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BREEDERS' DIRECTORY.

Cards of four lines or less will be inserted in the Breeders' Directory for \$15 per year or \$3.00 for six months; each additional line, \$2.50 per year. A copy of the paper will be sent to the advertiser during the continuance of the card.

HORSES.

PROSPECT STOCK FARM.—Registered, imported and high-grade Clydesdale stallions and mares for sale cheap. Terms to suit purchaser. Thoroughbred Short-horn cattle for sale. Two miles west of Topeka, Sixth street road. H. W. McAfee, Topeka, Kas.

CATTLE.

ENGLISH RED POLLED CATTLE AND COTS-wold Sheep.—Young stock for sale, pure-bloods and grades. Your orders solicited. Address L. K. Haseltine, Dorchester, Green Co., Mo.

NEOSHO VALLEY HERD OF SHORT-HORNS.—Imported Buocaneer at head. Registered bulls, heifers and cows at bed-rock prices. D. P. Norton, Council Grove, Kas.

H. W. CHENEY, North Topeka, Kas., breeder of **HOLSTEIN-FRIESIAN CATTLE.** Farm four miles north of town.

VALLEY GROVE HERD OF SHORT-HORNS.—For sale, choice young bulls and heifers at reasonable prices. Call on or address Thos. P. Babst, Dover, Kas.

HOLSTEIN-FRIESIANS
From this herd were furnished some of the winners at the World's Fair. Write for catalogue.
M. E. MOORE, CAMERON, MO.

SWINE.

V. B. HOWEY, Box 103, Topeka, Kas., breeder and shipper of thoroughbred Poland-China and English Berkshire swine and Silver-Laced Wyandotte chickens.

MAPLE GROVE HERD OF FANCY BRED POL-and-China swine. Also Light Brahmas fowls. Owned by Wm. Plummer & Co., Osage City, Kas. Stock of all ages for sale at reasonable rates.

TOPEKA HERD OF LARGE BERKSHIRES.—Breeders strong-framed, growthy and prolific; eight to fourteen pigs to a litter this year. Boars and sows of all ages ready to ship. H. B. COWLES, Topeka, Kas.

J. F. THOMAS, MAPLE CITY, KAS., breeder of registered **POLAND-CHINA SWINE AND FINE POULTRY.** Stock for sale cheap. Mention FARMER in writing.

OHIO IMPROVED CHESTER SWINE—Pure-bred and registered. Stock of all ages and both sexes for sale by H. S. Day, Dwight, Morris Co., Kas.

SWINE.

BERKSHIRES.—Wm. B. Sutton & Sons, Rutger farm, Russell, Kansas. Special prices to immediate buyers on young boars, ready for service, and young sows bred or unbred. Splendid individuals and choicest breeding.

TROT, Abilene, Kas.—Pedigreed Poland-China and Duroc-Jerseys. Also M. B. Turkeys, Light Brahmas, Plymouth Rock, S. Wyandotte chickens and E. Pekin ducks. Eggs. Of the best. Cheap.

BERKSHIRES.—Wm. B. Sutton & Sons, Rutger farm, Russell, Kansas. Choice February and March pigs. Young boars ready for service. Young sows bred. Good individuals and choicest breeding.

A. W. THEMANSON, Wathena, Doniphan Co., Kansas.—Large Poland-China pigs sired by Early Sison 11935 S. and other good boars. Write to-day. Mention KANSAS FARMER.

DETTRICH & GENTRY, OTTAWA, KAS.—Our Poland-China spring pigs are sired by W. Z. Swallow's Ideal Black U.S. 2865 O, Guy Wilkes 3d 12131 C, Pat's Osgood and the great Loyal Duke 2823 O. For choicest pigs write us.

KAW VALLEY HERD FANCY POLAND-CHINA.—Of the most noted families, bred for feeding qualities as well as fancy points. About's Tecumseh at head of herd. M. F. Tatman, Proprietor, Rossville, Kansas.

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CHOICE Poland-Chinas **J. H. TAYLOR,** Pearl, Short-horns. Kas.

M. H. ALBERTY, Cherokee, Kas., Registered Holstein-Friesian cattle, Poland-China and Duroc-Jersey swine, Rose-comb Brown Leghorns. Stock of all ages and both sexes for sale. Orders booked now for pigs and eggs.

ASHLAND STOCK FARM HERD OF THOR-oughbred Poland-China hogs, Short-horn cattle and Plymouth Rock chickens. Boars in service, Admiral Chip No. 7919 and Abbottford No. 28351, full brother to second-prize yearling at Worlds Fair. Individual merit and gilt-edged pedigree my motto. Inspection of herd and correspondence solicited. M. C. Vansell, Muscotah, Atchison Co., Kas.

POULTRY.

BRONZE TURKEYS, TOULOUSE GEESE, PEKIN ducks, P. Rock and Brown Leghorn chickens. Also two Duroc-Jersey boars old enough for service. J. M. Young, Liberty, Kas.

A. B. DILLE & SONS, EDGERTON, KAS., breeders of choice B. P. Rocks, S. L. Wyandottes, Light Brahmas and M. B. turkeys. Chicken eggs \$1 to \$2 per 15; turkey eggs \$3 per 11. Satisfaction guaranteed.

EUREKA POULTRY YARDS.—L. E. Pixley, Emporia, Kas., breeder of Plymouth Rocks, S. Wyandottes, Buff Cochins, B. and White Leghorns, B. Langshans, M. B. Turkeys and Pekin ducks. Chicks at all times. Eggs in season.

SWINE.

SELECT HERD OF BERKSHIRES

Have for sale pigs from State fair winners. Can fill classes for show. Boars for fall service. A few choice sows bred. Address
G. W. BERRY, Berryton, Shawnee Co., Kas.

S. McCULLOUGH, Ottawa, Kansas. Breeder of Pure-bred **BERKSHIRE SWINE.** Stock for sale at all times. Satisfaction guaranteed. Write for what you want.

T. A. HUBBARD, Rome, Kansas, Breeder of **POLAND-CHINAS** and **LARGE ENGLISH BERKSHIRES.** Two hundred head. All ages. Fifty boars and forty-five sows ready for buyers.

JAMES QUOROLLO, KEARNEY, MO. Breeder and shipper of prize-winning **Large Berkshire Swine.** S. C. Brown Leghorns and Bronze Turkeys. Headed by King Lee II. 28601, Mephistopheles 32412.

THE WOOD DALE BERKSHIRES

Champions of Two World's Fairs. New Orleans, 1885, best herd, largest hog any breed. At Columbian, Chicago, won ten out of eighteen first prizes, the other eight being bred at or by descendants of Wood Dale. New blood by an 1894 importation of 31 head from England. For catalogue Address **N. H. GENTRY, SEDALIA, MO.**

R. S. COOK, Wichita, Kas., Breeder of **Poland-Chinas.** Won seven prizes at World's Fair—more than any single breeder west of Ohio.

SWINE.

Thoroughbred Duroc-Jersey Hogs

Registered stock. Send for 44-page catalogue, prices and history, containing much other useful information to young breeders. Will be sent on receipt of stamp and address. **J. M. STONERAKER,** Panola, Ill.

A. E. STALEY, Ottawa, Kansas. **CHESTER WHITES AND POLAND-CHINAS.** Light Brahma cockerels, \$1.50.

W. S. ATTEBURY, Rossville, Kansas, BREEDER OF **Chester Whites** Exclusively. Satisfaction guaranteed. Young stock at all times.

CLOVER LAWN HERD POLAND-CHINAS. Young sows and boars and spring pigs for sale. Prices reasonable. Stock first-class. **W. N. D. BIRD,** Emporia, Kas.

J. R. KILLOUGH & SONS, Richmond, Kansas, Breeders of **POLAND-CHINA SWINE.** The very best strains. Nothing but first-class stock will be shipped to any. Come and see us or write.

P. A. PEARSON, Kinsley, Kansas, Breeder of **Poland-China Swine.** All ages for sale. Herd headed by Dandy Jim Jr. and Royalty Medium, a son of Free Trade.

W. E. GRESHAM, Burrton, Kansas, Breeder of **POLAND-CHINAS.** Won six prizes, including first blue ribbon west of Mississippi at World's Fair. Stock all ages for sale.

E. E. AXLINE, OAK GROVE, MO., (Jackson Co.) **Poland-Chinas.** Breeder and shipper pure-bred registered stock. Dugan 10213 S. and Western Wilkes (Vol. 9) head the herd. Write or come.

HILLSDALE HERD Short-horn cattle and Poland-China hogs, bred by **C. C. KEYT, VERDON, NEB.** Aberdeen King 101466, a pure Cruickshank, heads the herd. Stock for sale at all times. Visitors welcome. A fine lot of young male pigs for sale. Farm two miles north of Verdon, Nebraska.

RIVERSIDE HERD Poland-China Swine. For sale sows bred to farrow in September and October. Also young stock at reasonable figures at all times. Satisfaction guaranteed. Correspondence as well as inspection invited. **J. V. RANDOLPH,** Emporia, Kas. Established 1868.

SUNNY SLOPE FARM, EMPORIA, KANSAS.

200 POLAND-CHINAS, headed by LONGFELLOW 29785 O., that has best World's Fair record of any boar west of the Mississippi. Also in service, sons of Hadley, Latest Fashion and Short Stop. Blood lines, One Price, Tecumseh, Black U. S., Wilkes, Corwin, U. S., and others.

100 BERKSHIRES, headed by the well-known show boar, MAJOR LEE 31139, assisted by Gentry-bred boars. Female lines, Lady Lee, Duchess, Charmer and Black Girl families. Young hogs, both sexes, ready for inspection. **H. L. LEIBFRIED,** Manager.

MAINS' HERD OF POLAND-CHINAS.

JAMES MAINS, Oskaloosa, Kansas. Jefferson Co.

A grand lot of early pigs for sale, sired by Monroe's Model U. S. 2933 O., Tornado 30505 O., I. X. L. King and Royal Chief 30348 O., from highly-bred sows, many of them and the two first named boars purchased direct from Ohio's best breeders. I pay express on pigs to August 7. Sows bred to farrow in the fall for sale. Write me for No. 1 stock. Safe arrival of all guaranteed.

SHEEP AND POULTRY FOR SALE.—Some choice Cotswold and Merino bucks, any age. Will sell to suit the times. The leading varieties of first-class poultry for sale at all times. Address **H. H. Hague & Son,** Walton, Kas.

CATTLE.

SUNNY SLOPE FARM,

C. S. CROSS, Proprietor, Emporia, Kas. Breeder of **PURE-BRED HEREFORD CATTLE.** Herd headed by Wild Tom 51592, a son of Beau Real 11055 and assisted by sons of Cherry Boy 26476, Archibald 1st 39258 and Washington 22615. 200 head, all ages, in herd. Strong in the blood of Lord Wilton, Anxiety and Horace. A choice lot of young bulls and heifers, fit for any company. Correspondence solicited, or, better still, a personal inspection invited.

SHANNON HILL STOCK FARM.

G. W. GLICK, ATCHISON, KAS. Breeds and has for sale Bates and Bates-topped **SHORT-HORNS.** Waterloo, Kirklevington, Filbert, Cragg, Princess, Gwynne, Lady Jane and other fashionable families. The grand Bates bulls Waterloo Duke of Shannon Hill No. 89879 and Winsome Duke 115h 115, 137 at head of herd. Choice young bulls for sale now. Visitors welcome. Address **W. L. CHAFFEE, Manager.**

SHEEP.

DELAINÉ SHEEP

We keep strictly to the Delainé Sheep Wool on a mutton carcass, and we guarantee satisfaction in size and in quality of wool. 80 Rams and 100 Ewes for sale at a low price considering quality. Write at once to **ALEX. TURNBULL & SON** CEDARVILLE, OHIO.

5—Choice Cruickshank Bulls—5

We have for sale five choice Cruickshank bulls, 10 to 18 months old, suitable to use in any Short-horn herd. Prices low, quality good. Inquire of **W. A. HARRIS & SON,** Linwood, Kas.

MISCELLANEOUS.

J. M. HOSMER, Live Stock Auctioneer, Maryville, J. Mo. Fine stock a specialty. I respectfully solicit your business and guarantee satisfaction. Terms reasonable. Secure dates early.

F. M. WOODS, Live Stock Auctioneer, Lincoln, Neb. Refer to the best breeders in the West, for whom I do business. Prices reasonable and correspondence solicited.

ELI ZIMMERMAN, Hiawatha, Kansas, Live Stock and General Auctioneer. Pedigreed and registered live stock a specialty. Write for dates. Sales conducted anywhere in the country. Best of references and satisfaction guaranteed.

JAS. W. SPARKS, Live Stock Auctioneer, Marshall, Mo. Sales made in all States and Territories. Refer to the best breeders in the West, for whom I have made sales. Write or telegraph for dates before advertising. Terms reasonable.

