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Also German Coach, Saddle, and trotting-bred horses. World's Fair prize Oldenburg Coach stallion Habbo, and the saddle stallion Rosewood, a 14-hand 1,100-pound son of Montrose in service. Visitors always welcome. Address: BLACKSHERE BROTHERS, Elmdale, Chase County, Kansas.

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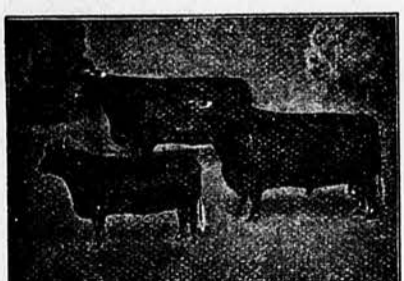
The Scotch bull, Gwendoline's Prince 189913, in service. Also the imported Scotch Missie bull, Aylesbury Duke. 100 head of the best Scotch, Bates, and American families. High class Duroc-Jersey swine for sale. J. F. STODDER, Burden, Cowley Co., Kans. Remember the three days' Combination Sale at Wichita, Kans: February 11, 1902, Poland-Chinas by Snyder Bros. and H. E. Lunt; February 12, 1902, Short horns by J. F. Stodder, and February 13, 1902, Draft horses by J. C. Robison and Snyder Bros.

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SHORTHORN CATTLE. Herd numbers 135, headed by ROYAL CROWN, 125598, a pure Cruickshank, assisted by Sharon Lavender 143002. FOR SALE JUST NOW—16 BULLS of serviceable age, and 12 Bull Calves. Farm is 1 1/2 miles from town. Can ship on Mo. Pac., R. I., or Santa Fe. Foundation stock selected from three of the great herds of Ohio.

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Herd Headed by the Cruickshank Bulls Imp. Nonpareil Victor 132573 Sire of the champion calf and junior champion bull of 1900 ...Grand Victor 115752... Himself a show bull and sire of prize-winners. FEMALES are Scotch, both imported and home-bred, pure Bates, and balance 3 to 6 Scotch tops. STOCK FOR SALE. GEO. BOTHWELL, Nettleton, Caldwell Co., Mo. On Burlington Railroad.



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WE ARE NOT THE LARGEST IMPORTERS In the United States, neither have we all ton horses. But we do make five importations each year. Our stables at Lincoln, Neb., and at South Omaha Union Stock Yards are full of first-class Percheron and Shire stallions. If you want a good one for what he is worth, it will pay you to see us. Our horses won sweepstakes in all draft and hackney classes at Nebraska State Fair. Address all correspondence to WATSON, WOODS BROS. & CO., Lincoln, Neb. SPECIAL NOTICE: Woods Bros., of Lincoln, Neb., have two cars of Short-horn and Hereford bulls and cows at a bargain.

German Coach, Percheron, and Belgium Horses. OLTMANN'S BROS., Importers and Breeders, WATSEKA, ILLINOIS. Three Importations in 1901. 100 Stallions For Sale. No other firm enjoys such buying facilities; the senior member being a resident of Germany is personally acquainted with the best breeders in France, Germany, and Belgium. We can save you money. Come and see us. We shall exhibit at the International Live Stock Exposition, Chicago, Dec. 1-7, 1901.

S. A. SPRIGGS, Westphalia, Kansas, BREEDER AND DEALER IN Registered Mammoth, and Imported Spanish Jacks and Jennets; Also Registered Stallions. All stock guaranteed just as represented. Correspondence solicited.

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Percherons, Shires, and Clydes. We have a selection that are sure to suit you. As grand a lot of young stallions, of serviceable age as can be found in the country. We do not claim to have every color or kind of a stallion, you or anybody may want, but what we claim you will find true if you pay us a visit. All of our selections are made by a member of our firm, who has been at this line of work the past decade and has absolutely a first choice from the leading breeders of Europe. Our last importation, consisting of the three great breeds, and 63 head in numbers were selected in the early part of February, before any of the shows and to-day are ready for sale. Write us, or come and see us, if you or your community are in need of the best to be found. KEISER BROS., Keota, Keokuk County, Iowa.

America's Leading Horse Importers Won at the Two Last Universal Expositions At the Paris Exposition, 1900, our Percherons won Every First Prize with a possible exception. At the Pan-American Exposition, Buffalo, 1901, our stallions won Every First Prize including the Grand Sweepstakes over all draft breeds. We import more horses than any other three firms in America, and more prize-winners than all others. We buy the best, can buy them cheaper and will sell them for less than anybody else. If you want the kind that will improve your stock of horses, call on or write—McLAUGHLIN BROTHERS, COLUMBUS, OHIO. LAWRENCE, KANS. EMMETSBURG, IOWA.

PERCHERONS. J. W. & J. C. ROBISON, Importers and Breeders, TOWANDA, BUTLER CO., KANS. LARGEST HERD IN THE STATE. IMPORTED, AND AMERICAN BRED STALLIONS AND MARES For Sale at all times. Prices reasonable. Inspection invited. Seventeen young stallions for sale. Remember the three days' Combination Sale at Wichita, Kans: February 11, 1902, Poland-Chinas by Snyder Bros. and H. E. Lunt; February 12, 1902, Shorthorns by J. F. Stodder, and February 13, 1902, Percherons by J. C. Robison and Snyder Bros.

THE CLARK DISPERSION SALE AND THE HARNESS COMBINATION SALE OF

Hereford Cattle

AT CHICAGO, ILL., TUESDAY AND WEDNESDAY, JANUARY 7 AND 8, 1901.

Two Great Opportunities for the Purchase of Hereford Breeding Stock.

ON TUESDAY, JANUARY 7, THOS. CLARK, of Beecher, Ill., will disperse his Hereford breeding herd, consisting of 60 head of prize-winning cattle. Perfection, the grand sweepstakes bull at the recent International Exposition, together with many females in calf or with calves at side to his service will be sold. Sale begins at 1 o'clock p. m.

ON WEDNESDAY, JANUARY 8, MESSRS. G. W. HARNESS, JR., W. L. THOMAS & SONS, S. H. GODMAN, CLEM GRAVES, and six other Indiana and Illinois breeders will sell 76 head of Herefords. The herds represented are all good ones and the cattle to be sold in this sale are the "tops."

For Clark Catalogues, write THOS. CLARK, - - - Beecher, Ill. For Harness Catalogue, write G. W. HARNESS, Jr., Galveston, Ind.

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Owners of the Largest and Finest Herd of ...POLAND-CHINAS... In the World.

The 4 sweepstakes boars, Perfect I Know, Proud Perfection, Corrector, Missouri Sunshine, and the International winner, Lamplighter, at head of service. Eleven sweepstakes sows in herd. Our herd won 45 prizes at State Fairs this year; 21 firsts, 12 seconds, 3 thirds, 1 fifth, and 8 sweepstakes. A great lot of show pigs and sows bred to above boars for sale at reasonable prices. Satisfaction guaranteed. ALLAN F. OVIATT, Herd Manager.

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Pigs by Anderson's Perfect, Harris' Black U. S. (the champion sweepstakes boar at the Iowa State Fair of 1900), Kemp's Perfection (the highest priced pig by Chief Perfection 2d sold last year). Stock of all ages for sale, including three yearling boars.

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in a better way, and of better material, as it really is, then you can see how it has become so popular.
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OUR MILLS for 1901 are made for that, and are **Improved Corn Grinders** beside. You will find a surprise in prices in our circular of un-gared and double and triple geared mills. Ask for our Windmill Catalogue, too, when you write. Add., **Currie Windmill Co., Topeka, Kans**



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WINTER WATER.
When the stock goes into winter quarters you will want to be sure of a reliable and constant supply of water. A bored well is the safest and surest. Our Well Machinery does it best and cheapest. Drills 55 to 1500 ft deep. We make all appliances. Have stood the test of 25 years. We also have Gasoline Engines for all purposes. Send for free catalog.
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INTERNATIONAL NOTES

Notes, Personals, Views, and Observations—Side-lights on the International Live Stock Exposition—Gathered by H. A. Heath and I. D. Graham While They Were Resting.

Chas. E. Sutton, of Russell, Kans., invested \$116 in 3 Berkshires at the sale held during the show.

Among the sales by D. C. Flatt & Sons, Mill Grove, Ont., of 4 head of Yorkshire swine for \$1,650, was one which brought \$700.

Probably the only organized association of corn breeders exists in Illinois, and as known as the Illinois Seed-Corn Breeders' Association.

The heaviest hog on the grounds was a large English Yorkshire sow, weighing 1,150 pounds. It was exhibited by D. C. Flatt & Sons, of Mill Grove, Ontario.

