bulk of the better beef steers are now commanding \$4.75 to \$5.25. Cows are now commanding \$3.00 for the best and \$2.50 for culling stock. Heifers are moving fairly freely, and sell from \$3.50 to \$4.50 for the best stock.

Those who have their eyes on \$7 swine reveled in the upward flight of the hog market last week. Receipts were light both at this point and elsewhere and packers wanted more swine than were offered them. As a result the market recorded almost one continual advance throughout the week. Compared with our last report, the hog market advanced 20c to 25c, and closed for the week with tops selling at \$6.55, the highest point of the month. The betterment in prices has been so pronounced that traders fear big supplies the coming week will result in the gain of the past few days being entirely wiped out. At best the trade is counting on no further advance during the coming week, unless the unexpected happens and receipts continue light. If the latter is the case \$7 hogs will not be an improbability.

Holiday receipts were the rule in the sheep trade. Total arrivals for the week amounted to only 5,800 head, the smallest run of the year and the lightest week's supply since December, 1902. Offerings consisted largely of native Kansas and Missouri lambs and fed Western muttons from the same States. Killers had no alternative but to give steady to strong prices and in cases the week showed an advance. Yearlings sold at \$4.50 and fed sheep from \$4.25. Top lambs ranged at \$5.25 to \$5.35 and good kids at \$5 or better. Ewes sold from \$3.85 to \$4, a trifle higher than during the preceding week.

Horses and mules were affected by the proximity of the holidays, but all things taken into consideration, the week's trade was satisfactory. The Eastern inquiry for horses was firm and prices were in accordance with the demand. Southern horses were mean. The inquiry for mules was light, but proved a little better than was expected. Values showed no improvement over the weakness prevalent in the preceding month.

As was expected, the edge was taken off the poultry market as soon as Christmas had passed. Before the natal day, however, turkeys retailed at Kansas City for 17c to 20c a pound. There was a general exodus on the part of consumers to beef and cheaper meats. This caused a drop in prices. Eggs and chickens held about steady. Quotations are: Eggs, 21c; hens 8 1/2c; springs 9c; roosters 20c; turkey hens 12c; gobblers 11c; geese 8c; ducks, \$2.00 per dozen; rabbits 50c to 55c per dozen.

The grain markets ruled slow during the holiday week and prices generally declined a little, although the average trend of the market was about steady. No. 2 wheat is quoted at 66c to 68c; No. 3, 63c to 65 1/2c; No. 2 corn 37c to 37 1/2c; No. 3, 36c to 37c; No. 2 oats 31c to 34c. Receipts of hay were liberal for the season and the market was weak to easy. Alfalfa is worth \$8 to \$11; timothy \$8 to \$12.50; prairie \$4.50 to \$9.50. H. A. POWELL.

South St. Joseph Live Stock Markets.

South St. Joseph, Mo., December 29, 1902. Under light receipts last week the trend of high prices was higher and the demand was good at 25c to 40c higher range of values than the low point of last week, which was Wednesday. Cows and heifers were also in good demand and the 25c to 35c decline of the preceding week was regained. Stock cattle were in moderate supply and the movement was fairly good to the country, although prices dropped 10c to 15c on Friday.

While receipts of hogs were fairly liberal the demand was ahead of the supplies and the trend of prices was upward the greater part of the week. The quality was of good average and weights continued of heavy average. Prices to-day ranged from \$6.40 to \$6.65 with the bulk selling at \$6.50 to \$6.60.

The demand was far ahead of the supply of sheep and lambs last week and sellers had no trouble in securing 25c to 50c higher prices, the good class of lambs and light yearlings selling to the best advantage. Natives were in good proportion, but fed Westerns were in the majority.

Lawrence Seed Markets.

Lawrence, Kans., December 29, 1902. We give you to-day's buying prices in our market. Outside prices are for best grades:

Red clover	.....	\$9.00 to \$10.00
Alfalfa	.....	8.00 to 11.00
Timothy	.....	8.00 to 8.25
English blue-grass	.....	2.50 to 3.50
Millet	.....	.75 to 1.00
Cane-seed	.....	.75 to .85
Kafir-corn	.....	.50 to .60

F. BARTEDES & CO.

Never leave food in tins. Fully half of the cases of poisoning from using tinned foods arise from their being left in the tins after opening. Whether you need all that the tin contains at once, or only part of it, the whole should be turned out immediately onto a plate or dish.

Special Want Column

"Wanted," "For Sale," "For Exchange," and small or special advertisements for short time will be inserted in this column, without display for 10 cents per line of seven words or less, per week. Initials or a number counted as one word. Cash with the order. It will pay. Try it.

CATTLE.

FOR SALE—Red Polled cattle. I have been breeding these cattle seventeen years. No better anywhere. Twelve bulls to select from. D. F. Van Buskirk, Blue Mound, Kans.

FOR SALE—A choice herd of registered Holsteins. Six heifers coming 3 years old, and one yearling heifer from first prize cow. A 2-year-old first prize bull from M. E. Moore's unbeaten 1901 show herd. E. W. Melville, Eudora, Kans.