S. A. SAWYER, FINE STOCK AUCTIONEER—Manhattan, Riley Co., Kas. Have thirteen different sets of stud books and herd books of cattle and hogs. Complete catalogues. Retained by the City Stock Yards, Denver, Colo., to make all their large combination sales of horses and cattle. Have sold for nearly every importer and noted breeder of cattle in America. Auction sales of fine horses a specialty. Large acquaintance in California, New Mexico, Texas and Wyoming Territory, where I have made numerous public sales.

CHAMPION INCUBATORS AND BROODERS
SEND STAMP FOR CATALOGUE
FAMOUS MFG. CO.
RANDOLPH ST. CHICAGO, U.S.A.

THE OLD RELIABLE PEERLESS FEED GRINDERS

Grinds more grain to any degree of fineness than any other mill. Grinds ear-corn, oats, etc., fine enough for any purpose. Warranted not to choke. We warrant the Peerless to be **THE BEST AND CHEAPEST MILL ON EARTH.** Write us at once for prices and agency. There is money in this mill. Made only by the **JOLIET STROWBRIDGE CO., JOLIET, ILL.** Jobbers and Manufacturers of Farm Machinery, Carriages, Wagons, Windmills, Bicycles, Harness, etc. Prices lowest. Quality best.

The Stock Interest.

THE J. F. WATERS HEREFORD SALE.

The dispersion sale of pure-bred registered Hereford cattle, as was previously announced, came off last week (Wednesday) on the farm, near Savannah, Mo. About 200 buyers and on-lookers from Kansas, Iowa and Missouri were on hand, and promptly at 10 o'clock a. m., Col. J. M. Hosmer, of Maryville, Mo., ascended the block, that stood at the entrance of a comfortably seated pavilion underneath a large and commodious sales tent, and after the usual preliminaries began the sale. The herd had not been fitted up nor were the individuals in more than fairly good breeding condition, the result of the long dry season and consequent shortage of grass and grain ration. They brought fairly good prices, considering their condition. It was generally remarked by the old-time auction sales ring attendants that it was one of the sprightliest sales, as to promptness of bids and the general prevailing good nature throughout, that they had ever attended. All complimented and commended the auctioneer, Col. Hosmer, on the genteel ability displayed and his method of conducting the sale. While the prices realized were not those of "the good old cattle boom days," yet when one takes into consideration the condition of the offerings, some of which were sucklings that sold separately and the aged cows that had just about reached the end of their period of usefulness, as well as the scarcity of feed, and hard times, it was a successful sale and Mr. Waters ought to be content, and we hope he is, with the \$5,150 that the ninety-three head that were sold singly realized him.

The following gives the catalogued number, name of buyer and prices:

COWS AND HEIFERS.

- 1. Modesty, 10 yrs, and c c 2 mos, to W P Hayzlett, Graham, Mo. \$70 00
2. Lula 2d 15361, 10 yrs, N Kirtley, Savannah, Mo. 40 00
3. Lily 7150, 11 yrs, R A Steele, Bellaire, Kas. 50 00
4. Fanny 2d 16909, 9 yrs, J M Funkhouser, Plattsburg, Mo. 30 00
(N. N.) Her b c Archibald 8th, 4 mos, J M Funkhouser. 35 00
5. Nutbrown 4th 11061, 11 yrs, C G Comstock, Albany, Mo. 65 00
(N. N.) Her c c Nutbrown C, 4 mos, C G Comstock. 45 00
6. Blowdy 5th 22996, 9 yrs, J Q Adams, Savannah, Mo. 50 00
7. Mayflower 2d 19166, 3 yrs, W P Hayzlett. 50 00
8. Diana 22748, 9 yrs, N Kirtley. 50 00
9. May Belle 37502, 7 yrs, J Q Adams. 95 00
10. Gem 4th 39128, 6 yrs, N Kirtley 40 00
(N. N.) Her c c Gem 5th, 4 mos, W P Hayzlett. 25 00
11. Florena 3d 39545, 6 yrs, Samuel Combest, Hartsville, Mo. 70 00
(N. N.) Her b c Archibald 9th, 4 mos, Samuel Combest. 60 00
12. Lula 4th 39137, 6 yrs, and her b c Archibald 11th, 2 mos, C G Comstock. 85 00
13. Countess 4th 39541, 6 yrs, and her b c Count Archibald 2d, 2 mos, W I Richards, Manhattan, Kas. 90 00
14. Stella 7th, 39556, 6 yrs, W P Hayzlett. 50 00
(N. N.) Her c c Stella 8th, 4 mos, W P Hayzlett. 35 00
15. Lily 4th 39552, 6 yrs, and b c n n 1 mo, C G Comstock. 80 00
16. Beauty 10th 39124, 6 yrs, and her b c Archibald 12th, 1 mo, D H Pugh, Maple Grove, Mo. 95 00
17. Eva G 44760, 5 yrs, D H Pugh. 65 00
(N. N.) Her c c Eva G 2d, 4 mos, D H Pugh. 25 00
18. Stella Lass B 39145, 5 yrs, W P Hayzlett. 40 00
(N. N.) Her c c Stella Lass D, 5 mos, W P Hayzlett. 25 00
19. Countess 5th 39432, 5 yrs, Frank Brown, New Market, Mo. 60 00
20. Lily Whitehall 39553, 5 yrs, N Kirtley. 50 00
(N. N.) Her c c (free-martin), 6 mos, W T Miller, Savannah, Mo. 15 00
21. Janette 3d 39548, 5 yrs, N Kirtley. 45 00
(N. N.) Her c c Jane 3d, 4 mos, N Kirtley. 25 00
22. Florabeck 44763, 5 yrs, J F Brown, New Market, Mo. 55 00
(N. N.) Her b c Archibald 7th, 5 mos, W E Bostwick, Savannah, Mo. 40 00
23. Modesty B, 44769, 5 yrs, and b c Archibald 13th, 1 mo, C G Comstock. 95 00
24. Lily B 44766, 5 yrs, and her twin ccs, Lily I and Lily J, 1 mo, J Q Adams. 70 00
25. Beauty C 44753, 5 yrs, Wood Roberts, New Market, Mo. 55 00
(N. N.) Her b c Conqueror, 4 mos, John Burns, Rankin, Mo. 50 00
26. Lady Whitehall 44765, 5 yrs, and c c Lady Whitehall 3d, 3 mos, C G Comstock. 65 00
27. Stella Lass C 44773, 4 yrs, J M Funkhouser. 45 00

- (N. N.) Her c c Stella Lass E, 5 mos, J M Funkhouser. 20 00
28. Lady Bay C 44764, 4 yrs, N Kirtley. 35 00
29. Gem Anxiety 49800, 4 yrs, W R McElwain, Savannah, Mo. 40 00
30. Modesty C 44770, 4 yrs, N Kirtley. 45 00
31. Nora D 49808, 4 yrs, N Kirtley. 55 00
(N. N.) Her c c Nora, 4 mos, W I Richards. 25 00
32. Stella Whitehall 49812, 4 yrs, R A Steele. 60 00
33. Lizzie M 49806, 3 yrs, and her b c Archibald 10th, W I Richards. 75 00
34. Beauty A 49289, 3 yrs, N Kirtley. 55 00
35. Fanny Archibald 49297, 3 yrs, N Kirtley. 45 00
36. Jane 54439, 2 yrs, R A Steele. 40 00
37. Countess 6th 54435, 2 yrs, J Q Adams. 95 00
38. Stella Archibald 54447, 2 yrs, D H Pugh. 55 00
39. Fanny C 54437, 2 yrs, N Kirtley. 40 00
40. Beauty D 54434, 2 yrs, R A Steele. 55 00
41. May Belle 2d 54443, 2 yrs, R A Steele. 55 00
42. Flo 54438, 2 yrs, Frank Brown. 50 00
43. Modesty F 54446, 2 yrs, J F Brown. 55 00
44. Nutbrown A, Vol XIV, 2 yrs, Samuel Wyeth, Savannah, Mo. 65 00
45. Lula 7th, 1 yr, D H Pugh. 70 00
46. Countess 7th, 1 yr, J Q Adams. 100 00
47. Fanny 7th, 1 yr, J F Brown. 55 00
48. Jane 2d, 1 yr, Wood Roberts. 50 00
49. Lily E, Vol XIV, 1 yr, Samuel Wyeth. 65 00

- 71. Diana's Archibald, Vol XIV, 15 mos, A M Bedford, Savannah, Mo. 60 00
72. Archibald Y Y, Vol XIV, 15 mos, J T Gelvin, Oregon, Mo. 45 00
73. Archibald Z, Vol XIV, 14 mos, R A Steele. 40 00
74. Col Burns, Vol XIV, 13 mos, J F Brown. 70 00
75. Archibald 3d, Vol XIV, 12 mos, R A Steele. 50 00
76. Archibald 4th, Vol XIV, 12 mos, R A Steele. 50 00
77. Col. Stuart, Vol XIV, 10 mos, James Gibson, Empire, Mo. 55 00
78. Archibald 5th, Vol XIV, 9 mos, J O Gross, Union Star, Mo. 50 00
79. Archibald 6th, Vol XIV, 5 mos, Reason Elsenger, Fillmore, Mo. 35 00
80. Lon F, Vol XIV, 5 mos, R A Steele. 70 00

SUMMARY OF THE SALE. Fifty-seven cows over 1 year brought \$3,310 00. Average of each 58 07. Thirteen heifer calves under 1 year brought 415 00. Average of each 31 92. Fourteen bulls over 1 year brought 865 00. Average of each 61 78. Nine bulls under 1 year brought 560 00. Average of each 62 22. Seventy females averaged 53 21. Twenty-three males averaged 61 52. Total amount sale realized 5,150 00. General average for ninety-three head 55 37. W. P. BRUSH.

Standard Poland-China Record.

EDITOR KANSAS FARMER:—At a regular meeting of the Board of Directors of the Standard Poland-China Record Association, held at the office of the Secretary, at Maryville, Mo., October 19, 1894, the board declared a dividend of 25 per cent. on the par value of stock, same to be paid in Vol. VIII. of the Records at \$2.50 each, delivered to express office in Maryville, express to be paid by stockholders or purchasers. The express will be 30 cents if prepaid; and from 40 to 60 cents if paid at destination. If you wish express prepaid, please remit for same and give your nearest express office.

Ordered that the rule charging for transfers on unrecorded stock be suspended.

The board ordered the following amendment to by-laws, section 9, by adding to same, "no pedigrees to be recorded until fee for same is paid." We have been running too many open accounts on books, hence the order of the board to pay in advance.

The Standard still has a few shares of stock for sale at \$20 per share, including Vol. I. of the Records. Stock is going very rapidly, and it will not be long until same is all disposed of, when there will be no more issued. If you are contemplating buying a share now is the time.

All stock bought prior to January 6, 1895, will be entitled to the 1894 dividend.

It will facilitate the work of the office if patrons will always be careful to insert dates of sale, and when you breed to an animal owned by another party always secure and send in a certificate of breeding; also where dam is bought or sold after being bred.

Volume IX will close January 1, 1895. GEO. F. WOODWORTH, Secretary.

Effects of Cotton Seed Meal.

The use of cotton seed meal for fattening stock, either cattle or swine, has not as yet made a satisfactory record. It is quite evident that the proper balanced ration has not been ascertained, and as a consequence thereof many ill effects have resulted from its use.

Recently a representative of the FARMER, in conversation with a number of Texas swine breeders, asked them their opinion of its use for swine, and they were decidedly a unit in their opposition to its use because of the manifest ill effects.

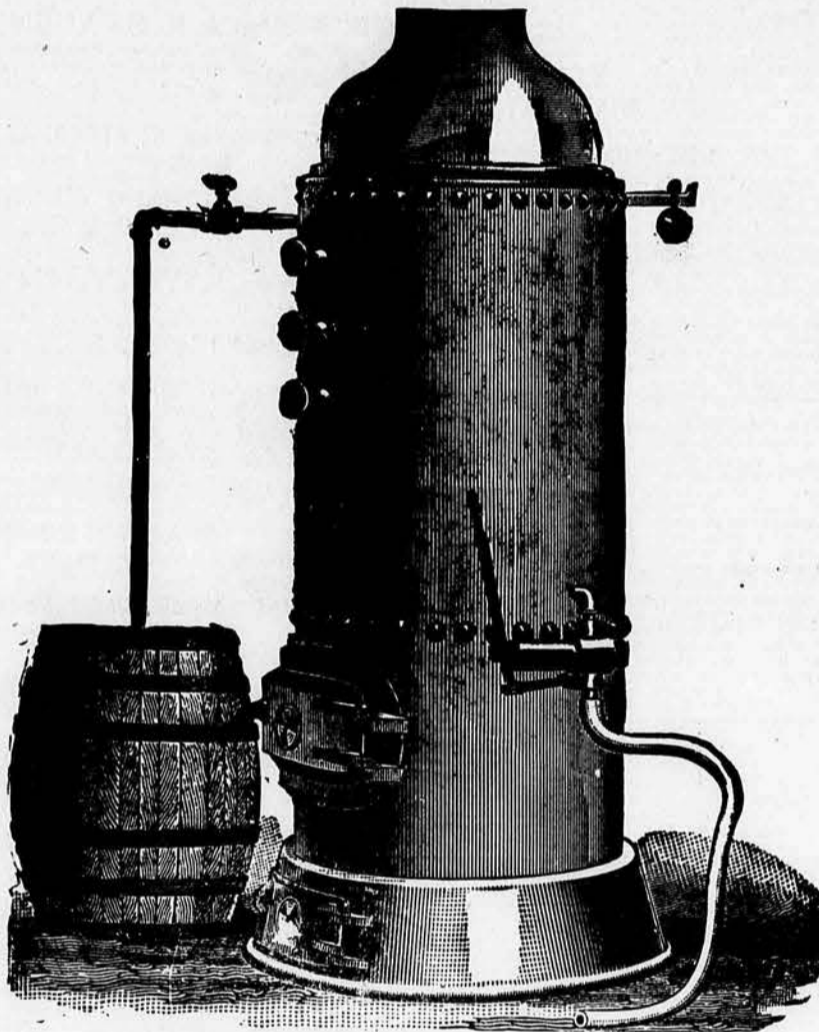
In Kansas, some of our large cattle feeders changed from the use of linseed meal to that of the cheaper cotton seed meal, but one trial seemed to suffice, and to-day they are using the linseed oil meal.