During the last days of the show, Christobel 11th, the valuable Hereford belonging to Z. T. Kinsell, Mount Ayr, Iowa, died from congestion of the lungs, this being the only fatality or case of sickness reported among the 10,000 exhibits.

Keep On, a seventeen months Poiand-China boar, belonging to John W. Funk, of Hayworth, Ill., received the first prize in his class. He weighs about 600 pounds and was sold after he entered the ring to E. H. Ware, Douglas, Ill., for \$2,500.

America beat England in the contest between yearling Shorthorn bulls at the International. Nonpareil of Clover Blossom,

king of good fellows and more skilled of breeders, "Tom" Clark, of Beecher, Ill.

Honeymoons were being spent in the stock yards by loving couples from many Western States, who had been attracted by the live stock show. Many pairs wandered about, clinging closer than vines, and casting sheep's eyes at one another. Mary and John were dreaming of the time when they would have a farm of their own, with prize-winning porkers and very woolly lambs on every acre.

J. G. Truman, manager of the Pioneer Stud Farm, at Bushnell, Ill., received a cablegram during the show from his father, J. H. Truman, announcing that he had purchased the grand Shire stallion, Sandringham, bred by his majesty, the King of England, and considered the best Shire stallion in England. This stallion is included in the shipment of 32 head which left England on December 13.

Robert Graham, of Claremont, Ont., the Canadian breeder of Clydesdales, said: "It is the best display of Clydesdales I ever saw, and from what I have seen, the Percheron collection is equally as good. I am speaking as a Clydesdale man, of course, and it looks to me as though they have got them up to the point where little improvement can be expected, in other words, they are near the perfection mark."

The National Live Stock Association had a very successful meeting, and, like the International Show, is becoming more popular every year. Both President Springer and Secretary Martin feel well satisfied with their week's work. But for these faithful tollers there is work the year round. In Congress, in State legislatures, before sanitary boards and in a hundred other places the stockman's interests are constantly being promoted and defended by these efficient officers.

More fine, fat cattle were sold for Christmas beef during the week than in

of animals, 50 points. (2) Reasons for placing, 40 points. (3) Method, 5 points. (4) Time, 5 points. Iowa carried off the coveted prize.

The Percheron stallion Chambellan, winner of the championship honors in the free-for-all Percheron class at the International Live Stock Exposition, and winner of first honors at the international shows at Nogent and Verdome in 1901, was sold by Dunham, Fletcher & Coleman, Wayne, Ind., to F. W. Morgan, Beloit, Wis., for \$5,000. His show ring record in Europe, augmented with the championship honors of the International Exposition, gives Chambellan a rank second to no imported Percheron sire in this country.

A handsomely dressed man, accompanied by two ladies, was passing through the cattle barns and admiring the beautiful animals on one of the crowded days of the Exposition. They were evidently city folks and the ladies listened very attentively to the explanations made by their escort. When they arrived opposite big Druid of Castlemilk, with all his prizes hanging about his stall, the gentleman read the label for that division of the cattle show and gravely announced to his lady companions that "these are Mr. Galoway's cattle."

There are thousands of farmers and farmer's wives who could not be present at the great show this year and so missed opportunities for self improvement that would have been of great value to them. But they can and ought to do something. They can take the farm papers that make reports of these great shows. They can visit the experiment stations nearest them and there see how some, at least, of the results which make these exhibitions great are accomplished. They can urge upon their railroad companies the granting of special rates for this purpose. In fact, they can accomplish wonders by united action. Would it pay?

Geo. Leigh, of Aurora, Ill., has 22 imported Herefords en route to his farm that were purchased at the dispersion sales of Tudge and Price in England. There are more of the blood of these famous herds in and about Aurora, Ill., than at any other point in America.

Col. Chas. F. Mills, secretary of the American Berkshire Association, was particularly well pleased with the show and sale of Berkshires and the prosperous conditions of the breed. The 5,000 entries for the next volume of the Berkshire Record were received three months earlier than ever before, which shows the active interest in this breed of swine.

One of the most attractive displays, a side line to the exposition, was that of the Pasture Vaccine Company, of Chicago. It consisted of an artistic exhibit of blacklegline outfits, Lincoln dip, sprayers, etc. Dr. W. A. Rusworth was in charge, assisted by an effective corps of assistants who were busy with numerous old customers from all parts of the country, as well as explaining the merits of their vaccines and other live stock remedies to the interested and ever present stockmen. A Kansas Farmer representative caught a snapshot of the display which we expect to show later.

Imported Druid of Castlemilk, owned by O. H. Swigart, of Champaign, Ill., won the senior sire contest in Galloways at the International. It was one of the notable events of the exposition, Druid having the competition of McDougal 4th, of Tarbrooch, owned by N. P. Clark, of St. Cloud, Minn. The latter is a Scottish champion of this year and had just arrived from Europe, consequently this contest was a duel between the shaggy haired champions of both contests. The judges placed Druid first and McDougal second.

In the Iowa Experiment Station exhibit were shown analyses of a large number of feeding stuffs and these were each illustrated by bottles of various sizes containing the water, fat, protein, crude fibre, etc., resulting from the analysis. Thus were shown, not only the various substances of which the particular feed was composed, but the exact quantity of each. In addition were shown sample bottles containing no less than 34 different products of corn, the whole making a very comprehensive and instructive exhibit of high educational value.

The Wisconsin Experiment Station showed a pair of genuine wild razor-backs in the swine exhibit. These animals were captured in the Indian Territory and proved an attractive curiosity to visitors. In an adjacent pen was a cross-bred razor-back Poland-China, which showed the wonderful possibilities in judicious breeding. This animal had some of the characteristics of the razor-back and many of the Poland-China. It was one of a litter from a pure-bred Poland-China boar and a wild razor-back sow, and was an object lesson that few will forget.

Two Angus steers were considered in connection with "The Woods' Principal," the Hereford which won the grand championship in the fat cattle division. James Peter, the noted English cattleman, who made the award, said: "These 3 animals are the best I ever had the honor of standing over. I have made my decision on the decisive uniformity, weight, and wealth of flesh, the champion being six months younger than the reserve animal and 215 pounds heavier. It is unfortunate that 3 such magnificent animals should be required to compete for one ribbon."

Representatives of the Armour's, of Chicago, recently closed deals for the purchase of more than 200 acres of land across the Missouri River from St. Joseph, Mo. It is supposed the land will be used for packing-house and yard purposes. The ground brought in most instances three times as much as it could have been purchased for two years ago. The Chicago, Rock Island & Pacific Railway closed

deals for the ownership of more than 300 acres of land adjoining that purchased by the Armour's. A Rock Island official announced that the company shops would be established there.

"It isn't possible to produce an animal that can win championships dead and alive," declared Professor Shaw, of the Minnesota Agricultural College, after the judgment of the judge on the hoof had been knocked galley west by the judge on the block in the International carcass tests at Swift & Company's chill room yesterday. "We had a wether," he added, "that we didn't show in the hoof contest at all, owing to her thinness of flesh, but on the block she won first award. As a matter of fact, animals to win ribbons alive must be fat. Unless they are they can not display that perfect development of the type regarded as essential."

Dunham, Fletcher & Golegan, Wayne, Ill., who were represented in the International show with 60 head of Percheron horses, made several prominent sales during the week around old-time prices when the horse industry was at the pinnacle of its greatest national prosperity. They sold to Alderman Frank Fowler, Fourquoi Pas for \$3,500. The firm is reported to have made the sales of 2 other Percheron stallions during the week for the strong prices of \$4,000 and \$5,000, respectively. The demand for draft stallions is of much larger volume than twelve months ago, and prices have also advanced.

The Chicago Live Stock World summarizes the features of show week in this manner:

Phenomenal interest by country people. Realization by railroad managers of the importance of the live stock industry. Gratifying increase in number and quality of the fat cattle displays. General excellence of the agricultural college exhibits.

Marked improvement in the quality of draft horses.

Decided increase in number and quality of feeder cattle from the range country. Any one of these is susceptible of indefinite elaboration and their collective importance will be readily recognized.

One of the results of the second International Live Stock Exposition will probably be the establishment of grand championship classes in all departments. In former years the arguments of those opposed to such a prize class, that the results of such contests would only be the opinion of one man and thereby work hardship to other competing breeders, seem to have been overcome by the opinions of a majority of breeders, who now desire to put their animals into direct competition with the champions of other classes. In such a competition the world would learn the views of experts as to the relative superiority of the different breeds of animals of the same kind.

The work of the agricultural colleges is an object lesson that should appeal to every progressive right-thinking man. Until now they have never been able to demonstrate to the world the great scope of their work in animal husbandry. In the fat stock classes the bulk of the prize money was won by the agricultural colleges. They have demonstrated the advantages of animal husbandry and the value of the balanced ration. They can raise cattle and feed them to win. These exponents of the art of feeding and breeding are worthy all the patronage we can give them. Young men of the country, educate yourselves along these lines; this knowledge is yours for the asking.