FOR SALE—One fine registered Shorthorn bull, 12 months old, red and white. Price reasonable. His half sister sold at Indianapolis, Ind., last June for \$800. D. C. Van Nice, Richland, Kans.

FOR SALE—My herd bull, Baron Knight 13496, 4 years old, dark red, weight 2,200 pounds, got by Gallant Knight 12468; also three Scotch-topped bulls, 14 months old, and a few cows with calves by side. J. P. Engel, Alden, Kans.

FOR SALE OR TRADE—For young cattle—one Percheron stallion; also for sale M. B. toms, headed by tom 95 1/2, hens 94 1/2. J. W. Holsinger, Cottonwood Falls, Kans.

FOR SALE—A few choice Shorthorn heifers and young bulls. M. C. Hemenway, Hope, Kans.

FOR SALE—Ten young Hereford bulls from the Evergreen Farm herd, headed by Lee 121232. Address Pearl I. Gill, Great Bend, Kans.

FOR SALE—Guernsey bulls from best registered stock. J. W. Perkins, 423 Altman Building, Kansas City, Mo.

FIVE HEREFORD BULLS FOR SALE—Never used in a herd, they are in fine fix, at a bargain for cowmen. O. L. Thistler, Chapman, Kans.

FOR SALE—Six good Shorthorn bulls, four of them straight Cruickshanks; prices reasonable; now is your chance to get a good individual. H. W. McAfee, Topeka, Kans.

HORSES AND MULES.

FOR SALE OR EXCHANGE—Horse and Jack. The horse is a dapple-grey Norman, weighs 1,600 pounds, and is 10 years old. The Jack is a dark brown or black, stands 15 hands high, 9 years old. We would like to trade both horse and Jack for black Percheron weighing not less than 1,900 pounds; or would sell or trade either horse or Jack alone. We also have for sale 15 head yearling colts, sired by trotting horse, cheap for cash. Write for prices. Stormont Bros., Dighton, Kans.

FOR SALE—Or will trade for stock, an 800-pound black Jack, white points, 8 years old, sure foal getter, easy keeper. Address R. B. Irwin, Modoc, Kans.

FOR SALE, CHEAP—One 3-year-old black Jack, and red Shorthorn bulls and heifers; show stuff. George Manville, Dearborn, Mo.

FOR SALE—Full blood, imported Percheron stallion Leabos 1497. Color—black, sound and excellent breeder; also a Kentucky-bred Jack, 5 years old. For particulars, write or see John Raetz, Alida, Kans.

PROSPECT FARM—CLYDESDALE STALLIONS, SHORTHORN CATTLE, and POLAND-CHINA HOGS. Write for prices of finest animals in Kansas. H. W. McAfee, Topeka, Kans.

SWINE.

CHOICE Poland-China boars and gilts, ready for use; also 135 extra Barred Plymouth Rock cockerels. John D. Ziller, Hiawatha, Kans.

DUROC-JERSEYS for sale. A few males that are herd headers; also some good ones at reasonable price. Young gilts bred. M. H. Alberty, Cherokee, Kans.

YEARLING Poland-China herd boar for sale. Grand Chief, by Grand Chief 2d 55525. He will make a remarkable sire for some good breeder. Address L. W. Hamilton, Kearney, Neb.

FOR SALE—Berkshire boars, by son of Imported Commander and King Blossom; also bred gilts. O. P. Updegraff, Topeka, Kans.

MISCELLANEOUS.

WINCHESTER RIFLES at a bargain, \$5.50. By special contract and for a limited time we will sell 22-calibre take down, single shot, Winchester rifles, with 18-inch barrel, just as accurate as all other Winchester guns, at our special holiday price. Express paid by us to any address. J. Ralph La Mont, Buxton, Wilson County, Kansas.

WANTED—Man to milk cows. \$30 per month. Wife to board farm help. \$10 each. House free. J. H. Taylor, Chapman, Kans.

SEPARATOR FOR SALE—Cheap, nearly new, U. S. No. 6, \$100 machine; capacity, 400 pounds per hour. Have quit dairying. E. W. Adams, Berryton, Kans.

FOR SALE CHEAP—Pedigreed Scotch Collie pups. W. H. Richards, V. S., Emporia, Kans.

WANTED—Man with family to work on farm by the year. Must be practical farmer and stockman. Place good for years to right man. Farm two miles from city. Address 708 Harrison St., Topeka, Kans.

SEEDS AND PLANTS.

200,000 FRUIT TREES! Wholesale prices; new catalogue. Baldwin, Nurseryman, Seneca, Kans.

When writing advertisers, please mention this paper.

FARMS AND RANCHES.