For dairy stock, the National Dairyman, a Western authority, says:

"Cotton seed oil and cotton seed meal, as food for cows, calves and human beings, is very good in small quantities, just as alcohol is one of the best preservatives of the power of drugs. But cow-keepers should bear in mind that it should be used only in small quantities. It produces wonderful results in a very short time. It causes a large flow of milk and makes a cow fat quickly, but the excessive use of it destroys the constitution. A representative of the Missouri, Kansas & Texas railway stock yards department, who sees thousands of Texas cattle every month, told a representative of the National Dairyman that steers fed on cotton seed, in the rough state, became very fat and presented a fine appearance. But while they were standing in the stock pens, awaiting shipment, they would suddenly be stricken with blindness, blind staggers and paralysis, lie down and seem to be dead. Then after an hour they would recover and stand a trip of seventy hours, but they were diseased when they reached the market. The Milk Zeitung, the scientific authority of Europe on dairy matters, says that calves from 9 to 12 months old, which had been given three quarts of cotton seed meal per day, in addition to other food, died in a diseased condition."

Five World Beaters.

"SICKLES" BRAND HARNESS. All genuine stamped with this "Trade Mark." Made in five styles at \$8.50, \$10.00, \$10.00 and \$25.00 per set complete. The best harness for the money on the market. Ask your harness dealer for them. Manufactured only by J. B. Sickles Saddlery Co., St. Louis, Mo.



EUREKA BOILER AND STEAM FEED COOKER.

Manufactured by the CREAMERY PACKAGE MANUFACTURING Co., Kansas City, Mo.

- 50. Modesty Anxiety, 1 yr, C G Comstock. 50 00
51. Cheerful Maid, Vol XIV, 1 yr, J M Funkhouser. 65 00
52. Flo 2d, 1 yr, D H Pugh. 50 00
53. Lizzie N, Vol XIV, 1 yr, N Kirtley. 55 00
54. Nutbrown B, Vol XIV, 1 yr, R A Steele. 65 00
55. Beauty E, Vol XIV, 1 yr, Frank Brown. 35 00
56. Lily F, Vol XIV, 1 yr, R A Steele. 40 00
57. Fanny Archibald 2d, Vol XIV, 1 yr, N Kirtley. 35 00
58. Lula 8th, Vol XIV, 9 mos, J M Funkhouser. 40 00
59. Lily G, Vol XIV, 9 mos, R A Steele. 65 00
60. Gem Anxiety 2d, Vol XIV, 7 mos, W R McElwain. 30 00
61. Modesty H, Vol XIV, 6 mos, C G Comstock. 40 00

BULLS.

- 62. Archibald 1st 39258, 6 yrs, N Kirtley. 100 00
63. Henry, Vol XIV, 6 mos, R A Steele. 165 00
64. Archibald X, Vol XIV, 18 mos, R H Black, Savannah, Mo. 55 00
65. George, Vol XIV, 18 mos, Wood Roberts. 65 00
66. Archibald Y, Vol XIV, 16 mos, D H Pugh. 65 00
67. Otho H, Vol XIV, 16 mos, R A Steele. 55 00
68. Hurley, Vol XIV, 16 mos, A O Ingram, Mt. Ayre, Iowa. 50 00
69. Briggs, Vol XIV, 15 mos, W I Richards. 70 00
70. Clark, Vol XIV, 15 mos, G E Bedford, Cawood, Mo. 90 00

National Breeders' Meetings.

During the American fat stock and horse shows at Chicago, this month, meetings of the following national breeders' associations will be held as per dates announced:

- Thursday, November 22, 8 p. m.—American Clydesdale Association, Grand Pacific hotel.
Friday, November 23, 10 a. m.—National Morgan Horse Breeders' Association, Grand Pacific hotel.
Monday, November 26, 8 p. m.—General meeting of exhibitors, Grand Pacific hotel.
Tuesday, November 27, 7 p. m.—American Polled Durham Breeders' Association, Grand Pacific hotel.
Tuesday, November 27, 7:30 p. m.—American Aberdeen-Angus Breeders' Association, Leland hotel.
Tuesday, November 27, 7:30 p. m.—American Essex Association, Sherman House.
Wednesday, November 28—National Poland-China Swine Breeders' Association, Sherman House.
Wednesday, November 28, 3 p. m.—American Short-horn Breeders' Association, Grand Pacific hotel.
Wednesday, November 28, 10 a. m.—Red Polled Cattle Club of America (Incorporated), Grand Pacific hotel.
Thursday, November 29—National Swine Breeders' Association, Sherman House.
Thursday, November 29, 7:30 p. m.—American Hereford Breeders' Association, Grand Pacific hotel.

Agricultural Matters.

MILLING WHEAT—ITS CHEMICAL COMPOSITION.

Prof. Charles D. Woods, Vice Director and Chemist, Wesleyan University, Middletown, Conn.

The miller aims to crush the wheat berry to the finest flour without impairing its elasticity, and to remove the bran, germ and impurities which cause the bread made from the flour to bake dark. In properly mixing the different varieties of grain, so as to produce the best flour, and in the grinding and subsequent preparation for food there is ample scope for the application of the highest skill and knowledge.

The "old" process of milling was a comparatively simple one and consisted essentially of two steps—the reduction of the wheat to flour by passing it through a run of stones, and the subsequent bolting of the resultant material by which the flour, bran, etc., were separated from each other. The chief object aimed at in this process is the production of the largest possible amount of fine flour by passing the grain between the millstones but once.

About twenty-five years ago a great change was introduced into the manufacture of flour from wheat. The roller or "new" process by which "patent" flour is manufactured differs materially from the "old" process. It may be briefly outlined as follows: The perfectly cleaned grain is conducted to the burrs and "granulated"—not ground as in the old process—and the resultant "chop" is separated into its component parts of flour, middlings and bran. The flour thus produced from the first chop is of an inferior grade. The middlings are the coarse particles of the endosperm of the berry, which give the strongest and best flour, and from these, by several grindings and separations, the patent or high-grade flour is made. The first roller mills were quite simple in comparison to the Hungarian or gradual reduction process mills which have for the most part replaced them. This method is an extension of the principles of the "new" process, from which it differs chiefly in multiplicity of detail. From the nature of the gradual reduction process, the larger the mill the greater the economy in the manufacture, and for small mills the "new" process is probably equally efficient. The complexity of the gradual reduction process is illustrated by the fact that about seventy different finished or intermediate products are obtained.

The chief chemical constituents of wheat may be classified as follows:

Water.		
Proteids or Albuminoids.	Soluble,	Albumen.
	Insoluble (Gluten),	Legumen.
Fat.		Cerealin.
		Myosin.
Nitrogen-free extract or Soluble carbohydrates, Fiber, Cellulose or woody fiber. Mineral matters or ash.		Gluten.
		Mucedin.
		Fibrin.
		Starch.
		Dextrin.
		Sugars.

The quantity of water in wheat and flour varies within narrow limits. It seldom rises above thirteen, and rarely falls below nine parts in one hundred. The extreme variation found in the analysis of 310 specimens of American wheat is from 7 to 14 per cent. of water. Wheat grown in a damp climate or a wet season will contain more water than when grown under opposite conditions. A large proportion of water is objectionable in wheat for two reasons: It is not worth purchasing at the price given for wheat or flour, as it is of no more nutritive value than water from other sources. A much more serious objection to high percentages of water in wheat and flour is that it indicates unsound wheat and that the other constituents will not be of the best. Damp wheats and flour favor the development of the organisms which produce mustiness, and an excess of moisture renders part of the gluten soluble, so that it loses its elasticity and favors the changing of starch into dextrin and maltose to the marked detriment of the flour.

The protein compounds are the most valuable from the nutritive standpoint, as they are the flesh-forming constituents of the food. Some of the proteids

serve a very important purpose in bread-making. They may be roughly grouped into the soluble and insoluble proteids. The soluble have a serious action upon starch and also on gluten, the insoluble protein compounds of wheat. Under the influence of yeast they change starch into dextrin and maltose. On this account it is desirable that the soluble proteids should be relatively low in amount. These bodies occur largely in the bran and germ and embryonic membrane, and are removed from the flour during milling. This is especially true of the roller process by which nearly all bread flour is now manufactured. The inferior wheat grown in damp years and wet climates is due to the proteids being left in the soluble condition. Hot, dry sunshine is necessary to the proper ripening of the grain so as to cause the proteids to assume the insoluble form.

The insoluble proteids constitute the tough, elastic gluten which may be obtained by doughing the flour and washing away the starch. The gluten of wheat imparts to flour its remarkable and valuable property of rising into a light, spongy loaf. Hence, wheat, to be of high quality, must contain a high percentage of gluten. This in itself, however, is not enough, since gluten differs in quality, some being tough and elastic, while others are soft and flabby. These latter yield weak flour and poorly risen bread. Gluten should be present in considerable quantity, and should be highly elastic in order that a wheat or flour should be of the first class. A close relation exists between the amount of soluble proteids and the gluten. High percentages of soluble protein will always accompany high percentages of gluten. But high soluble protein compounds and low gluten are distinct evidence of low-grade or unsound wheat.

The fat of wheat is valuable from the nutritive standpoint rather than from that of the miller. Wheat contains much less fat than does Indian corn or oats, and wheat flour much less than whole wheat. The germ and embryonic membrane contain high percentages of oil, and as these are usually removed in milling, the resulting flour has in consequence less of fat.

The soluble carbohydrates or nitrogen-free extract consists of starch, sugar and gums. Dextrin and sugar exist in sound wheat and flour in only small amounts. The presence of much dextrin in wheat or flour is objectionable. The sugar of flour is necessary for fermentation, and is therefore allowable in small amount. It should be almost entirely in the form of cane sugar, the presence of maltose being evidence of unsoundness. Starch is of great importance, being the chief fuel constituent of wheat. In sound wheat the starch granules are whole, while in wheat that has sprouted or heated the granules are often broken and the starch is more or less changed into dextrin and sugar (maltose).

The fiber occurs principally in the outer layers or coatings of the wheat which go to make up the bran. It is nearly valueless for food, and as it imparts a dark color to both flour and bread, the miller endeavors to keep it out of the flour as far as possible.

The ash or mineral matters of wheat consist largely of potassium phosphate which has considerable nutritive value. The far larger portion of the ash is left in the bran.

The strength of a flour depends upon its water-holding capacity and its ability to make good, light, spongy bread is quite accurately indicated by the percentage of gluten and especially of moist gluten. The percentage of dry gluten in spring wheat is only 0.9 per cent. greater than that of winter wheat, but the percentage of moist gluten exceeds that of winter wheat by 2.3 per cent. The marked improvement in the quality of flour rendered possible by the introduction of the roller process is evidenced by the difference of 6.5 per cent. in the percentages of moist gluten in spring and winter wheat flours.

The average composition of American-grown wheat and flour, as found from the results of American analyses, are given in the table which follows:

AVERAGE COMPOSITION OF WHEAT AND WHEAT FLOUR.

Kind of flour.	Entire wheat	12.0	12.0	11.1	72.0	1.8	1.1	1.1	1.1	1.1
	Graham.....	13.1	14.0	11.7	72.0	1.8	1.1	1.1	1.1	1.1
	Winter wheat	10.7	10.3	7.5	71.5	0.9	0.6	0.6	0.6	0.6
	Spring wheat	12.1	12.0	7.4	74.5	0.9	0.6	0.6	0.6	0.6
Kind of wheat.	Winter.....	10.5	11.6	12.1	72.0	1.8	1.1	1.1	1.1	1.1
	Spring.....	10.4	12.5	12.5	71.3	1.0	0.9	0.9	0.9	0.9
	Water.....	12.5	12.5	12.5	71.3	1.0	0.9	0.9	0.9	0.9
	Fat.....	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	Nitrogen-free extract.....	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
	Ash.....	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Gluten.....	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0

From the table it will be seen that the percentages of water, fat, fiber and ash are practically the same in the two kinds of wheat, and that the principal differences between them is in their content of protein and nitrogen-free extract. The protein is higher in spring wheat, and the nitrogen-free extract (starch, etc.) correspondingly lower.