How did you like the living pictures of the best representatives of the various breeds and classes of live stock, says the Drovers Journal. Are you not convinced that there is great satisfaction in the feeding and care of such stock to their owners. If there is some little profit in feeding and pasturing the little, profitably nondescript classes of cattle, sheep, and hogs that are to be found in many sections, would such profits not be greatly increased by introducing into the herds of all such sections the blood and bone that broadens and shapes the animal up to the form that best fills the requirements of the demand that affords outlet for stock of all classes at the highest market prices.

Of the 2 loads of grade Hereford yearlings bred and raised in Nevada and exhibited by M. K. Parsons, of Salt Lake City, Utah, one load took first premium in the Northwest Division, and third premium in the sweepstakes, and the other second premium in the Northwest Division. These cattle were part of a lot of 3,000 head that



PERECTION (as a yearling), owned by Tom Clark, Beecher, Illinois
The senior champion of the International Live Stock Exposition for 1901, and the junior champion of the American Royal at Kansas City in 1900.

owned by George Bothwell, of Nettleton, Mo., defeating Cock Robin, the champion of England, owned by I. M. Forbes, of Henry, Ill.

One of the best private sales of the week was made by D. C. Flatt & Sons, of Mill Grove, Ont., who disposed of a pen of 4 large Yorkshire swine for \$1,650. One of the 4 they did not care to part with, and only did so when offered \$700 for it alone, which made a fine average price for the quartet.

Judd Hayden, Lowell, Ind., who has had on exhibition his 3-year-old Percheron stallion, Duke, at Jacob Koehler's barn, made a sale of the animal to L. W. Cochran, Crawfordsville, Ind. Duke is a handsome dapple-grey, with good bone and symmetrical conformation. The price, while not publicly announced, is understood to be around \$1,500.

Texas is at the front on carloads of cattle. The pretty lot of Herefords from the ranch of Mrs. Adair, in Texas, of the famous "J. A.," took the grand championship in the car lot classes. These cattle were shipped from Texas to Ohio when they were calves, but the fact remains that they were bred in the big State and shows what Texas can do.

The National Dairy Cattle Show Association held a short meeting during International show, for the purpose of laying plans and appointing committees in preparation for their exhibit at the St. Louis World's Fair. Much may be expected of them at that time. They indorsed Levi Chubbuck, of St. Louis, for the World's Fair Dairy Superintendent.

Marshall Field, the great Chicago merchant, is now building an addition to his store, which will give him three-fourths of a block. The friends of Mr. Mortimer, who is manager of the Marshall Field herd of Herefords, at Madison, Neb., are positive in their assertions that the \$2,000,000 which this new store will cost was made off the Herefords under Mr. Mortimer's charge.

"Tom" Clark's Perfection (shown in this issue) was aptly named. The winner of the grand Hereford championship at the International this year is undoubtedly king of his kind. He has the air of a champion. Last year he was the junior grand champion male in his breed at the International; this year he is the senior grand champion with victories at Kansas City and other points to spare. His victory at Chicago was hardly unexpected, but it is a crowning feature of the success of that

any one week since the yards were established. Close to 100 carloads of cattle, as good as feed could make them, sold at a range of \$7 to \$12. The tops did not bring as much as they did last year, but the general average was high and exhibitors were well satisfied with results. The public gains by this competition, for more prime meat is put on the market and it is difficult to get too much of it around holiday season.

Mr. C. R. Thomas, the very efficient secretary of the American Hereford Cattle Breeders' Association, is entitled to congratulations. He was re-elected as secretary at the annual meeting of the Hereford Association held during the International, and was also elected president of the National Association of Secretaries of Pedigree Breeders' Associations at its annual meeting held during the same week. Mr. Thomas has proved himself an excellent officer and is well worthy of all the honors that may come to him.

One of the many results of the great International Exposition was the organization of a National Association of Live Stock Agents, which will meet at Fort Worth, Texas, on March 10th next, to perfect their organization by the election of officers, etc. As these hustlers for the several railroads which they represent claim to be factors in the development of the resources of the country rather than mere business solicitors, they will probably be heard from at future Internationals.

Mr. B. O. Cowan, assistant secretary of the American Shorthorn Breeders' Association, is a good man in the right place, as he has abundantly proved by his successful management of the great shows made by the association, and the painstaking care with which his duties are performed. The work of the secretary's office is exceedingly trying and the men who do this work are entitled to more credit than they ever get. Mr. Cowan and the association belong to each other and we hope they may remain together forever.

The annual inter-collegiate judging contest for the Spoor trophy began with 57 entries representing the agricultural colleges of Illinois, Iowa, Wisconsin, Michigan, Indiana, Ohio, North Dakota, and Ontario. Nineteen classes of live stock were judged. Each class was passed upon by a special judge. After the students had made their scores the students' judgement was compared with that of the judges. The following points were used as a basis for grading the students' work: (1) Placing

Mr. Parsons owns. They are strictly range cattle, never having been fed corn or hay, and getting their entire substance from the range.

Admirers of the grand load of fancy Angus 2-year-olds exhibited by L. H. Kerrick, of Bloomington, Ill., winners of first prize in the Angus class, may be eager for an explanation of how they missed the sweepstakes prize.

A Hereford is the grand champion of all breeds in the fat cattle division this year. Chief interest for breeders centered in the winner of the grand championship for breeding bulls.

Andrew E. Cromwell, of Atchison, Kans., invested more than \$8,000 in Aberdeen-Angus cattle at the Dexter Park Combination sale.

It is the duty as well as the desire of every farmer to visit Chicago and see something of the sights of the city and the wonders of her great packing-houses and stock yards.

Many of the prize-winners of the last International again entered the show ring to compete for honors. Hereford aged bulls winning last year were entered in the show in the following order: Dandy Rex, first prize last year, owned by Gudgeon & Simpson, Independence, Mo.

The champion Hereford steer, Wood's Principal, weighing 1,645 pounds, was sold to S. M. Swensen & Sons, 15 Wall Street, New York City, for 50 cents per pound.

When writing advertisers mention Kansas Farmer.

The Armour-Funkhouser Sale.

The public sale of the estate of Kirk B. Armour, of Kansas City, and James A. Funkhouser, of Plattsburg, Mo., held at the Kansas City Stock Yards new sale pavilion, December 10 and 11, was one of the most satisfactory Hereford sales of the year.

A TRIBUTE TO MR. ARMOUR.

At the opening of the Armour-Funkhouser sale, Col. F. M. Woods, the auctioneer, said: "Before beginning this sale I desire to speak a word of tribute to our dead friend who chose this day and helped to plan the details of the sale which is about to begin.

COWS AND HEIFERS.

British Beauty (imp.), calved Jan. 12, 1898; sire, Gold Box; sold to C. B. Wade, Pendleton, Ore., for \$580.

Patty (imp.), (calf at side), calved June 8, 1895; sire, Post Obitt; sold to C. B. Wade, for \$355.

LEADER SWEEP FEED MILL. That will grind ear corn, dry or damp, shelled corn, oats, barley, rye, wheat and all other grades, fine or coarse, as desired.

SEED CORN. Our Iowa grown Seed Corn is thoroughly well matured, tested, and of best quality for Southern Planting.

SEED OATS. Hardy and Reliable SEEDS FOR THE FARM AND GARDEN. We raise them ourselves in MINNESOTA from the best and most carefully selected Seed Stock.

\$7.00 DAILY AVERAGE. Selling easy Pump Governors. They make the hardest working pump work easy.

sire, Fairfax 84159; sold to McNamara & Marlowe, \$475.

KANSAS FARMER.

Established in 1863.

Published every Thursday by the
KANSAS FARMER CO., - - TOPEKA, KANSASE. B. COWGILL.....President
J. B. McAFEE.....Vice President
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I. D. GRAHAM.....Associate Editor
H. A. HEATH.....Advertising Manager

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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.
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Every advertiser will receive a copy of the paper free, during the publication of the advertisement.
Address all orders:

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, Kans.

Of all the Christmas presents which may be bestowed upon a friend none is more appropriate than a year's subscription to the KANSAS FARMER. Under our "blocks of two" proposition this can be done at small cost. It is sure to be appreciated.

The KANSAS FARMER advises every reader to watch for and read carefully the proceedings of the State Grange. Inquiries as to organization may be addressed to Worthy Master E. W. Westgate, Manhattan, Secretary George Black, Olathe, or to Ora Hibner, Olathe. The number of granges should be doubled each year until the State shall be fully organized.