CHOICE KANSAS FARMS—For sale cheap. 600-acre ranch, 800 bottom land, 50 in alfalfa, living water, timber, fine house, large barns, 3 miles to good town, a bargain. 440 acres 2 1/2 miles to good town, 50 acres bottom land, 20 acres timber, fair buildings, \$18 an acre, 80 acres 9 miles to Emporia, 60 bottom, good buildings, \$2,200. 280 acres well improved only one mile to good town, at \$15 per acre. 1,922 acres with timber and running water, small buildings, \$10 per acre. Write me for the best bargains. J. G. Howard, Emporia, Kans.

REAL ESTATE—For sale or trade. Millions of Acres. Almost any county in United States. Cheapest and best. Describe your wants. W. W. Gavitt & Co., Bankers and Brokers, Topeka, Kans.

FARM FOR RENT—A good farm of 432 acres for cash rent in Anderson County, Kansas. Good buildings and everything that goes to make a good farm. For particulars write to A. C. Krape, R. F. D. 2, Garnett, Kans.

IMPROVED farms and grazing ranches in eastern Kansas for sale. Send stamp for list. W. L. Seeling, Paxico, Kans.

WANTED TO RENT—I would like to rent a farm, from 80 to 500 acres of land, anywhere in eastern half of Kansas. Would like to have one already furnished with stock and farm machinery; or I will take charge of such a farm for the owner. Write me at Leocompton, Kans. H. C. Allen.

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The Stray List.

Week Ending December 18.

Lincoln County—J. S. Stover, Clerk. HEIFER—Taken up by E. L. Mack, in Beaver tp. (P. O. Lincoln), November 12, 1902, one 3-year-old red heifer, straight brand on left hip.

Elk County—G. J. Sharp, Clerk. COW—Taken up by A. B. Kessinger, in Greenfield tp. (P. O. Grenola), November 13, 1902, one dun colored cow, poll on left side, circle on left jaw, M on right hip, smooth crop on left ear, two underbits in right ear; valued at \$10.

Greenwood County—C. D. Pritchard, Clerk. STEER—Taken up by J. H. Estes, in Eureka tp., November 1, 1902, one red yearling steer, white face, white streak from head to shoulders, white on belly, has horns; valued at \$15.

Week Ending December 25.

Lyon County—H. E. Peach, Clerk. STEER—Taken up by D. S. Richards, in Center tp., one red steer, branded H on left hip.

Linn County—J. A. Cady, Clerk. MARE—Taken up by O. W. Simpson, in Mound City tp., one dark bay western mare, 6 years old, weight about 900 pounds, white spot in forehead, branded I T on left shoulder.

Greenwood County—C. D. Pritchard, Clerk. STEER—Taken up by Henry Imthurn, in Madison tp. (P. O. Madison), November 13, 1902, one dark red steer, 2 years old, indistinct brand on right hip, dehorned.

Rawlins County—A. V. Hill, Clerk. COW—Taken up by Isaac Conner, in Driftwood tp. (P. O. Atwood), December 6, 1902, one red cow, lower part of both ears gone; valued at \$10.

Week Ending January 1.

Barber County—J. E. Holmes, Clerk. MARE—Taken up by J. E. Wheat, in Eagle tp. (P. O. Eagle), Dec. 22, 1902, one black mare, branded N D on left shoulder, F C on left hip; valued at \$20.

Woodson County—J. P. Kelley, Clerk. STEER—Taken up by F. O. Wells, in North tp., Nov. 24, 1902, one red yearling steer, white face, C on left shoulder, slot in each ear.

Greenwood County—C. D. Pritchard, Clerk. HEIFER—Taken up by L. A. Gather, in Quincy tp. (P. O. Neal), one heifer, mostly red, some white, 1 year old, tip of right ear cut off, white face and heavy with calf; valued at \$14.

Linn County—J. A. Cady, Clerk. HEIFER—Taken up by W. M. Barker in Sheridan tp. (P. O. Pleasanton), Dec. 11, 1902, one red muley heifer about 13 months old, weight about 750 pounds; no marks or brands; valued at \$18.

Crawford County—John Viets, Clerk. HORSE—Taken up by A. A. Messick in Baker tp., one brown horse, about 8 years old, one-half blaze in lower part of face, two hind feet and right fore foot white; weight about 800 pounds; collar marks.

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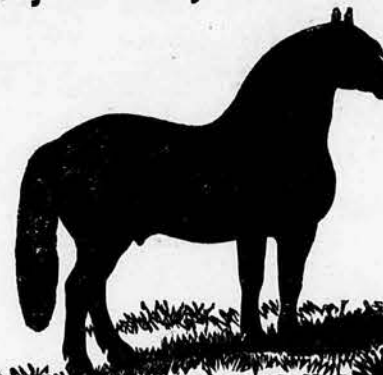


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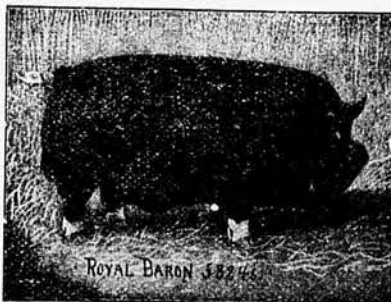
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