That flour from spring wheat contains more water than that from winter wheat is due in part at least to differences in milling, as most of the winter wheat flours which have been analyzed were manufactured by the "old" process which heats and tends to dry the flour. The percentages of water are higher in the endosperm than in the envelopes of the wheat berry, and hence flours not dried in manufacture always contain a higher percentage of water than the wheat from which it was made. The difference between spring and winter wheat flours is chiefly due to the proteid compounds.

Graham flour is usually made from winter wheat flour, and is simply the ground unbolted wheat meal. It is frequently made from low-grade or unsound wheat, as is somewhat indicated by the high percentage of water found in the specimens analyzed. Other than the high water content and consequent lower percentage of nitrogen-free extract, it differs but little in composition from winter wheat.

Entire wheat flour is made by grinding the decorticated (usually spring) wheat berry. The hulls which are removed somewhat resemble straw in composition, and in consequence the meal of decorticated wheat (entire wheat flour) contains more water, protein and fat and less nitrogen-free extract, fiber and ash than the whole wheat.

About Kaffir Corn.

EDITOR KANSAS FARMER:—The past has been an excellent season to test the drought-proof qualities of this and other sorghums. Between the Missouri river and the mountains they have been grown this year for fodder and for the seed, both the saccharine and non-saccharine varieties, under every condition of atmospheric humidity, and if the readers of the KANSAS FARMER will report their experience and the amount of rainfall for the season, with each experiment, we may reach a definite conclusion as to the merits of the several varieties as so-called drought-proof plants when grown without irrigation. Here in Decatur county we had an extraordinary drought, having had but eleven and a half inches of rain for the year, being half of our normal rainfall.

I planted fifteen acres of red Kaffir corn in four fields, on first and second bottoms, all put in with a lister except one field of first bottom newly broken sod and hand-planted. In two of the listed fields the seed dried out after germinating and with rare exceptions never appeared above the ground. Another listed field came up a month after planting, made a feeble growth, about equal to the corn in an adjoining field, and then dried up. On the sod it came up at once, but a little yellow corn planted beside it grew much faster and matured grain, while the Kaffir corn mostly dried up and withered after growing a couple of feet high, some, only in a low place, producing a

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little seed. This last field (sod) is about eight feet above water and near stream and timber. The other fields are about twenty feet above water. The seed was good, procured from Morris county. This experiment does not show this sorghum, as a dry weather plant, to be much better than maize.
JNO. J. CASS.
Allison, Decatur Co., Kas.

Second-Growth Sorghum.

EDITOR KANSAS FARMER:—From the numerous letters received I notice that there is great interest manifested in the question as to the danger of feeding or pasturing second-growth sorghum.

I think the warning by Secretary Coburn was well meant and was necessary, but not being coupled with any suggestions it has created needless alarm.

In issue of October 17, I wrote of pasturing my calves on it and since then I have all my cattle on it, but I have used the same common sense that any farmer ought to use in changing to a very succulent green feed—turning them upon it when they were fairly well filled with other feed and had had plenty of water and letting them have but little first day. After three days I allowed them full liberty. The second growth was from one to three feet high and had been slightly frosted.

In driving about the country the past week, I saw cattle pasturing on it on many farms and have heard of no trouble.

I think your readers would like to hear from Mr. Diefenbach as to the particulars in regard to the feed of his cattle prior to the turning into the sorghum.

With the same precaution that any careful farmer would take as to change of feed, I believe that there would be no more danger than in changing to rich clover pasture.
J. M. RICE.
Winview, Okla.

Treatment for Potato Scab.

EDITOR KANSAS FARMER:—In last week's issue of the FARMER, Mr. C. J. Norton had an extensive article on potatoes and their culture, which to me was very interesting.

He asks the cause of scab on potatoes, also if there is any known cure. Question No. 1, I will not attempt to answer, leaving that to the scientific men, but the second question I will consider. I have been troubled with the scab and sought for a preventive. This year I tried corrosive sublimate, with complete success. Take of the chemical two and one-fourth ounces and dissolve in fifteen gallons of water, using a barrel instead of any metal dish. Take your potatoes (using no scabby ones) and immerse for one and one-half hours; take out, dry, cut and plant.

Potatoes treated thus should all be planted, as they would be unfit for eating purposes, on account of the poisonous character of the drug.

I planted one and one-half acres this year, one-half acre of which I treated as above stated. The acre untreated was more or less affected, while the others were as smooth and free of scab as a glass ball. The yield of the latter was also considerably larger. Hereafter I shall treat all seed before planting.
CHAS. W. GAILE.
Burlingame, Kas.

Irrigation.

Dates of Irrigation Conventions. NOVEMBER 23-24.—Kansas State Irrigation Association, at Hutchinson.

Kansas Irrigation Illustrated.

We this week present a full-page illustration of Irrigation in Kansas as it appeared in a recent number of Harper's Weekly. That enterprising journal procured the sketches and photographs from Prof. Worrall, of Topeka, who made a tour of the irrigated portions of the State to obtain accurate representations of the scenes. This illustration shows but the stages of infancy of a movement which will soon revolutionize agriculture in at least half of this State.

This area of 400,000 square miles, a region more than five times as large as all New England, and nearly twice as great as the combined area of the five great agricultural States of Michigan, Wisconsin, Ohio, Indiana and Illinois, is now a region of uncertain crops and comparatively sparse population. It has few open streams which can be depended upon to furnish water for irrigation by the methods employed in the mountain regions.

At times of excessive rainfall the usually dry arroyos become streams and carry the water rapidly to the deeper streams, whose beds have been eroded until they have cut into the sub-stratum of sand and gravel. From these streams the water rapidly spreads into the sand and the excess only is carried out of the country. The physical conditions are admirably adapted to the rapid replenishment of the store of water and for its protection from waste by evaporation.

The proportion of the region for the irrigation of which the annual replenishment of the reservoir will prove sufficient has been variously estimated. Quite likely the estimates may be wide of the mark. Probably a conservative calculation would be that one-fourth of the entire area may ultimately be irrigated, while the remaining three-fourths will be devoted to growing wheat and the forms of durra which succeed without as much water as is necessary for Indian corn and some other crops.

Investigations Concerning Bovine Tuberculosis, with Special Reference to Diagnosis and Prevention. Pp. 178, pls. 6. (Bulletin No. 7, Bureau of Animal Industry.)—Contains reports covering investigations concerning the diagnosis and prevention of tuberculosis, and tuberculin and its use.

until at least an appreciable percentage of it shall have been brought into use.

A joint meeting of the Executive committee of the Kansas Irrigation Association and the State Irrigation Commission has been arranged to take place at the rooms of the Commercial Club, at Hutchinson, Kas., Thursday, November 22, at 9:30 a. m.

Weather Report for October, 1894.

Prepared by Prof. F. H. Snow, of the University of Kansas, from observations taken at Lawrence:

By far the warmest October since 1886, and one of the four warmest Octobers on our record. The second half of the month, however, was much warmer than any last half of October in the entire twenty-seven years of our observations. The first black frost of the season occurred on the 30th, ten days later than the average date.

Mean temperature was 58.65°, which is 4.32° above the October average. The highest temperature was 87.5°, on the 20th; the lowest was 28.5°, on the 31st, giving a range of 59°.

Rainfall was 3.99 inches, which is 1.11 inches above the October average. Rain in measurable quantities fell on nine days. There were two thunder showers. The entire rainfall for the ten months of 1894 now completed has been 28.12 inches, which is 4.18 inches below the average for the same months in the twenty-six years preceding.

Mean cloudiness was 22.27 per cent. of the sky, the month being 14.75 per cent. clearer than usual. Number of clear days (less than one-third cloudy), twenty-four; half clear (one to two-thirds cloudy), four; cloudy (more than two-thirds), three. There were ten entirely clear days and one entirely cloudy. Mean cloudiness at 7 a. m., 25.80 per cent.; at 2 p. m., 23.23 per cent.; at 9 p. m., 17.78 per cent.

Wind was southwest, thirty-three times; northwest, twenty-six times; south, thirteen times; southeast, eight times; north, six times; east, four times; northeast, once; west once. The total run of the wind was 12,066 miles, which is 654 miles above the October average.

Barometer.—Mean for the month, 29.068 inches; at 7 a. m., 29.085 inches; at 2 p. m., 29.048 inches; at 9 p. m., 29.070 inches; maximum, 29.422 inches, on the 13th; minimum, 28.692 inches, on the 29th; monthly range, 0.730 inch.

Relative Humidity.—Mean for the month, 59.68 per cent.; at 7 a. m., 73.90; at 2 p. m., 43.26; at 9 p. m., 61.87; greatest, 100, on the 18th; least, 22, on the 27th. There was no fog.

Publications of United States Department of Agriculture for October.

Annual report of the Secretary of Agriculture for 1893. Pp. 608, pls. 29, figs. 7.—The report of the Secretary to the President, including reports from the chiefs of the several divisions of the Department.

The Carpet Beetle, or "Buffalo Moth." Pp. 4, fig. 1. (Circular No. 5, Division of Entomology.)—This circular, which is a compilation only, gives the general appearance and method of work, distribution, natural history and habits, and remedies of this insect.

Synopsis of Report of Statistician. New Series, No. 120. October, 1894. Pp. 4.—A synopsis of the crop report for the month of October, which embraces the condition of cotton, the indicated yield per acre of same, the yields per acre respectively, of wheat, rye, oats and barley, and the final report respecting the condition of corn, potatoes, buckwheat, tobacco, sugar cane and sorghum.

Report of Statistician—October, 1894. Pp. 605-660. (Report No. 120, Division of Statistics.)—Contains crop report for October; notes from reports of State agents; table showing yield per acre and condition, by States, October 1, 1894; rice production in the United States; notes on foreign agriculture; transportation rates.

Investigations Concerning Bovine Tuberculosis, with Special Reference to Diagnosis and Prevention. Pp. 178, pls. 6. (Bulletin No. 7, Bureau of Animal Industry.)—Contains reports covering investigations concerning the diagnosis and prevention of tuberculosis, and tuberculin and its use.

Bordeaux Mixture as a Fungicide. Pp. 55. (Bulletin No. 6, Division of Vegetable Pathology.)—Bordeaux mixture was selected as the subject of this bulletin because it is now used more than any other fungicide and because there can be no question that it exceeds all others in cheapness, efficacy and harmlessness to both animals and plants.

Insect Life, Vol. VII, No. 1. Pp. iii, 54,

IRRIGATION SUPPLIES.



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figs. 17. Principal contents: The cranberry girdler; two parasites of important scale insects; the buffalo tree hopper; supplementary notes on the strawberry weevil, its habits and remedies; occurrence of the hen flea; notes on cotton insects found in Mississippi; on a Lecanium infesting blackberry; insects injuring drugs at the University of Kansas; the senses of insects (illustrated); a new species of Pezotettix; a maritime species of Coccidæ; an abnormal tiger swallow tail (illustrated); general notes; notes from correspondence.

The Journal of Mycology, Vol. VII, No. 4. Pp. v, 338-478, pls. 22 28.—Contents: Treatment of pear blight in the orchard (illustrated); experiments with fungicides to prevent leaf blight of nursery stock; prune rust (illustrated); preliminary notice of a fungous parasite on Alerodes citri; an improved method of making Bordeaux mixture; a new method of treating grain by the Jensen process for the prevention of smut; field notes, 1892; reviews of recent literature; errata to index to literature; index to literature; errata; index to Vol. VII.

Monthly Weather Review—August, 1894. Pp. 311-350, charts 4.

Charts of the Weather Bureau. (Size 19 by 24 inches.)—Weather-Crop Bulletin (series of 1894), reporting temperature and rainfall with special reference to their effect on crops. (No. 9, for the week ending October 1.) Semi-daily Weather Map, showing weather conditions throughout the United States and giving forecasts of probable changes. Weather Bureau Storm Bulletin No. 3. Tropical Hurricane of October 8-10, 1894.

Report of the Extent and Character of Food and Drug Adulteration. Pp. 64. (Bulletin No. 41, Division of Chemistry.)

Rainfall and Snow of the United States, Compiled to the end of 1891, with Annual, Seasonal, Monthly and Other Charts. Charts 23. (Bulletin C—Atlas, Weather Bureau.)

Nut Grass. Pp. 4, fig. 1. (Circular No. 2, Division of Botany.)—Gives description, modes of distribution, comparison with chufa and remedies of this plant.