A Washington special to the Topeka Capital states that Kansas is the prominent district infected by the blackleg scourge, but the Government is saving thousands of cattle by its free distribution of free vaccine through the Bureau of Animal Industry. Kansas is not affected more than any other locality, but on account of raising more cattle is more conspicuous than other districts. Our stockmen are not wards of the Government and are able to buy a fresh and reliable article of vaccine from such reputable houses as Pasteur Vaccine Co., and Parke Davis & Co., who advertise and supply the genuine article to most of our stockmen. Free vaccine, like free seeds, is not always reliable or desirable.

CHRISTMAS.

Before the next number of the KANSAS FARMER reaches the reader the greatest of all the holidays will have been enjoyed. Christmas has become eminently the day for the giving of presents. It is a misapprehension of the spirit of this anniversary to make it the occasion for the bestowal of very costly presents. The best conception of the day is carried out by the use of little reminders that friends have not been forgotten. Highly appreciated gifts are those which are the handiwork of the giver. It is gratifying to know that fashion—that most imperious of all sovereigns—now frowns upon costly presents, such as the "newly rich" have

been inclined to bestow upon those whose notice they desired to attract. Such display of wealth was always in bad taste, and is now "bad form" according to the latest edicts of Dame Fashion.

Christmas was for a long time the day especially devoted to presents to the children. The day still gets much of its charm from the delights of the children in their various surprises and other pleasing emotions. But the recognition of the spirit of universal good will proclaimed on the birth of Christ has led to the extension of the favors of Christmas to the old almost equally with the young.

The extra good dinner, the entertaining of friends and the exchanges of tokens of remembrance on Christmas day can have only good influences on the lives of the participants, especially of those who observe the Master's precept "It is more blessed to give than to receive." This has led to the remembrance of the poor and the lonely. But the remembrance of the desolate does not and should not interfere with the joyous festivities and sociabilities which have characterized the celebration of "the turn of the sun from his journey to the South" and have marked the return of the season when the Son of God came upon earth to teach men better conduct one to another.

EXTEND THE CO-OPERATIVE ORGANIZATION.

The work that has been accomplished by the Farmers' Coöperative Grain & Live Stock Association in this State is both interesting and important. At every point where coöperative associations have been formed and shipping conducted by the farmers' associations, wheat has brought 2 to 3 cents more per bushel than at corresponding points where there are no farmers' organizations. The farmers' coöperative organizations have thus accomplished great good.

Grain dealers all over the State have been forced to handle grain on a less margin than they have charged in former years. There can be no question about the future good that can be accomplished by this association with careful and judicious management. The association has demonstrated what can be done by farmers when thoroughly organized.

This is an age of combinations and without doing injustice the farmers may keep step with the associations and combinations of others. The farmers organizations are for self protection and self preservation. They are asking no injustice. The farmers of Nebraska and Oklahoma are now greatly interested in the work that has been done in Kansas and are anxious to get in line with the Kansas people. Why should not the agricultural papers of Nebraska and Oklahoma take the lead in this work as the KANSAS FARMER has done in this State and assist in getting the farmers together in a meeting at some central point to discuss the plan of organization adopted in Kansas?

Should they take the lead in calling a meeting at Lincoln, Nebraska, at the same time the agricultural associations meet at that place, in January, and set aside a day for this work, they could secure the services and assistance of Kansas workers and get the experience of those who have been doing the work of organizing in this State.

The KANSAS FARMER can assure the Nebraska people who desire to organize to conduct a coöperative grain and live stock business that they can secure the attendance and assistance of Mr. James Butler, secretary of the Farmers' Coöperative Grain & Live Stock Association of Kansas, who can no doubt greatly facilitate the work and assist them on account of the experience he has had in coöperative organization.

All can readily see the assistance that other States can give in this work, if organized and brought into line with the farmers' coöperative movement. Nebraska has a number of coöperative elevators and other associations that would no doubt be glad to attend a State coöperative meeting for the purpose of becoming a part of this general movement.

All that is necessary, to secure unity of action in Nebraska is for the agricultural papers, or some agricultural paper, to take the lead and make the call for a meeting, naming in the call, however, that it is for the purpose of organizing on the same line as Kansas is now organized, in order that the farmers may conduct the sale of their grain and live stock, by their own agents, and through their own organization.

It will not be necessary for Nebraska to organize independently. That State can easily join in the Kansas

movement. Kansas wants the assistance of Nebraska and Oklahoma. Believing that the agricultural papers of those States represent the farmer's interests, Kansas asks for their coöperation in this work.

TRIUMPHS OF THE BOOK FARMERS.

Does "book farming" pay? Look at the results. Only a few of the many experiment stations of the United States were represented at the International Live Stock Exposition, but their showing was very creditable. These experiment stations are branches or departments of the agricultural colleges and the students take part in and have access to the experiments as a part of their training.

These students, who, among other things, are taught how to care for and feed live stock scientifically, were invited to attend the greatest live stock exhibition the world has ever seen and prove their training by its results. The animals they had fed were placed in competition with others that had been fed by old and experienced feeders, whose life-long study has been to make the most of each animal; men who study and know the animals as machines by the aid of which they can turn the cheap and crude products of the farm into the much more valuable product of the breeder's art; men who were willing to enter this keenest of contests with the world's greatest and best for the sake of the prestige it would give them; men who knew that it was no disgrace to lose in such a company and who also knew that the mere fact that their animals were named as competitors was ample reward for all the trouble and expense necessary to prepare them.

In such company as this were these "book farmers" placed to win or lose on the results of their work. Did it pay? Again we say, look at the results. Here are some of them:

In the steer or spayed heifer class, 2 years old and under 3, the first prize was awarded to the Iowa Agricultural College; second, University of Nebraska; fourth, Minnesota Agricultural College; highly commended, University of Nebraska. Second prize for champion steer or spayed heifer, was awarded to the Iowa Agricultural College; highly commended, Minnesota Agricultural College. Of the awards on lot of 3 head owned by 1 exhibitor, second went to Iowa; third, Minnesota. In the champion steer or spayed heifer class, 3 years old or over, Iowa was highly commended. In the champion steer or spayed heifer class, 1 year old and under 2, Minnesota as highly commended; Iowa, commended. In the champion steer or spayed heifer class, under 1 year, Iowa was highly commended.

As testing their skill in judging animals these same "book farmers" contested for the valuable Spoor Trophy, and other prizes, and surely it will always be a matter of State pride to every "Hawkeye" that Iowa Agricultural College now owns this \$700 prize.

Such practical results ought to spur the farmers of the several States to see to it that the agricultural colleges lack for nothing that will conduce to their real advancement. They ought to spur the college themselves to broader lines of work in this field. They ought, at least, to spur the college men to attend such exhibitions both in person and by representative exhibits, and they ought to condemn a policy which prevented our own college from even sending one delegate.

THE HAYS RESERVATION EXPERIMENT STATION.

Two committees of Kansas State Agricultural College regents have visited Hays within the past week for the purpose of promoting arrangements whereby the college will acquire complete title to its portion of the abandoned Fort Hays military reservation, and beginning there an agricultural experiment station as contemplated by the acts of Congress and of the State legislature. The homestead claimants on the land, of which there are about fourteen, will be given leases on their claims of from three to five years, according to the extent of their improvements and outlay, in consideration of which they will relinquish in full all rights their settlement on the lands might have given them. When this is done there will be nothing in the way of the agricultural college, and the State Normal School as well, proceeding to utilize the appropriations made for starting their respective improvements as intended.

F. D. Coburn, vice-president of the college regents, is very enthusiastic over the possibilities of having on a

large and decisive scale an experiment station in the western half of the State, right at the naval of the continent as it were, and thinks a failure to make it in time the foremost example of its kind in existence would be an inexcusable and short-sighted folly. The body of land is ample, its quality entirely typical of both the high prairie and the creek "bottom," and its situation in every way superb. He reports the feeling among the people of that section, and particularly the people of Hays, which lively county capital immediately adjoins the reservation lands, as being of the most generous and kindly character towards whatever will conduce to the best interests of the institutions concerned, and they are united in the determination to make each the creditable success hoped for. Their conduct and all the circumstances tend to make the beginning at Hays most auspicious.

AS VIEWED BY CHICAGO DAILIES.

The International Live Stock Exposition at Chicago was held for the purpose of giving to the world a great object lesson of what has been accomplished by the breeders' art. While it included but four classes of improved stock—beef cattle, including "dual purpose" cattle, draft horses, sheep, and swine, it was as valuable for its purpose and far less cumbersome than if the dairy breeds of cattle and the trotting and running horses had been included. It was educational in purpose and character and needs no apology for its existence. Besides the thousands of people who saw the exposition and who were directly benefited by it there were other thousands who could not be present and who will have to depend upon the press for their information. And the press, as everybody knows, always tries to supply information to those who want it.