Barometers and the Measurement of Atmospheric Pressure. Pp. 74, figs. 24. Circular F, Instrument Room, Weather Bureau.) Not for general distribution.—A pamphlet of information respecting the theory and construction of barometers in general, with summary of instructions for the care and use of the standard Weather Bureau instruments.

[Except, as noted, it is understood that these publications are sent free of cost to applicants. Requests should be addressed to Hon. J. Sterling Morton, Secretary of Agriculture, Washington, D. C.—EDITOR KANSAS FARMER.]

Half Rates Via the Baltimore & Ohio R. R.

On October 2 and 9, November 6 and December 4, the Baltimore & Ohio railroad will sell home-seekers' excursion tickets from Chicago to Winchester, Harrisonburg, Staunton and Lexington, Va., and intermediate points at rate of one first-class limited fare for the round trip. Tickets will be sold only on the above dates, and they will be good for return thirty days from date of sale.

Complete information relating to lands for sale can be secured by addressing M. V. Richards, Land and Immigration Agent, Baltimore, Md.

For further particulars in relation to tickets, rates, sleeping-car accommodations, etc., apply to any Baltimore & Ohio railroad agent, or L. S. Allen, A. G. P. A., Room No. 411, Grand Central Passenger Station, Chicago.

FARMER'S ACCOUNT BOOK.

The keeping of farm accounts is one of the important elements of farm prosperity which is too often neglected. This results largely from the feeling of uncertainty as to the correct method of making the entries. This is entirely overcome by the use of a book prepared expressly for the farmer and embracing a system both simple and satisfactory. Anybody who can write can keep all necessary accounts intelligibly by the use of this book.

The following is the table of contents:

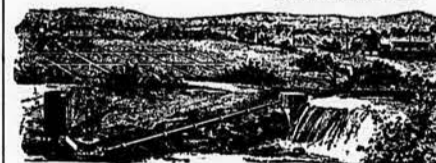
Table with 2 columns: Item and Page. Items include: Directions and Explanations (4), Introductory (5), Diagram of Farm (6), Inventory of Live Stock (7), Inventory of Farm Implements (15), Inventory of Produce on Hand (23), Cash Received from all Sources (32), Cash Paid Out (33), Field Account (38), Live Stock Account (79), Produce Account (91), Hired Help per Month (103), Hired Help per Day (119), Household Expense (131), Accounts with Neighbors (147), Dairy and Fowls (155), Fruit Account (187), Notes and Obligations Owed (175), Notes and Obligations Due You (179), Interest, Taxes and Insurance (188), Physician and Druggist Account (187), Miscellaneous Accounts (191), Improvement and Repairs (199), Weather Report (203), Recapitulated Annual Statement (211), Useful Information, etc. (219).

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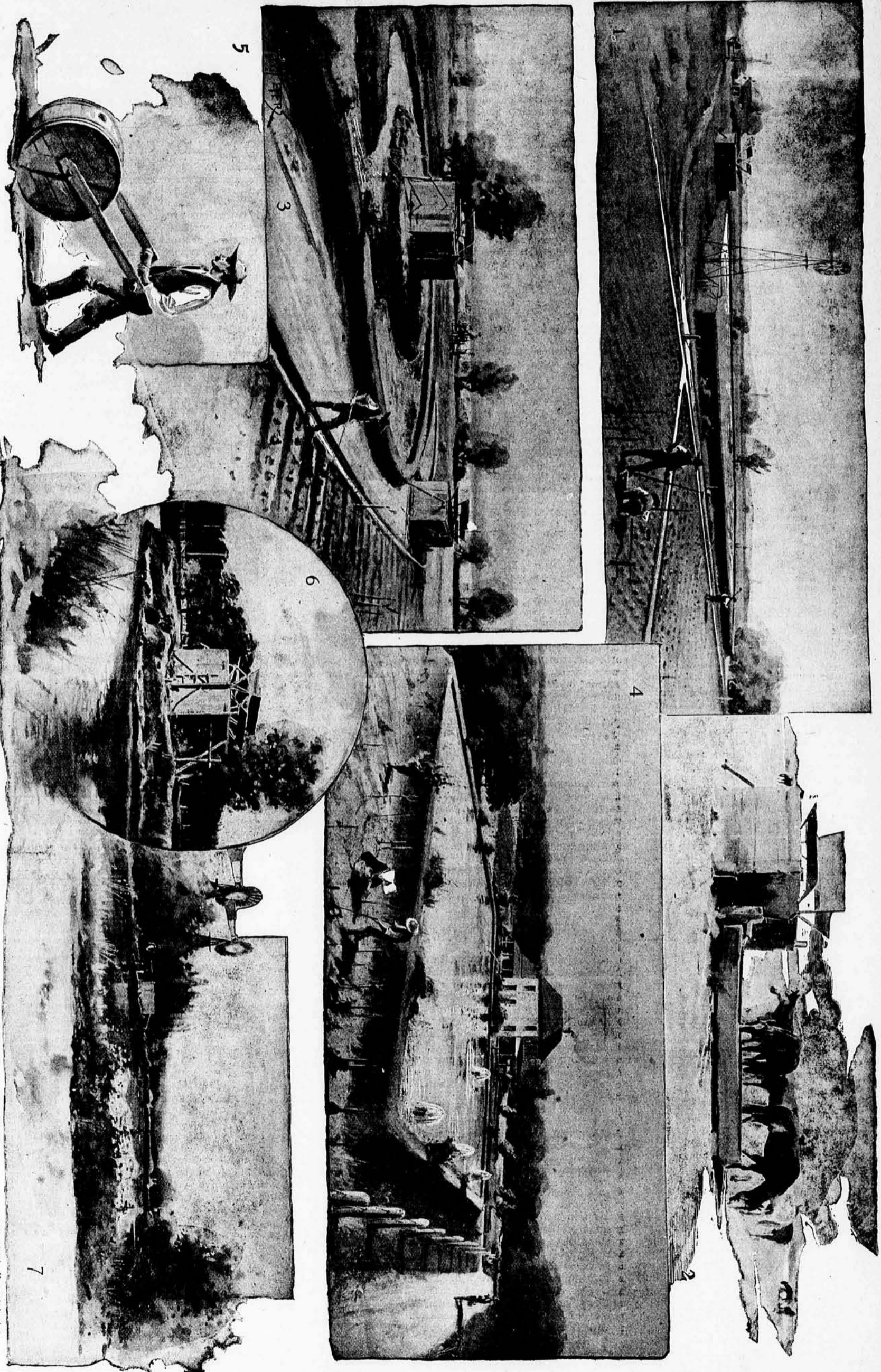
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From Harper's Weekly.

IRRIGATION IN SOUTHWESTERN KANSAS.—DRAWN BY G. W. PETERS, AFTER SKETCHES BY H. WORHALL, AND PHOTOGRAPHS. [SEE PAGE 4.]
 (1) Reservoir east of Garden City, irrigating twenty acres. (2) Six-armed home-made "Jumbo," near Dodge City, pumping capacity 10,000 gallons per hour. (3) Two eight-armed "Jumbos" near Dodge City, near Dodge City, on an island in Churchill reservoir. (4) Reservoir near Garden City, irrigating fifteen acres, stocked with German carp. (5) A determined irrigator, who rolls water three hundred yards to irrigate a small garden. (6) A large "Jumbo" near Dodge City, on an island in Churchill reservoir. (7) Reservoir near Garden City, irrigating fifteen acres, stocked with German carp.

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The Home Circle.

To Correspondents.

The matter for the HOME CIRCLE is selected Wednesday of the week before the paper is printed. Manuscript received after that almost invariably goes over to the next week, unless it is very short and very good. Correspondents will govern themselves accordingly.

The Voices.

Down in the night I hear them—
The voices, unknown, unguessed,
That whisper, and hiss, and murmur,
And will not let me rest.

Voices that seem to question,
In unknown words of me,
Of fabulous ventures and hopes and dreams
Of this and the world to be.

Voices of mirth and music,
As in sumptuous homes; and sounds
Of mourning, as of gathering friends
In country burial grounds.

Cadence of maiden voices,
Their lovers' blent with these,
And of little children singing,
As under orchard trees.

And often, up from the chaos
Of my deepest dreams, I hear
Sounds of their phantom laughter
Filling the atmosphere.

They call to me from the darkness,
They cry to me from the gloom
Till I start sometimes from my pillow
And peer through the haunted room.

When the face of the moon at the window
Wears a pallor like my own,
And seems to be listening with me
To the low, mysterious tone,

The low, mysterious clamor
Of voices, that seem to be
Striving in vain to whisper
Of secret things to me.

Of something dread to be warned of—
Of a rapture yet withheld;
Or hints of the marvelous beauty
Of songs unsyllabled.

But ever and ever the meaning
Falters and falls and dies,
And only the silence quavers
With the sorrow of my sighs.

And I answer: O voices, ye may not
Make me to understand,
Till my own voice, mingling with you
Laughs in the shadowland.
—James Whitcomb Riley, in *Armazindy and other poems*.

BAG FOR NEWSPAPERS.

The pretty pocket illustrated resembles a huge envelope in appearance, the flap serving to preserve the contents from the dust, which, as everybody knows, is very apt to collect among unbound papers. For the foundation of the pocket, cut a piece of buckram to seventeen inches in width and twenty-one inches in length. Cut off the corners at one end to the depth of seven inches to shape the flap, and fold up six inches at the other end, to make the pocket.

Now prepare the cover. Colored linen is a good material to use, being both pretty and durable, but it is quite possible to make a charming case of coarse canvas, embroidered in cross-



stitch with a thick make of cotton. Cut the linen the same shape as the buckram, but half an inch larger all round.

If white or colored flax thread is used for this purpose there are many of the Mountmellick stitches which would have a very good effect—coral stitch, for instance, would serve for outlines, Indian filling for the leaves, and feather-stitch for the stems. The letters may be traced out with fine cord. Another plan is to paint the design and to outline it with gold.

The decorated linen should then be stretched over the buckram which is next lined with sateen, or something of the sort, to suit the color of the linen. Bring the raw edges of the lining over to the right side of the pouch and sew them down. Sew up the sides of the pocket firmly and border the whole of the front of both pocket and flap with ball fringe, which should, if possible, combine the colors of the embroidery with that of the linen.

Get a round stick—part of a curtain rod will do—measuring about twenty-one inches in length and about an

inch in diameter. Make a hole with a gimlet at each end and screw in a little brass knob to finish it off prettily. Enamel the rest of the stick and, when dry, pass it under the flap of the holder and secure it to the back of the pocket with straps of linen.

Finally, add the cord and tassels across the top, which should agree with the ball fringe in color. The make of this pocket is so simple that no further explanation should be necessary.

Sealing Wax Language.

In Europe, and especially in France, there is among fashionable people a species of code in the use of sealing wax. The white article is used for communications relating to weddings, black for mourning correspondence, violet for expressions of sympathy, chocolate for invitations to dinner, red for business letters, ruby for the billets-doux of engaged lovers, green for lovers not yet affianced and brown for refusals of offers of marriage.

Blue symbolizes constancy, yellow sealing wax jealousy, and pale green reproaches.

Schoolgirls seal their letters with pink wax, and intimate friends use gray.

The use of sealing wax is exceedingly ancient. It was not, however, until the reign of King Louis XIII. of France that it became the fashion among the higher classes of Europe.

The oldest known recipe for making sealing wax was published in Augsburg in 1879, and prescribed almost the same ingredients as those now employed.

The use of blue wax was formerly restricted to royalty, a superfluous provision owing to the difficulty of imparting this color to sealing wax, for the reason that vegetable dyes when united with wax become greenish.

How to Repair Mirrors.

For repairing mirrors accidentally scratched clean the bare portion of the glass by rubbing it gently with fine cotton, taking care to remove any traces of dust and grease. If this cleaning is not done very carefully, defects will appear around the place repaired. With a point of a knife cut upon the back of another looking glass a portion of the silvering of the required form, but a little larger. Upon it place a drop of mercury—a drop the size of a pin's head will be sufficient for a surface equal to the size of a nail. The mercury spreads immediately, penetrates the amalgam to where it was cut off with the knife, and the required piece may now be lifted and removed to the place to be repaired. This is the most difficult part of the operation. Then press lightly the renewed portions with cotton and the glass presents the same appearance as when new.

What Goes With What.

Some cooks never know just what to serve with different meats as relish. Following is a table of things considered the proper caper: With roast beef, grated horseradish; roast mutton, currant jelly; boiled mutton, caper sauce; roast pork, apple sauce; boiled chicken, bread sauce; roast lamb, mint sauce; roast turkey, oyster sauce; venison or wild duck, black currant jelly; broiled fresh mackerel, sauce or stewed gooseberries; boiled bluefish, white cream sauce; broiled shad, boiled rice and salad; compote of pigeons, mushroom sauce; fresh salmon, green peas with cream sauce; roast goose, apple sauce.

How to Destroy Bed Bugs.

Clean the paint of the room thoroughly, and set in the center of the room a dish containing four ounces of brimstone. Light it and close the room as tight as possible, stopping the keyhole of the door with paper, to keep the fumes of the brimstone in the room. Let it remain for three or four hours, then open the windows and air thoroughly. The brimstone will be found to have also bleached the paint if it was a yellowish white.

Any present subscriber who will send us one new subscriber and \$1, can have his or her present subscription extended thirteen weeks for this good act.

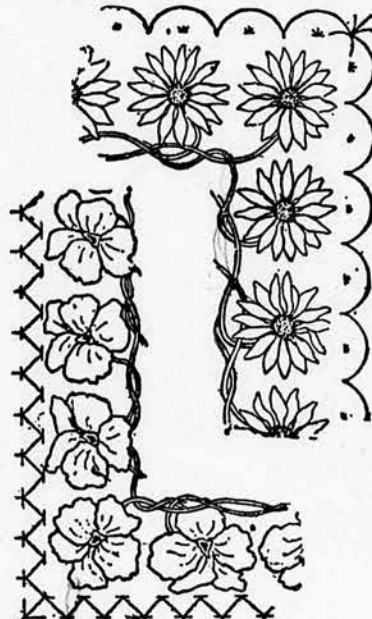


FORTY MILLION CAKES YEARLY.

THE PROCTER & GAMBLE CO., CINTI.

Borders for Doilies.

The accompanying illustrations are designed for borders to be worked upon doilies, tray cloths, tidies or any of their near relatives, in outline stitch with wash silk of any desirable shade. Very little explanation is needed, as the illustrations speak quite plainly for themselves. The little pansies and daisies are conventional in design, but it will add greatly to their artistic effect if they are not all "twins," but are made to vary in some slight details. The pansy faces may nod toward each other a little in one case and turn away from each other further on in the border, thus relieving the "setness" of any absolutely conventional pattern. It takes but a little taste and skill to make this variation, and the effect gained will more than repay one's work. In the case of the daisies, a petal or two twisted here and there relieves the stiffness very greatly. The intertwining stems form a beautiful inside finish to the border. The fancy stitching on the outside edge may vary almost indefinitely, the illustrations



NEW DESIGNS FOR EMBROIDERY.

suggesting two styles. Of course, if one has not the "gift" of making one's pencil obey one's fancies the little variations in the border can be omitted, and it can be made simply a repetition throughout of one little daisy blossom or pansy face. The design is sketched or stamped upon the linen with colored crayon or a soft pencil.—American Agriculturist.

Something About Hosiery.

A cotton stocking is preferred by many women to a lisle thread, as the twist of the thread in the lisle ones irritates the soles of the feet. Dark-blue and black stockings are liked for street wear, except where tan shoes are worn, and then, of course, the stockings match the shoes. The navy-blue stocking is usually chosen by those who find that the dye from a black stocking affects their skin. This is by no means common, but the very minute it is discovered one should cease wearing the black and select another color, or else wear white, for one never knows to what extent a skin disorder may go. With gray or scarlet shoes or slippers the stockings are chosen to match, and these may be gotten in silk at a much lower price than is given for black ones.

A cough which persists day after day, should not be neglected any longer. It means something more than a mere local irritation, and the sooner it is relieved the better. Take Ayer's Cherry Pectoral. It is prompt to act and sure to cure.

Table Etiquette.

CHILDREN should be taught to drink as little as possible while eating.

FRUIT is not to be bitten; it should be peeled and cut with a fruit knife.

NEVER drum with the fingers upon the table—or with the feet upon the floor.

"BETTER is a dinner of herbs where love is, than a stalled ox and hatred therewith."

No GENTLEMAN will ever place his arms upon the table, either before, during or after a meal.

MEATS are to be cut with a single gliding movement of the knife, not by converting it into a saw.

KEEP the elbows always close to the side, no matter how ample may be the room between guests.

NEVER hurry the dinner; let everything come along promptly on time, and move steadily thereafter.

COED oysters or clams are to be eaten with lemon juice dropped over—never with salt and pepper.

BE punctual—to keep a dinner party waiting under any circumstances is the gravest social indecorum.

TAKE soup only from the side of the spoon—unless wearing a mustache; never sip it with an audible sound.

NEVER play with knife and fork, or other table utensils; do not touch them at all, except when about to use them.

HE lives longest and most safely who at dinner and elsewhere turns down his glasses and "tastes not the cup."

IF an accident of any kind should occur during the dinner, do not seem to notice it—unless help may be quietly given.

FISH is to be taken with a fork only; it should be carried to the mouth with the tines of the fork pointing downward.—Good Housekeeping.

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ARE THE STRONGEST.
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and Boots, Harness, Rubber Boots and Coats, wire Poles, and do a hundred odd jobs at home, and save your time and money with our HANDY OUTFIT. A best quality Iron Lasts, 56 articles in all \$8. No. 2, without harness tools \$6 articles \$2. Cash with order. 50c. gift free with each order. Low Express rate. Nothing equal offered for the price. Thousands in use. Free catalog. Agents wanted. KUHN & CO, Box D Moline Ill.

CONSUMPTION SURELY CURED.

TO THE EDITOR—Please inform your readers that I have a positive remedy for the above named disease. By its timely use thousands of hopeless cases have been permanently cured. I shall be glad to send two bottles of my remedy free to any of your readers who have consumption if they will send me their express and post office address. Respectfully,
T. A. Slocum, M. C.,
No. 188 Pearl Street, New York.

The Young Folks.

Hay! Bee! Sea!

Good Farmer Kay took Johnny Burt with him one day To see the lads and lasses turn the new sweet smelling A. And Johnny worked as hard, I think, as any on the farm. Till from the hay a B flew out, and stung him on the arm. Then Johnny sat him down to rest, and watched the distant C. And saw the fishing boats sail by along the river D. E saw the horses drawing near, and wanting them to make An F-ort, and to see them give their tinkling bells a shake. He got his Uncle's walking-stick and then he marched about. And when the wagons drew quite near, G-up! began to shout. Dog Carlo came to friak about where they the grass had mown. And Johnny saw that in his mouth he had a large H bone. But Carlo quickly dropped his bone, his I was on a tree In which a bird—a J I think, was singing merrily. Then Johnny called his Uncle K to see him throw a stone. But as there were no stones about, why Johnny threw the bone. But do you think in doing so he frightened Master Jay— Oh, no, he sat and whistled still full fifty L's away. Now M-ma came to fetch him home, and when she saw the bird, She said it was a magpie N, now wasn't that absurd? As Johnny said "I am so tired, O I should like to ride." They set him on the horse's back, although it was too wide. At last they all got safely home, and Johnny ran before. He lived in such a pretty home with sweet P round the door. He took his hat and jacket off, and had some bread and cheese. And then he ask d for Q cumber, he was a dr-a-ful tease. And though they said he mustn't take it, still he said he would. He took a piece and ate it up, and said "R that was good." But though he thought he'd done it well, he didn't quite R-cap. But found that by his wilfulness he'd got into a scrape. The cucumber brought dreadful pains, as it will do you see. So Emma sent him off to bed, and gave him singer T. The indigestion's bad U know, or so at least he said. And Johnny like a letter V lay doubled up in bed. Such dreadful pains will W, although you are a man. And little Johnny didn't know how great a risk he ran. But this I think is pretty clear, and no more need be said. That little Johnny Burt had not X-actly a Y Z head. —*Australian Agriculturist.*

WEDDED AT TEN YEARS.

Everywhere in the east, and especially in Hindustan and Nepaul, marriages are made at a very early age. Parents contract for the wedding of their children while they are yet but little boys and girls, and neither the boy nor the girl has any voice in the matter. They are simply coupled with all the ceremony and extravagant display that the parents on both sides can afford, and then the poor little things go back to their homes, to be nursed and petted and trained until they are old enough to have a home of their own. Thus this little king of Nepaul, the eighth royal Ghoorka who had come to the throne, was married when he was ten



THE BOY KING RIDING HIS PET PONY.

years old to a baby princess half his age, chosen for him from one of the royal families of northern India. Nor did it ever occur to the prime minister, or the priests, or the astrologers, or the match-makers, that either the bridegroom or the bride had anything whatever to do with the business.

But the wedding was "perfectly splendid." A picturesque concourse of Asiatic guests, with a sprinkling of European strangers, was gathered in the pavilions and rotundas of the palace; and there was profuse distribution of pretty souvenirs and gifts

among them. Everyone received something—a nosegay of rare eastern flowers emblematic of happiness and joy, a miniature phial of attar of roses, a little silver flask of delicate perfume, a dainty scarf or handkerchief sprinkled with rose water, a curious fan, a fantastic toy of ivory, a lacquer box. And then came the little king—alone of course, for an oriental bride must not be exposed to the public gaze—borne on a silver litter curtained in orange and purple satin, embroidered with gold, and hung with massive bullion fringe. Seated on a great cushion of cloth of gold piled with shawls of cashmere and canton, he was borne around the rotunda, a luminous vision of flashing jewels, and a musical murmur of tiny bells, from his plumed helmet to his slippers.

And when he had made his royal salaam, or salutation, to the guests and departed, the *tamasha* began—that is, the grand show and the glorious fun: the nautch maidens, or dancing girls, the musicians and jugglers, the glass eaters and sword-swallowers, the Nutt gypsies, who are wonderful gymnasts and acrobats, and the Bhootiyar wrestlers from the mountains.—St Nicholas.

Catching Sardines.

The next time the readers of this paper eat sardines it may interest them to remember how they were caught in the old California days. Only Spanish and Indians were in California then, and they were far more interesting to look upon than the present inhabitants of the Gold state. The men of the aristocracy—caballeros—wore jacket and trousers of colored silk over white lace and linen, high boots of soft leather, broad hats covered with silver eagles; the women—donnas—full, flowered gowns, and a strip of silk about the head and shoulders and many jewels. The Indians wore a gay striped blanket, their children nothing but a shirt twined about the waist and tied in a knot at the back.

In the autumn, on certain days, all the fine people stood on the beach of the bay of Monterey and watched the Indians catch sardines. The Indians would wade up to their knees in the surf and scoop up the swarming little fish with their nets. But the sardines would sometimes come to the shore in shoals to escape the greed of the larger fish. It was a very fine sight to see the silvery fish rushing through the dark blue water, then leaping over the rocks on the white sand.

In the bay the great whales spouted like geysers or reared so high above the water that the swordfish, seeing his chance, sprang upon and pierced his enemy. Thereupon the whale would drift to the shore and die among the sardines. Hundreds of birds, attracted by the dead fish, would fly down from the pine woods on the hills and add to the liveliness of the scene by their tireless darting and screaming. At night, when the caballeros and the donnas were dancing in the adobe houses and the Indians were asleep, bears and coyotes would come prowling out of the hills and eat what the birds had left.—*American Youth.*

Monkey and Goose Contest.

Combats between animals of different species are a source of great amusement among the Javanese. One of the most popular contests is that between monkey and goose. The monkey is tied to one of the goose's legs, by means of a cord, and both animals are set down near the bank of a river, or pond. The goose, standing in dread of the monkey, seeks for safety in the water, and the monkey, afraid of the water, exerts himself to the uttermost not to be drawn into it. As a rule, the goose draws the monkey into the water, and then the cunning simian sits astride the goose, in equestrian fashion. The goose then tries to dive, and the monkey prevents her if he can; and so the fight goes on until the spectators tire, and the animals are released from an uncongenial companionship.

News comes from Austria that a few weeks ago a boy fourteen years of age was arrested at Trieste for speaking disrespectfully of the emperor. He was tried secretly, and sentenced to two months in prison, with hard labor. At first it was proposed to banish him from the country.

Highest of all in Leavening Power.—Latest U. S. Gov't Report.

Royal Baking Powder

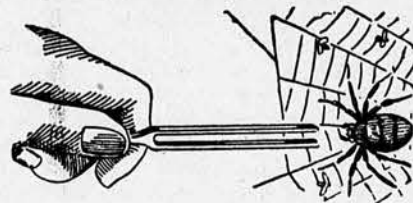
ABSOLUTELY PURE

It Frightens Spiders.

A friend of mine one day sounded a tuning fork within an inch or so of several spiders' webs, and found, to his astonishment, that in every case the spiders came for the fork in an attitude of attack.

I could give him no explanation for this, as it had not come under my observation. Since then I have learned from naturalists who have studied spider life that a certain species of spider will attack the tuning fork in the manner my friend described to me.

There are three species of spider common to our hedges and gardens.



The one a big one, which can be seen in the autumn in great numbers, sitting in the middle of a web, and the other two of a smaller and more graceful build. They all three spin webs of different patterns.

When the tuning fork is sounded over the web of the biggest spider it will at once raise its forelegs to snatch at the instrument. When sounded over the smaller ones, one will drop at once by a single web to the ground, while the other will retreat to the furthest end of the web.

Is it the vibratory movement of the tuning-fork that is communicated to the web, and felt by the spider through its legs, or does the spider hear the sound?

Opinions are divided, but generally inclining to the direction of the spider hearing the sound. Others there are, however, who think that the sound of the tuning fork is mistaken by the spider for the buzz of its natural enemy, the wasp.