Some of the attempts made by the big dailies of Chicago to enlighten their readers about draft horses and beef cattle would have been pathetic if they had not been so funny.

One paper begins its write-up by printing cuts of 4 Jersey cows and 1 calf and then runs in cuts of some drawings of horses made to illustrate a packing house calendar. At the same time the writer says:

"The International Live Stock Show is in an extraordinary sense a great 'school.' Its predecessor—the one of last year and the first ever held in Chicago—disseminated more information about food-producing and work-performing animals than any other one thing has ever done before in the United States."

This is all true and well said, but when he warms up to his work and announces that "In the pavilion evening shows there are to be exhibitions of trotters and all kinds of blooded horses, fancy driving, animal parades and arena exhibits that will tickle the fancy of the public," he evidently means that any horse that can trot is a trotter, that any horse that can be driven is a driver, and, probably, that any horse that has blood in his veins is a "blooded" animal.

Then he says, "The show itself will contain the following main features:

"In horses: Percherons, Clydesdales, Belgians, Shires, Suffolks, drafters in harness, horses shown to cart and wagon, private blooded teams, blooded pacers, trotters, runners, and jumpers, prize breeders." He probably means to say that any horse that can draw a buggy immediately becomes a draft horse.

And then:

"In cattle: Jerseys, Alderneys, Durhams, Herefords, beef and milch cows, breeders in bulls, cattle for export and cattle for the home market, range-fed cattle and meadow-fed, long and short horns."

Think of it. Jerseys and Alderneys in a beef cattle exhibition, and "long horns" in a pure-bred exhibit. Being "meadow-fed" may, however, make a difference in the growth of horns. On the other hand it may be due to a totally different cause as here stated:

"As in recent years a large number of foreign cattle have been brought to this country and inbred with American cattle, an interesting investigation as to the results in this direction is also expected."

Wouldn't the results be interesting even to a newspaper man?

In order that his readers may know just where to find these results he gravely announces that "From Montana to Texas blooded cattle have been coming in during the last few days in excessive quantities." Blooded cattle from Montana and Texas is pretty good. There are others.

Brain Markets.

Conducted by James Butler, Secretary of the Farmers' Co-operative Grain and Live Stock Association.

"The human race is divided into two classes,—those who go ahead and do something, and those who sit still and say why wasn't it done the other way."—Oliver W. Holmes.

Grain Market to 2 p. m., December 17, 1901.

Markets were easy at all of the exchanges to-day, and closed as follows: Chicago.—No. 2 red wheat, 79 1/2-81c; No. 2 hard wheat, 76 1/2-77c; No. 2 corn, 64 1/2c; No. 2 oats, 46c.

Market Letter.

BY F. W. FRASIUS, OF THE FARMERS' CO-OPERATIVE GRAIN AND LIVE STOCK ASSOCIATION.

Topeka, Kans., December 16, 1901.

Since writing my market letter last week, wheat has declined about 3 cents, which was a natural reaction after the rapid advance early in the month. There has really been no change in the situation, the conditions are just the same as they were a month ago.

Exports have been falling off some. They always do at this time of year, but they will no doubt increase again before long. One of the Standard trade journals in Europe, The Mark Lane Express, has this to say: "The big shipments from America do not trouble us much because the proportion that falls to the share of the United Kingdom is no more than it needs, and the fact that the larger part of these shipments is finding its way to the continent, proves that the wheat is going to fill real want and is not dumped down on a gorged market."

The visible supply is increasing, at least it is so manipulated, that it shows an increase this week of over 4,000,000 bushels, and is now 59,356,000 bushels. On the other hand receipts of wheat in the Southwest are very low and steady decreasing; Kansas City had only 77 cars to-day against 283 cars a year ago.

ly decreasing; Kansas City had only 77 cars to-day against 283 cars a year ago. In fact, I see nothing in sight to discourage the holders of wheat.

Read this Carefully and Act Accordingly.

It is safe to say that the bulk of the wheat has passed from the farmer's bin, but their bins are not all empty. Few are those who have wheat in car load lots to sell, but many are those who have wheat in wagon load lots to dispose of. Now, kind reader, why not ship your own wheat and save for yourself the profit that now goes to the trust. If you have not enough wheat of your own, get your neighbors to join with you, load a car and ship it to The Farmers' Co-operative Grain & Live Stock Association. Don't wait for your neighbor to come around and see you about this matter. Go and see him. And you will bless the hour beyond a shade of doubt when you shipped your own farm products and knocked the grain trust out.

Farmers have been shown the good that can be accomplished by a business organization through which they can sell their surplus products. The work so far accomplished has been at a small cost—with practically no funds with which to conduct and push an enterprise of such magnitude. But it simply shows what could be done if the farmers would invest the benefits received for just one year.

If the elevator combine can divide the farmers' patronage and thereby discourage the farmers' movement by creating discord and confusion, they know that disorder and dissention is sure to follow, and will here, as it has done elsewhere, result in failure. If the farmer bites at the bait thrown out for suckers, the trust will win. You can seldom play the other fellow's game and win.

If there is a farmer in this State who believes that the local co-operative associations can win this battle against the grain trust, by each standing independent and alone, I would like to have his name. I do not believe there is a man in the State stupid enough to publicly take such a position. If there is such a person, I will gladly give their views publication.

There were hundreds of elevators built by the alliance and operated independently of each other. They had no central organization and one by one they failed. There is not one operating in the State now that I know of. Co-operative elevators must work intelligently together, through a central organization, if they hope to succeed.

I believe that the farmers should combine to protect their own interest and secure equity in the market.

POULTRY BREEDERS' DIRECTORY.

FOR SALE—White Holland turkeys; toms \$1.50, hens \$1. H. M. Harrington, Clearwater, Kans.

FOR SALE—White Holland turkeys. Egg orders booked. Annie D. Galbraith, White City, Kans.

FOR SALE—Choice blue-barred Plymouth Rock cockerels, \$1 to \$1.50 each. Address Mrs. L. Hothan, Carbondale, Kans.

BARRED ROCK COCKERELS at reasonable prices. Write for what you want. Score card with all birds. Standard bred. John C. Snyder & Sons, Kildare, Okla.

FOR EXCHANGE—Partridge Cochins pullets and cockerels—very fine; and B. Rock pullets, for Buff Orpingtons or White Wyandottes. Young stock only wanted. O. P. Wingrove, Morganville, Kans.

MARKET REPORTS.

Kansas City, Dec. 16.—Cattle—Receipts, 3,946; calves, 369. The market was strong to 10 cents higher for steers and cows were 10 to 15 cents lower. Representative sales:

Table with columns: No., Ave. Price, No., Ave. Price. Rows include SHIPPING AND DRESSED BEEF STEERS, WESTERN STEERS, TEXAS AND INDIAN STEERS, TEXAS AND INDIAN COWS, WESTERN COWS, NATIVE HEIFERS, NATIVE COWS.

Hogs—Receipts, \$300. The market was steady to 10 cents higher. Representative sales: No. Av. Price, No. Av. Price.

Sheep—Receipts, \$237. The market was steady to 10 cents lower. Representative sales: No. Av. Price, No. Av. Price.

Chicago Live Stock. Chicago, Dec. 16.—Cattle—Receipts, 16,000. Good to prime steers, \$8.10@7.60; stockers and feeders, \$2.00@4.25; Texas fed steers, \$4.50@6.30.

St. Louis Live Stock. St. Louis, Dec. 16.—Cattle—Receipts, 2,500. Native steers, \$3.50@4.35; stockers and feeders, \$2.40@3.75; Texas and Indian steers, \$4.00@6.10.

Omaha Live Stock. Omaha, Dec. 16.—Cattle—Receipts, 2,600. Native beef steers, \$4.00@6.75; western steers, \$3.75@6.40; Texas steers, \$3.50@4.40; stockers and feeders, \$4.30.

Kansas City Produce. Kansas City, Dec. 16.—Eggs—Fresh, 2 1/2 doz; country held eggs, 1 1/2 doz.

Poultry—Hens, live, 6c; roosters, 20c each; springs, 6 1/2c lb.; ducks, young, 6c; geese, 4c; turkey hens, 6c; young, weighing over 7 lbs., 6c; young geese, 5c; pigeons, 50c doz.; squabs, \$1.25@2.00 doz. Choice scalded dressed poultry is above these prices.

Game—Rabbits, drawn, 75c per doz.; jack rabbits, undrawn, per dozen, 75c.; squirrels, 50c; frogs, 50c@2.00 per dozen; plover, 75c@1.00 per doz.; jack snipe, 75c@1.00 per doz.; sand snipe, 25@40c per doz.; ducks, mallard, per dozen, \$3; red head, \$3; canvas back, \$2; teal, \$2; mixed, \$1.50.

Potatoes—\$1.10@1.20 per bushel in small lots; car lots, \$1.00@1.04; sweets, \$3.00@3.25 per barrel.

Fruit—Apples, \$1.00@5.00 per barrel; cranberries, \$7.50@9.00 per barrel; California pears, \$2.25@2.60 per box.

Vegetables—Navy beans, \$2.20 bu.; cabbage, \$1.00@1.75 per cwt. Onions, 90c@1.10 bushel in job lots; beets, 40@60c bu.; turnips, 15@25c bushel.

"GET A DANDY"

the fastest cutting bone cutter made, and double your egg yield. Sold direct on 30 days trial. \$5 up. Catalogue free.

A MILLION TESTIMONIALS 30 DAYS TRIAL WILL CONVINCE. Our 50 egg compartment hatching incubators have advantages over all other incubators. Bantams at \$5, \$9.50 and \$15 for 50, 100 and 200 egg sizes. Hatch every good egg. Send 2 cents for No. 14 catalogue.

BELGIAN HARES...

Belgian hare fry beats chicken, and a good breeding pair of hares will keep you supplied all the year round. I can supply you in the finest breeding stock at \$8.50 per pair; \$5 per trio, until further notice.

VICTOR INCUBATORS. The simplest, most durable, cheapest first-class hatching. Money back if not as represented. Circular free; catalogue 6c. We pay the freight. GEO. H. STAHL, Quincy, Ill.

200-Egg Incubator for \$12.80. Perfect in construction and action. Hatches every fertile egg. Write for catalogue to-day. GEO. H. STAHL, Quincy, Ill.

DO IT YOURSELF. We have made plenty of money in the poultry business and have grown from year to year until our Millbrook Farm is now the largest pure bred poultry establishment in the country. Our new year book "Poultry for Profit" will start you right. All about breeding, feeding, etc. Cuts of fowls with prices; eggs in season. Book has cost too much money and experience to be given away, but we will let it for 10 cents.

This Season, with short feed and high prices is the time to buy a feed cooker. THE RELIABLE Stock Food Cooker and Water Heater Combined will give the most satisfactory results. Price and sizes: 25 gals. \$5; 35 gals. \$8; 50 gals. \$12, and 100 gals. \$18. Catalogue mailed free.

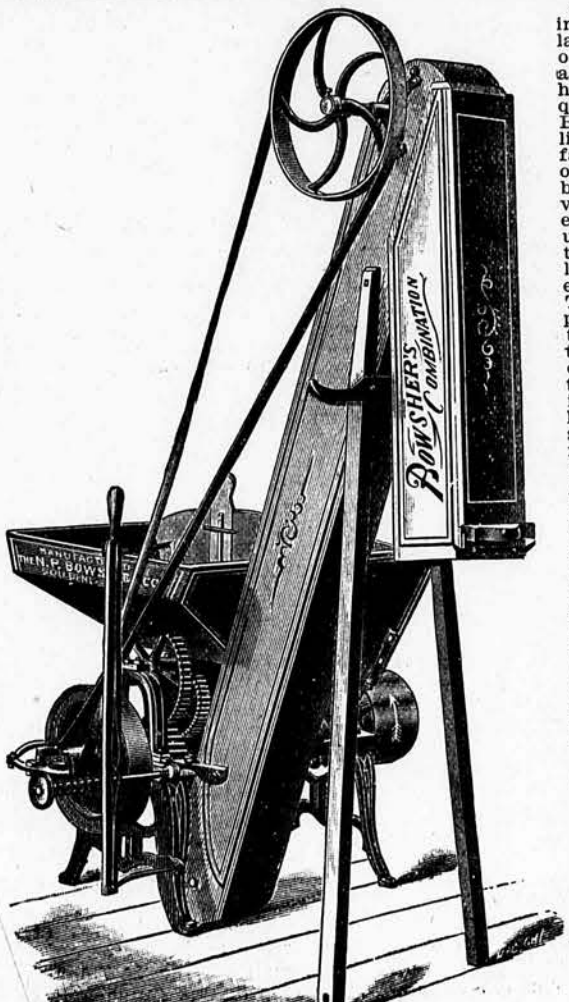
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THE ALL ROUND INCUBATOR. THE IOWA. has no Cold Corners but equal heat and ventilation in the egg chamber. Our methods are endorsed by prominent poultrymen because they succeed when others fail. Our FREE Catalogue will prove our claims. IOWA INCUBATOR COMPANY BOX 57, DES MOINES IOWA



Good management is of more importance than the growing of large crops with wasteful methods of feeding. It is not the amount you feed so much as how you feed it that settles the question of wise feeding. Booming prices for all kinds of live-stock products is a winning factor, yet in seasons like this, one should get from every blade and kernel all the feeding value there is in it. When everybody has all the feed he can use a few bushels do not matter, but this season in particular a good feed mill is almost essential to business success.

SAVE \$10.- PER COW

EVERY YEAR OF USE. DE LAVAL CREAM SEPARATORS Prices \$50.- to \$800.- "Alpha" and "Baby" styles. Send for Catalogue. THE DE LAVAL SEPARATOR CO. RANDOLPH & CANAL STS., 74 CORTLANDT STREET, CHICAGO. NEW YORK.

In the Dairy.

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

Profit in Maintaining the Milk Flow.

PRESS BULLETIN NO. 106, FROM DEPARTMENT OF DAIRY HUSBANDRY, EXPERIMENT STATION, MANHATTAN, KANSAS.

It will pay to keep up the flow of milk even though feed is high. Press Bulletin No. 102, from this station, shows that 16 1/2 pounds of wheat straw and 4 pounds of ground wheat per day will maintain an average cow. The present low price of stock cattle with every prospect of high prices in the spring should induce farmers to hold their cattle, even though feed is high priced. How much more feed will it require to obtain a good flow of milk has been the subject of investigation at the Kansas Experiment Station. Three cows representing a fair average of our Kansas milch cows were fed wheat straw, ground wheat, and cottonseed-meal. The cows were accustomed to the cottonseed-meal gradually by starting with 1/2 pound and increasing 1/4 of a pound daily until the maximum of 4 pounds per day per head was reached. This transition period required fourteen days. As these cows had been receiving sorghum pasture and alfalfa hay they did not relish the straw at first and were allowed 52 pounds of alfalfa hay each during the transition period. The following figures give the results in the production of butter fat:

Daily production of butter fat per cow previous to experiment, thirty days, .74 pound.

Daily production of butter fat per cow during transition period, fourteen days, .70 pound.

Daily production of butter fat per cow during experiment, thirty days, .62 pound.

The reduction of .1 pound in the daily production of butter fat is accounted for in the sudden change from succulent pasture to dry straw and the increase in the lactation period. After the cows were accustomed to the change the production of milk and butter fat was fairly uniform.

During the thirty days under experiment these three cows consumed:

Table with 2 columns: Item, Quantity. Wheat straw...1,410 pounds. Ground wheat...690 pounds. Cottonseed-meal...244 1/2 pounds.

According to experiment reported in Press Bulletin No. 102 these cows would consume as much or more straw and 360 pounds of wheat of the above grain as a maintenance ration. This leaves 230 pounds of ground wheat and 244 1/2 pounds of cottonseed-meal to be charged against the butter fat account. At \$1 per hundredweight for wheat and \$1.50 per hundredweight for cottonseed-meal this would amount to \$5.96. During this time these 3 cows produced 56.2 pounds of butter fat. At 17 cents per pound (the price promises to be considerably higher during the winter) the financial account stands as follows:

Table with 2 columns: Item, Value. Value of 56.2 pounds butter fat...\$9.55. Cost of feed...5.96. Total profit...\$3.59. Profit per cow...\$1.19.

In the above account the skim-milk is to pay for the hauling. With good management it will more than do this.

It will be noticed that this experiment represents an extreme case. Nearly every farmer has some corn or Kaffir-corn fodder, millet, sorghum hay, prairie hay, red clover, alfalfa, oat hay, or even oat straw that he can use instead or in place of part of the wheat straw with much better results. Any of these rough feeds will enable the dairyman to reduce the amount of grain needed. Where red clover or alfalfa is available little or no cottonseed-meal is required.

By feeding his milch cows on a milk



ration a farmer will not only save more money than he would to winter them on a maintenance ration, but he will keep his cows in the habit of giving milk (a very important point), will help to keep his creamery, skimming-station, and cheese factory operating on a paying basis and will have his cows on hand as a paying investment in the spring. If he then desires he can dispose of any of his surplus stock at high prices. D. H. O.

Records of Individual Cows, Pan-American Exposition.

Table with 2 columns: Cow Name, Butter Profit. Lists various cows like Mary Marshall, Guernsey, Mayflower, Red Polled, etc., with their respective butter profit values.