The big spider knows from experience that it can kill or keep off its enemy, and so springs forward to the attack. The smaller ones, on the other hand, know equally well that, unless they can escape, they will be snatched by the wasp from their nest, and so they retreat, the one dropping to the ground and the other seeking the shelter of the far corner of its web.

A spider looks to me such a calmly cruel and merciless insect; think of the tortures of the fly when it gets entangled amid those deadly gossamer strings—the more it struggles the more completely does that web of death entwine it. But I am glad to state that death to the fly after the spider's bite is very quick.

From numerous experiments made by placing bees in different spiders' webs that spin among currant bushes I found that in every case the spider took good care to keep out of the reach of the bee's sting while encircling the unhappy insect round and round with its endless length of web till all hope of escape was over. The spider then cautiously approached the bee, gave it one bite in the leg and retreated to the corner of its web to watch the result. The struggles of the doomed bee got less and less, till within one minute of the bite they ceased altogether. The poison of the spider had done its work very speedily.

Dr. Dallinger, who for many years has been making a close study of the ways and doings of spiders, speaks very highly of their intelligence and considers them of a more superior order

than has usually been imagined. But all observers are now telling the same story of that particular form of life which they have sympathetically studied.—*Golden Days.*

Small boys who cannot resist the temptation to make predatory excursions on neighboring apple orchards should be transported to the Sandwich islands, where the apples have become wild, and where forests of many acres are found in various parts of the country. They extend from the level of the sea far up the mountain sides. It is said that miles of these apple forests can occasionally be seen. A traveler is responsible for the statement that the extent of one of them is between five and ten miles in width and about twenty miles long.

Baldness is either hereditary or caused by sickness, mental exhaustion, wearing tight-fitting hats, and by overwork and trouble. Hall's Renewer will prevent it.

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Home Visitors' Excursions.

On October 17 and November 14 the Nickel Plate road will place on sale at their ticket offices in Chicago and suburban stations, home visitors' excursion tickets to all points in Ohio and Indiana at one fare for the round trip where rate is not less than \$2. Tickets limited to return within twenty days from date of issue. Good going only on October 17 and November 14. City ticket office, 199 Clark street, Chicago. Depot, Clark and Twelfth streets.

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An extra copy free fifty-two weeks for a club of six, at \$1.00 each.

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Display advertising 15 cents per line, agate, (fourteen lines to the inch). Special reading notices, 35 cents per line.

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Annual cards in the Breeder's Directory, consisting of four lines or less, for \$15.00 per year, including a copy of the KANSAS FARMER free.

Electrotype must have metal base. Objectable advertising 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 the 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 orders KANSAS FARMER CO., Topeka, Kas.

The prices of sugar have taken another tumble. In New York granulated had been selling at \$4.23 per 100, until a week ago it dropped to \$4.11.

It is officially estimated that in Missouri 20 per cent. of the surplus wheat will be fed to stock. The average of the estimates place its feeding value at 104, corn being 100.

We have on hand three "Mary Jane Dishwashers." The price is \$3 each. But to close out we will send one dishwasher free to any one sending us five subscriptions and \$5.

We want our readers to secure for us thousands of new subscribers for the KANSAS FARMER and we will pay well for such work. If you will get up a list, write this office for liberal terms.

Out of a list of twenty-seven leading railroad and other stocks listed by Henry Clews & Co., all but four show a decline in prices. The average decline of the entire list is 11.16 per cent. since this date last year.

The Missouri State Board of Agriculture reports that the acreage of wheat in that State is about 5 per cent. less than last year. The condition has declined some since last month on account of insufficient rain, but is still eight points better than at this date last year.

Every farmer in Kansas, and especially the breeders and stock-raisers, should have the greatest live stock journal in the world, the Breeder's Gazette, of Chicago, price \$2 a year. We make a special offer of it and the KANSAS FARMER, both papers one year, for only \$2. Subscribe now through this office.

During the last few months about 90 per cent. of the thought of the people of Kansas has been of politics and only 10 per cent. of business. The election is now over and it is time to reverse the scale and devote 90 per cent. to prosperity and 10 per cent. to politics. Send the names of your neighbors to this office and we will forward them sample copies of the KANSAS FARMER and help turn their thoughts to the subjects which make for prosperity.

We desire to call attention of our friends to the fact that on January 1, 1895, about ten thousand of KANSAS FARMER subscriptions will expire. If only five thousand of you will kindly send in your renewals during December, it will be a great accommodation to us and will cost you no more than it would a month later. The other five thousand with an equal number of new ones we naturally expect each January will keep our subscription department busy the whole of that month. Please carefully consider our modest request. Send for our supplement for clubbing list.

ECONOMY IN FEEDING.

Modern experimentation has thrown much light on the subject of feeding and has pointed out the fact that the best development of animals at minimum cost depends more upon the proper proportioning of the rations than upon the quantity or the expensiveness of the food given. This proportioning of feeding stuffs is usually denominated "balancing the ration," and a properly proportioned feed of proper amount for any animal is called a "balanced ration." There has been some complaint from practical feeders, that writers on this subject have not made it sufficiently plain to be understood by the feeder who is not well versed in the meaning of scientific terms. It is the purpose of the writer to clear away all cause of obscurity and to make the subject so plain that every intelligent person can understand it, whether he has or has not had the advantage of a scientific education.

Every observer knows that to sustain its life and to promote its growth, an animal must take into its stomach such substances as will replace the waste which goes on in every living creature. If the animal grows, not only the waste must be repaired but additional new materials must be incorporated into its body. To illustrate: A very large percentage of every animal's weight is water, and much of the waste consists of water. Common observation shows that a large proportion of what the animal takes into its stomach must be water. The quantity of water required is different for different species of animals of the same weight, and it differs, also, for the same animal at different seasons of the year, etc. It will not for a moment be supposed that any sort of dry feed can be substituted for water in the animal economy. It would, therefore, be quite proper to insist on a suitable proportion of water for every animal. But this want is so obvious and the inclination of the animal may be so fully trusted in the matter, and withal, water is usually so abundant that the proportioning of the water is left to the animal itself. There is considerable water in most feeds, and in some there is a great deal, so that the water drank is really only the balancing of the ration as to that element.

Another familiar truth about feeding is, that grain, corn for instance, excellent feed as it is, does not meet the full wants of the animal. It may very nearly meet the wants of the pig, but it is not an unheard of thing that somebody's "hogs got poor on corn and water." A little clover, a little milk, a little, or much, of almost any vegetable or animal substance added to the ration of corn makes a great improvement in the growth and health of the pig.

These and many other general observations have led to carefully-conducted experiments, in great numbers, for the determination of such feed proportions as will best promote the growth or the development of the best functions of each kind of animal. In this study it was soon developed, indeed common experience had shown, that some articles of food could be substituted for others without appreciable detriment.

A full study of the composition of various feeding stuffs and their effects on animal development led eventually to the classification of the substances required and later to a tolerably accurate determination of the proportions of each class which should be fed. While the analyses of feeds showed them to be composed of complex ingredients it was found quite possible to make rather simple classifications of these according to their effects in the animal economy. Thus, some substances are largely digested and assimilated while others are not digested. This at once gave rise to the classification into digestible and indigestible substances, both of which are found in every feeding stuff. Consideration is usually confined chiefly to the digestible constituents, although the proportion of digestible to indigestible is a matter of importance, and substances which have not a reasonable proportion of digestible matter have less feeding value than is represented by the absolute quantity of digestible constituents which they contain.

The classification of the digestible

ingredients has received most careful attention and it has been found that they may be grouped under three heads. While two of these have received rather formidable names, they are not frightful when one has become accustomed to them.

The first group is of the food ingredients which go to the formation of muscle—lean meat—and to the promotion of growth. These substances, in whatever article of feed found, are called proteins. The second group consists of such substances as go chiefly to the production of fat and the maintenance of the heat of the animal. This group is divided into two subgroups, according to the composition of the substances, it having been found that such ingredients as starch, sugar, etc., and vegetable oils, as linseed oil, cottonseed oil, etc., are fatteners and heaters. The starch, sugar, etc., are grouped under the general name of carbohydrates, and the oils, etc., are grouped as fats.

An eminent German experimenter,

Dr. Emil Wolff, worked out and published a table of the requirements of various animals of each of these substances. If fed in about these proportions the best results may be expected:

Table with 3 columns: Protein, Carbohydrates, Fat. Rows include Oxen at rest in stall, Wool sheep, Coarser breeds, Finer breeds, etc.

PER HEAD AND PER DAY.

Table with 5 columns: Age, Average live weight per head, Protein, Carbohydrates, Fat. Rows include Growing cattle, Growing sheep, Growing fat swine.

These tables of animal requirements, which should be preserved for reference by every feeder, give the key to the proportioning of feeds. It remains, however, to ascertain in what of the usual feeding stuffs the required ingredients may be found and in what quantities. This has been the subject of much investigation and tables have been prepared giving the average results of analyses. The following table will be found invaluable:

DIGESTIBLE FOOD INGREDIENTS IN 100 POUNDS OF FEEDING STUFFS.

Large table with 5 columns: Water, Protein, Carbohydrates, Fat. Rows include Green fodders, Rye fodder, Oat fodder, Redtop, Orchard grass, Meadow fescue, Timothy, etc.

*Average for all varieties.

With these tables at hand the feeder can calculate a balanced ration as well as the composition of feeding stuffs. It is then, with this information at hand, but a question of arithmetic to determine the most economical proportions for rations for any kind of stock.

SECRETARY COBURN'S WORK APPRECIATED.

Edward Atkinson, the noted savant and social economist, of Boston, appears to have found a mine of facts and figures useful to him, in the September Quarterly Report of the Kansas Board of Agriculture. In a letter to Secretary Coburn, asking for a second supply, he expresses some of his views on matters of much interest to Kansas, and Kansas producers especially, in part as follows:

"I have received the copies of the report and have examined it with admiration due to the excellent method in procuring and tabulating the information. It gives a very complete reply to many questions put to me in the course of my examination before the Royal Commission on Depression in Agriculture in Great Britain, and if you can spare twenty copies more, that will enable me to supply each member of that commission with a copy. I regard it as of very great importance that Englishmen should comprehend the conditions of agriculture in this country, especially in respect to wheat. It is very hard for them to comprehend a condition of farming in which the farmer pays no rent and when free from rent secures to himself whatever rental value it may be expedient to charge against the product for the use of the land.

"I observe that during the last ten years the average wheat product per acre in Kansas, taken as a whole, has been fifteen bushels and a fraction; that is the years from 1883 to 1892, not including 1893. If 1893 be included it comes to within a fraction of fifteen bushels. Now, then, according to your farmers' reports a yield of fifteen bushels to an acre gives a cost of 48 cents per bushel, which would be \$7.20 per acre, including rental value. The rental value is a little over 25 per cent. Deduct this and you have \$5.40 cost. The average value of straw is more than 40 cents per acre, which brings the actual cost or outlay, including depreciation, to 33½ cents per bushel. If that is a fair deduction it is a very important one.

"I long since told the people of Great Britain that our supply of wheat would continue to increase very rapidly so long as the price in London did not fall below 32 shillings a quarter (eight bushels), or about \$1 per bushel, delivered there. At the recent hearing I said that I did not think the area of land under wheat would increase at 25 shillings per quarter or 75 cents per bushel, but that I thought better methods of cultivation, rotation of crops and further reductions in cost would probably maintain our supply at that price unless we could find a better use for the wheat than to sell it. Your investigation gives the proof that there is a better use for wheat than to sell it at 75 cents per bushel delivered in England."

The Farmer's Account Book.

EDITOR KANSAS FARMER:—For several years I have been in search of a farmer's account book which should answer the purpose for which it was made and which should, at the same time, be so conveniently arranged that farmers would use it.

Since my examination of the "Farmer's Account Book," advertised in the KANSAS FARMER, and which I lately bought of you, I believe I can say that I have found what I have so long been searching for. Indeed, I am more than pleased with the book and firmly convinced that it will fill a long-felt want.

There has never, in late years, been any lack of systems of book-keeping or farm account books, but these have almost uniformly had the most serious defects of being high in price, not well adapted to the purpose for which they were made or were so cumbersome in arrangement that farmers would not use them. The "Farmer's Account Book" which you offer has none of these defects. It is convenient, both in size and arrangement, and is sufficiently comprehensive for use on almost any farm, while the remarkably low price asked for it ought to make it popular.

A successful farmer is always one who keeps accounts and who always knows "where he is at," and no farmer

ought to allow himself to neglect this most important farm operation any more than he would neglect to feed his team. Neglect in either case involves a loss and in one case no more than in the other, and I want to congratulate you upon the fact that, in offering so valuable a book for so little cost you have taken a long step towards making easy a duty which every farmer owes to himself and family.

I. D. GRAHAM,

Secretary and Instructor in Book-keeping, Kansas State Agricultural college, Manhattan.

Publishers' Paragraphs.