Following is the official record of the 10 herds:

Table with 4 columns: Breed, Butter fat, Churned butter, Total solids. Lists breeds like Guernsey, Jersey, Ayreshire, Holstein, etc., with their respective production statistics.

Washing Milk Cans—Continued.

ED H. WEBSTER.

Bacteria, or germs, grow best under certain conditions just as do wheat and corn.

Corn must have warmth, moisture, and food on which it can live and thrive. Deprive it of any of these and the result is disastrous to the corn, as we can all of us testify as to the lack of moisture the past season. These three things have certain proportions or degrees at which the corn thrives best. Just so it is with bacteria.

Milk makes an excellent food for this minute plant because it supplies food in most available form and of proper kind for best and most rapid development of the species we are concerned with in dairying.

The temperature at which bacteria grows best ranges from 60° to 110°.

Now, suppose we wash a can in lukewarm water and turn it up to drain. We have supplied just the right conditions of temperature and moisture for the germs to grow and in all probability the water left on the sides of the can will be milky, thus supplying an abundance of food. The can is seeded thoroughly, so to speak, with germs which will begin at once on fresh milk when put into it. Bacteria, like many of the larger plants we see about us, can stand great degrees of cold but can not survive great heat. So here is the key to their destruction. You must destroy them by heat. For this boiling water is the farmer's best weapon, unless he be supplied with a steam boiler and can turn live hot steam into the cans. The water must be absolutely boiling hot, nothing less will do the work perfectly.

This boiling water acts in two ways, it kills the germs and makes the metal so hot that when the water is poured out the can dries very quickly and thus removes the conditions of moisture necessary for the development of other germs which may get in before it is used again.

The best method to proceed, then, would be to first wash the can in warm

To make cows pay, use Sharples Cream Separators. Book "Business Dairying" and Catalogue \$27 free. West Chester, Pa.

WE LEAVE IT TO THE READER TO SAY "WHO JUGGLES," AND

Who "Bobs up with one lie after another."

It is characteristic with that class of people to lose their tempers and call names because they have no good arguments and must depend on bluffing. Our "would-be competitors" are squirming terribly because the United States beat the DeLaval in the Model Dairy at the Pan-American, and are resorting to all sorts of schemes to break the force of the victory of the United States over the DeLaval Separator.

They say we put out "what purports to be a skim-milk record of the work done by the 'U. S.' machines in the Model Dairy." We gave the exact statement signed by the Superintendent of the Model Dairy, namely: Average test of the U. S.—.0138.

They published a statement also signed by the Superintendent of the Model Dairy showing average of .0161. The Superintendent afterwards found he had made an error, and stated over his own signature the correct average for the DeLaval was .0172; but these "would-be competitors" do not correct the error, but continue to advertise the figures which they know to be wrong.

The DeLaval Company published their second period of running, which was in the best season of the year, from August 9th to September 28th inclusive. We published our second period from September 29th to October 30th inclusive. All experienced dairymen know that the U. S. had the hardest milk to separate, as the cows were longer in milk, giving less quantity, and cold weather coming on; yet, with all these conditions against the U. S., it excelled the DeLaval, as the Superintendent's reports show. (It also beat the DeLaval in the first period, after adjustment.)

The DeLaval statement reads "Tests were from August 9th to September 28th," but the record books of the Model Dairy show no record was made until the 11th of August. This gives them two days to adjust the machine under the friendly expert operators before any tests were recorded.

Our statement includes the first run of our machine with no time allowed for adjustment.

The records after adjustment of the first period show that the United States beat the DeLaval on these runs also.

The DeLaval Company being aware they were beaten in the first period, sent their machine back to the factory to be fixed over and improved, if possible, for a second trial. This machine was one made special for that work. The U. S. was taken from regular stock and was returned to its booth after the first run and remained there until we were requested by telegraph from the Superintendent of the Model Dairy to put in the U. S. to make a second run. We wondered why the necessity for telegraphing such a request, but telegraphed back we would comply with the request. We learned later that the DeLaval was shaking so badly that it was not deemed safe to run it longer, therefore the necessity for arranging by telegraph to replace it with the U. S.

The DeLaval Separator is a top-heavy machine filled with 40 to 50 metal discs, and when they get out of balance, cause trouble if continued in use. Therefore the necessity for immediate change when it begins to shake. They claim to run on slow speed, but always, when in competition with the U. S., attempt to run at very high speed—sometimes more than 50 per cent higher than they advertise to run. They know that their separator can not run at high speed long, so run it at high speed only in tests with the U. S.

The U. S. is made more substantially, and does stand high speed, and runs longer and easier at its speed than the DeLaval does at its claimed lower speed.

The DeLaval Co. advertise a "voluntary" (?) statement purporting to be from the engineer of the Model Dairy in which he says, "it took but one-fourth as much steam to do our work with it (DeLaval) as the 'United States' used." Such a statement is so ridiculous on its face that no experienced dairyman would doubt that it was voluntary on the part of the DeLaval Co.

We have hundreds of statements from dairymen, who have used both separators; that the U. S. runs easier than the DeLaval, and wears much better.

The truth is that Engineer Downy was never present when the U. S. was running, with one or two exceptions, when

his Department was unable to get sufficient steam to run so much as a Babcock Tester until very late in the forenoon. The work in the Model Dairy was done before he got around in the morning.

Now read what Mr. Van Alostyne, Superintendent of the Model Dairy, over his own signature, says in reference to power in September when the DeLaval was running:

"We found the power insufficient, and were obliged to put a cut-off in the pipe leading upstairs to prevent the herdsmen drawing on our steam at times when we needed it for the dairy work, and as the weather became colder the latter part of September, this trouble increased to such an extent that one day, with both burners lighted, we found our steam entirely out, so that we intended making a change before your machine was put in, and we were delayed a week in order to get the consent of the proper authorities. We then used soft coal, which did not give satisfaction, because it filled up the flues of the boiler, and we changed to coke, which has been eminently satisfactory."

Remember this was when the DeLaval Separator was running and before the U. S. was put in. They could not get steam enough to run the DeLaval.

This "voluntary" (?) statement says further "that the 'U. S.' had an expert to run it." He was in no sense an expert, had never worked in a creamery or dairy or attended a Dairy School or Experiment Station. The DeLaval did have experts to run theirs. Both operators were graduates and rank partisans of the DeLaval, and were angry because we objected to having unfair and prejudiced operators run the U. S.

The DeLaval Co. advertise that our Gold Medal was awarded on "combined exhibit of separators, Babcock Testers, Davis, Swing Churns, and other apparatus." The official record reads: "Gold Medal on U. S. Separator, Babcock Tester, Davis Swing Churn." It does not read on "combined exhibit" and does not use the word "exhibit" in any way. The reader will notice the DeLaval Co. add the words "combined exhibit" and "and other apparatus," of course, to mislead in their endeavor to break the force of their defeat.

We have in our booth nine separators, two Babcock Testers, and a model of the Davis Swing Churn, but no full-sized churn. Our booth was 15 feet long by 10 feet deep.

We applied for larger space, but were informed that the building was limited in size and we must be content with what was assigned us. We had the smallest space of any exhibitor of separators. The DeLaval Co.'s booth was 35 feet long by 10 feet deep and contained sixteen separators; therefore, if our Gold Medal was on the exhibit, it is equally true the DeLaval's was on their exhibit, and as our exhibit was less than half as large as theirs, will the intelligent reader believe the DeLaval statements that with less than half the space and about half the amount of goods, our award was on display?

The work in the Model Dairy was not finished until long after the Gold Medals were awarded by the judges. If the awards had been given on the result of the work in the Model Dairy, the United States would have had the only Gold Medal, and the DeLaval an award of second merit only, a Silver Medal, as it came out second on the work there.

The DeLaval Co. advertise "that more fat was lost in churning (by the U. S.) than saved in separating." The records show that

Table with 2 columns: Item, Value. Average test of the buttermilk from the United States was... .109. Average test of the buttermilk from the DeLaval was... .121.

The DeLaval was badly beaten again in this line. The U. S. proved to be superior in every way.

The reader must not forget that the DeLaval Co. have been advertising for over a year that the DeLaval Separator was awarded a Grand Prize at Paris, but now admit in their advertisements that this award was to the "Societe Anonyme Separator," which company exhibited at Paris a butter extractor called a radiator, and did not exhibit a cream separator.

For proof of our statements we refer to the official records.

VERMONT FARM MACHINE CO., - - Bellows Falls, Vt.

water to remove the milk as much as possible and then scald with boiling water to thoroughly cleanse the can and put it in condition to dry quickly.

One of the best disinfectants known is bright sunlight. It kills all kinds of bacteria and stops their growth. Thus we can bring the weapon provided by nature in such great abundance to our aid. Set the cans in the sunshine so that it can enter the can after it has been washed and scalded and we will be sure to have no trouble from our milk souring.

For washing a can a dirty dish rag is the worst thing to use. It is full of germ life and we merely wipe the germs about and do not cleanse our can. Nothing is better than a hand brush made for the purposes, such as creameries and skimming-stations use. A brush can be kept clean and it reaches into cracks and such places that a rag will not reach.

What has been said so far in regard to the milk-can is true of all our dairy utensils. The remedy for sour or spoiled milk is cleanliness, which means freedom from the germs which cause the souring or other trouble.

Useful Spiders.

S. FRANK AARON, IN SCIENTIFIC AMERICAN.

We should all try to understand the economy of nature. The time will surely come when we shall learn to regard all common forms of matter in their true character, when we shall realize that everything has its place in the great scheme, and when this understanding will fully influence our attitude toward creatures great or small, to us ill-favored or beautiful, beneficial or injurious. There is now much ignorance, often indifferent to truth, still oftener influenced by mere sentiment, concerning those creatures that have, often unaccountably, become to us loathsome and disgusting.

Spiders, for example, as with snakes and lizards, as well as many insects are objects of almost universal antipathy. They are popularly believed to be harmful, poisonous, worse than useless, fit only to be shunned, feared, or trodden on. Few, even of the most sensible people, take any interest in spiders except to inquire as to their venomous qualities.

It must be admitted, of course, that their appearance is not in their favor. Few animated objects are more repulsive to the sight than the so-called tarantula of the tropics, a huge member of the spider family, and when to its ugliness is added its supposed poisonous character, it becomes a proper object of aversion. The great, hairy-legged spiders of temperate climes are almost equally unsightly, and the popular notion endows them with venomous power, whether they deserve it or not. Even their handiwork, their delicate and truly wonderful webs of gossamer, are unnoticed except to be trodden down on the lawn, or brushed from the walls with the broom.

But it can be readily proved that spiders are rarely, if ever, poisonous or even harmful, that certain species are really useful and beneficial, and that they all play an important part in the great scheme of nature. Their chief service to man lies in their destruction of noxious insects. "To be sure," says the reader, "spiders kill flies, and flies are a nuisance." True, and flies are not only a nuisance; they are carriers of disease, spreaders of pollution. Spiders also kill mosquitoes, moths and other flying and crawling pests that stray into their webs.

The grassy-bank spider, Agalena nœvia, whose dew-spangled web is often seen on the lawn in the early summer mornings, preys upon many kinds of noxious insects. A larger species of Agalena, common in woods and about stone piles and fences, makes larger and stronger webs, in which bigger insects, such as locusts, grasshoppers, and June-bugs, are often trapped. The webs of all the Agalenas lead down into dark and secret tunnels where the spider retreats when danger threatens. Even the sudden visit of a wasp or a bumble-bess will sometimes drive the owner of the web into this hiding place.

The jumping spiders (Attus) are also active fly-catchers and destroyers of noxious insects. They build no web except a very small receptacle in which to hide their eggs and to protect their young when hatched. They are the tigers of the insect world, springing upon their prey with true feline energy. The orb-weavers, Epeira, are equally useful to man, and their webs reach the highest development of mechanical skill.

It is worthy of note that insects injurious to man form the chief prey of the orb-weaving and grassy-bank spiders, as well as of the jumping species. It is true that beneficial insects, such

as ichneumon flies, dragon flies, and predaceous beetles, may stray into their nests, but the noxious flies, the caterpillars, grasshoppers, and leaf-eating beetles are their far more numerous victims.

But the most useful of all our spiders are those which prey upon the caterpillars that infest our shade and fruit trees and destroy their foliage. Attached to the branches of trees, particularly to the cherry, apple, maple, elm, ash, and linden, may often be seen large, unsightly webs or nests, sometimes covering a good-sized branch. These nests are constructed by the larvæ of several kinds of web-worms, and each nest is the home of a colony of the worms, hiding there by day, and crawling forth at night to devour the surrounding leaves. A single web often contains hundreds of these worms, and were it not for a few spiders that also inhabit the nest and suck the life-blood of the caterpillars, the latter would undoubtedly increase in such numbers as to strip our fruit and shade trees almost bare of foliage. The webs which protect the caterpillars from birds also enable the spiders to feed in safety upon their prey. No web-worm's nest is free from its spider parasites.

The willow web-worm, a closely allied species, found not only on willows but also on our common silver poplars, folding the leaves together in a smaller web, also has its spider parasites. But these intruders are by no means all of the same species. Some webs contain Attus spiders only; others harbor a spider with longer legs resembling the Epeira; and still others are infested by a spider of greater size. I have even seen all these various kinds living in the same nest and devouring the unfortunate caterpillars at their leisure. This would seem an exception to the rule that "two of a trade can never agree."

The actual number of individual spiders in any one nest is never large, seldom more than four or five. It is remarkable that so few spiders can destroy so many caterpillars. They begin when the latter are very small, sucking their juices rapidly one after another and always leaving their bodies to dry up. It is probable that when a spider attacks a full-grown caterpillar, it absorbs only a part of the vital fluid—enough, however, to cause death. In many cases, the few spiders in such a nest manage to destroy every worm in the colony, leaving not one survivor.

May we not then realize that spiders can justly be classed among our most useful and beneficial forms of life? Too much can not be said in favor of protecting from destruction our insect-eating birds. But may not our humbler friends, the spiders, also enjoy our favor? Yet they can well protect themselves, and we can best promote our own interests by simply and fairly letting them alone.

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water to remove it possible and then water to thoroughly put it in condition t

One of the best is bright sunlight. bacteria and stops we can bring the nature in such great aid. Set the cans that it can enter t been washed and se sure to have no trc souring.

For washing a ca is the worst thing t germ life and we me about and do not cl ing is better than a l the purposes, such skimming-stations u kept clean and it and such pieces t reach.

What has been se to the milk-can is t utensils. The remed milk is cleanliness, dom from the germ souring or other tr

Useful S

S. FRANK AARON, IN S

We should all try economy of nature. ly come when we sl all common forms true character, whe that everything has great scheme, and standing will fully tude toward creatu to us ill-favored or i or injurious. Ther nance, often indiff oftener influenced t concerning those c often unaccountabl loathsome and disg

Spiders, for exam and lizards, as wel are objects of alm cathy. They are pop harmful, poisonous, fit only to be shun on. Few, even ble people, take any except to inquire as qualities.

It must be admitt their appearance is Few animated objec sive to the sight th antula of the tropic of the spider family, ugliness is added it ous character, it be ject of aversion. T ged spiders of temp most equally unsmi notion endows the power, whether the Even their handi and truly wonderful are unnoticed exce down on the lawn, c walls with the broo

But it can be r spiders are rarely, if even harmful, that really useful and b they all play an im great scheme of ni service to man lies of noxious insects. the reader, "spiders are a nuisance." Tru only a nuisance; t disease, spreaders of also kill mosquitoes flying and crawling into their webs.

The grassy-bank via, whose dew-spa seen on the lawn ir mornings, preys up noxious insects. A Agalena, common i stone piles and fence stronger webs, in w such as locusts, gras bugs, are often tra all the Agalenas le and secret tunnels v treats when danger the sudden visit of a bess will sometimes the web into this hi

The jumping spide active fly-catchers noxious insects. T except a very small to hide their eggs a young when hatche tigers of the insect v their prey with true orb-weavers, Epeira, to man, and their w est development of

It is worthy of n jurious to man forn the orb-weaving an ders, as well as of t It is true that bene

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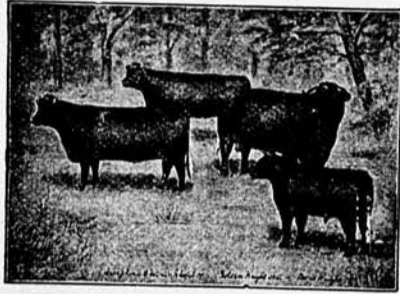
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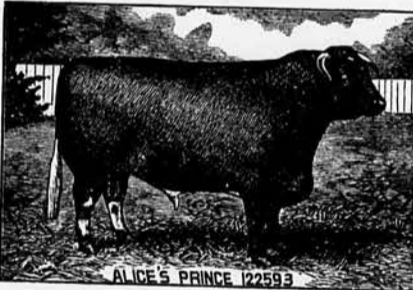
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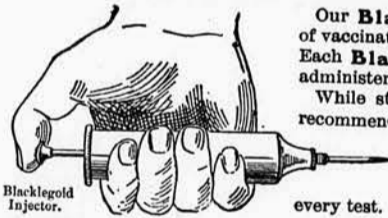
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