"Dairying for Profit or the Poor Man's Cow," by Eliza M. Jones, judge of dairy products at the World's Fair, is a brief practical treatise, valuable to every owner of a cow or of a dairy herd. Send a new subscriber with your renewal and we will send this book as a premium.

CHANGE OF TITLE.—In order to broaden its sphere of usefulness, the name of that well-known periodical, the *Saw-Mill Gazette*, has been changed to *Lumber*. It will now cover the entire field of wood-working, as its new title succinctly states, "from the tree to the finished product." Its subscription price will remain unchanged, and a sample copy of the paper in its new form will be sent on application to the publishers, M. T. Richardson Co., 84 Reade street, New York.

IN BIRD LAND—Is the title of a beautiful little book by Leander S. Keyser, just recently published by the well-known printing house of A. C. McClurg & Co., 117 Wabash avenue, Chicago, Ill. This book gives accurate descriptions of birds and their habits, but told in such a charming way that one becomes as interested in it as though it were an exciting novel. Farmers of Kansas and the West generally, have no better friends than the birds, and to know all about them would make a farmer better qualified for profitable labor in his vocation. The price of the book is \$1.25.

We are pleased to again call our readers' attention to the advertisement of the Famous Manufacturing Co., of Chicago, who, if all do not, should know by this time manufacture the "Champion" incubators and brooders. They have for this season a machine that cannot fail to give satisfaction, as it embodies all of the best principles that their years of experience have proven to be correct, as well as new improvements that they have found to be valuable in artificial incubation. Their elegant catalogue full of practical information will be sent free on application if you enclose a two-cent stamp to help pay postage.

The "Farmer's Ready Reference or Hand-book of Diseases of Horses and Cattle," is the title of a short and plain description of the ordinary diseases of horses and cattle, with simple, practical rules for their care and treatment, by Dr. S. C. Orr, who needs no further commendation to KANSAS FARMER readers than to say that he it is who conducts the invaluable Veterinary department of this paper. The book is arranged so that any one can understand it and can use it. The causes, symptoms and treatment of the ordinary diseases are described without a bewildering use of scientific terms. It is impossible in a brief notice to do justice to this valuable book. It is published by the author and will soon be for sale by the KANSAS FARMER.

A colored frontispiece entitled "A Rest on the Way," is a feature of the November issue of the *English Illustrated Magazine*. Stanley Lane-Poole has an interesting article, "Caged in China," treating of this mode of imprisonment, past and present. "Malachi," by Gilbert Parker, is a very interesting story. "The Life and History of Lord Russell of Killowen," the present Lord Chief Justice of England, is told by Katherine Tynan. Stanley J. Weyman contributes a second story, "From the Memoirs of a Minister of France—the Tennis Balls." "The House Where Napoleon Was Born," by Caroline Holland. "The Pessimist of Plato Road," by George Gissing. "The Man and the Town—Lord Swansea, and Swansea," by Frederick Dolman. "Popular Art," by Mason Jackson. "A Handful of Gems," by E. L. Cutts, appear in the November issue of the *English Illustrated Magazine*.

The Speaker of the House of Representatives, both in Congress and in our State Legislatures, has become an official second in power only to President or Governor; and it is questionable whether his actual influence upon affairs is not greater than that of either of these. He has the sole power of appointing all the committees of the House, with no censorship or veto over him. It has long been felt by many that this power is too great and that in its exercise great wrongs are constantly being done. Nobody has discussed this matter more trenchantly than Raymond L. Bridgman in his article, "The People Should Elect," in the November number of the *New England Magazine*. An officer wielding powers so great should be elected directly by the people, is his conclusion in the face of the problem. It will occur to others that the Speaker's power might properly and easily be limited; but every political student will read with interest Mr. Bridgman's careful paper. Warren F. Kellogg, publisher, 5 Park Square, Boston.

A Day at Shannon Hill.

Believing that the people of Kansas ought to be more familiar with its live stock interests and the extent to which some of the more enterprising and ambitious citizens have gone into the business with the end in view of raising the standard and thereby making live stock husbandry more desirable and profitable, we continued our tour of inspection by a day's visit to Shannon Hill stock farm, that lies four and a half miles west of the city of Atchison, in Atchison county, Kansas. The farm contains 640 acres, whose surface is slightly rolling, a very rich soil and sub-divided into twenty and forty-acre fields or pastures that are richly coated with blue grass, timothy and clover. The buildings, grinding machinery and conveniently-arranged paddocks adjoining, all indicate method and that a well-defined object is entertained by its well-known owner, ex-Governor Geo. W. Glick.

The principal aggregation of pure-bred registered animals that first attracted our especial attention was the herd of over one hundred head of Short-horn cattle that was founded early in 1873 by its present owner, Mr. Glick. To better understand the high character and individual make-up of the herd, it will be necessary to enter into a brief description, including the blood lines of some of the individuals that now comprise the herd. At its head stands Winsome Duke 11th, 115.137 that was dropped December 10, 1891. He was sired by Wild Eyes Duke 6th 89943, and out of Imp. Wild Eyes Winsome 2d (Vol. 20, p. 16266), that was bred by Mr. J. Rigg, Wortham, Hill Park, England. This denizen of English soil was imported in 1880 by the late H. M. Valle, of Missouri, and is a lineal descendant of the world-famed Wild Eyes tribe, bred by Thomas Bates, of England, the greatest, in his day and time, of Short-horn breeders. A draft of three cows belonging to this family sold at the noted Mills sale, in New York, for an average of \$3,000 each. There is not in all Short-horn history a family more popular nor one held in higher esteem by the Short-horn breeding world than is this Bates family. The reader will observe that Winsome Duke 11th is in his three-year-old form and now weighs about 1,900 pounds, has great character, an abundance of substance and quality, a deep-meat, mellow, easy handler, an excellent coat, great style, with all the standard regulation Short-horn points high up in the scale. It being now over two years since his introduction in the herd, a very strong array of about thirty of his sons and daughters attest his great worth as a sire. A draft of ten heifers sired by him lately went to James Donald, of Lowry City, Mo., and three head to C. M. Irwin, of Wichita, Kas. The sons and daughters, in the essential conformation points, like their sire, are extra strong in the heart, broad-backed, deep in flank and quartered well down to hock.

After several months' inquiry and herd inspection, searching the American herds bred in lines similar to that of Shannon Hill, Mr. Glick found the grandly-bred young fellow, Grand Duke of North Oaks 11th, got by Grand Duke of North Oaks 7th 98336, he by Imp. Berkley Duke of Oxford 2d 54790, tracing back down both his paternal and maternal lines through the great Duchess family to its very foundation. His dam was the Imp. Grand Duchess of North Oaks (Vol. 31, p. 683), got by Grand Duke 46th 75121, and out of Imp. Grand Duchess 47th (Vol. 27, p. 606), running back to Duchess 1st by Comet (155). His grand-dam cost \$6,000 in England, his dam \$5,000, and his grandsire, Berkley Duke of Oxford 2d, \$5,000, when in his calf form before leaving English soil for this country. He was bred by William Miller, of Minnesota, and was regarded by his original owner one of the strongest bred and best individuals that was ever sent out from the North Oaks herd at Storm Lake. There is really but one way to describe him, and that is to see him, carefully look him over and handle him. Briefly, he has great width, length and depth, is of the sappy kind, deep-meat and an excellent handler, great substance and family character and one of the kind the more you look at him the better you like him. Take these two harem kings here at Shannon Hill, and carefully consider their breeding and individual characteristics, and the writer thinks it barely possible if there are two equals now doing service in any one single herd in all the West.

Among the fifty breeding cows composing the herd are Waterloos, Kirklevingtons, Filberts, Gwynnes, Sanspareils, Lady Jane and the Belina families. Among others in the Waterloo division is Waterloo Lily 7th, Waterloo Lady 2d and three heifers, all of Col. Valle's importation. There are ten head of the Kirklevingtons, and among them Kirklevington Walnut Duchess, Kirklevington Queen, Kirklevington Dairy. The one to first attract the attention of the visitor is Kirklevington Duchess, a roan of great size and quality. On reference to the records the reader will find that the individuals here at Shannon Hill belonging to the Filbert family are con-

sidered the best bred Filberts in the United States. The bulls in pedigree were bred by Thomas Bates and R. A. Alexander, and include three more Duke crosses than any other in America. The proprietor of Shannon Hill and the very able and experienced farm manager, Mr. W. L. Chaffee, have decided to use the young Grand Duke exclusively in this family of females as well as the Waterloo division. The original Gwynne in the herd was Alice Gwynne, that came from the Princess family, for which Mr. Glick paid \$500 when she was a sucking calf. She was sired by Imp. Baron Hubback 2d (27947), the prize yearling at the Northampton, England, show, just before his importation by Richard Gibson at a cost of \$6,000. The dam of Alice Gwynne was Nellie Gwynne, sired by Royal Commander, that was imported into this country and after three years service was exported to England at the price of \$4,000. There are five harem queens belonging to this family that bear a close inspection. The Sanspareil foundation of the herd was Queen of the East by the 22d Duke of Airdrie 13874. There are twelve female descendants now in the herd and a right attractive lot they are. The Lady Janes are the descendants of Miss Watson, got by the 3d Grand Duke of Oxford 4860, tracing to Imp. Lady Jane by Whittington 12399. Among the great qualities for which this family is noted is that they are great feeders and milkers, with plenty of high-class Short-horn character. In the list of re-enforcements that have come to the farm since the establishment of this family was Gustavus 17269, in his calf form, for \$500, and Fayette 10053 for \$1,000. There are now twenty head here that belong to the noted Belina family that are the descendants of Rose 7th by Rama 7158, that was in his day a grand show yard king and prize-winner. His daughter, Rosa 7th, was a direct descendant of Imp. Belina, a grand show cow and a wonderful milker, giving ten gallons of milk a day. One of her daughters, Belina 9th, was a great milker, giving nine gallons per day. In order to do this, the reader readily understands that they must be great feeders as well. Rose 7th never left the show ring without a ribbon, and such was her great individuality that her fifteen descendants now in the herd possess the family traits to a marked degree. Among the richly-bred things in the herd are four females belonging to the Princess family, the descendants of 9th Lady Sale of Brattleboro. It is generally agreed among those well up in Short-horn lore that this is the oldest family in English cattle history.

Space forbids that extended and minute description which the individuals of the herd merit, and we go on to the young things for a mere passing notice. The visitor will find a grand lot of young heifers over 1 year that have not yet been bred. Also four short yearling bulls that ought to go out into good hands. In the youngster division are seventeen heifer calves belonging to the early crop of 1894 and sixteen young bulls under 1 year that will be ready to do service next year. We feel safe in stating that the visitor will be agreeably surprised in looking over this strong array of young fellows. Not a cull or a bad one in the entire lot. They are all of the broad-backed, good heart, low-flanked kind, with plenty of Short-horn quality. It would be unreasonable to expect anything else after looking over the strong array of kings and queens that comprise the herd, and under the careful and judicious judgment of Mr. Chaffee, whose twenty years of success and experience ought, in connection with the ambition of Mr. Glick, to produce and build up a herd worthy the pride of Kansas and the esteem of those desirous of better beef cattle the country over. W. P. BRUSH.

Every farmer who desires to improve financially and in his vocation from this time on is cordially invited to subscribe for the old reliable KANSAS FARMER, a medium which will help do it.

There is no better sewing machine sold in Kansas than the "Kansas Farmer Improved" machine, which we offer with a year's subscription for only \$20. The machine is fully guaranteed. Such a bargain is the opportunity of a lifetime. Get up a list of fifty yearly subscribers at \$1 each before Christmas and we will make you a present of this elegant machine.

On Sunday, 18th inst., a through daily Pullman sleeping car line between Kansas City and Jacksonville, Fla., will be inaugurated in connection with our Florida fast mail train No. 1, leaving Kansas City at 10:30 a. m. Train will leave Memphis at 5:20 a. m., arriving at Birmingham at 2:50 p. m., Atlanta 8:50 p. m., Macon 2:20 a. m. and Jacksonville at 9:45 a. m., connecting with all trains for South Florida points.

The Kansas Weekly Capital publishes more Kansas news than any other weekly paper. A free sample copy will be sent on application to THE TOPKA CAPITAL CO., Topeka, Kas.

Horticulture.

Small Fruit Garden.

EDITOR KANSAS FARMER:—In more respects than one the farmer is much more highly favored than the laborers in other occupations. Very many of the supplies of food are easily within his reach by the exercise of some care and attention. In their season he can enjoy the fruits of his labor in the vegetables that he produces in all their delicious freshness as they come from the soil, which is a luxury that others do not always enjoy. He can enjoy all the varieties that he chooses to cultivate and that the climate will produce, just for the labor required in the preparation of soil, planting, cultivation and gathering for use.

But he is favored in another respect, in that he can, if he chooses, freely enjoy to the fullest extent all of those small fruits that those living in cities look upon as luxuries. All that is required is the planting and cultivation to be possessed of strawberries, raspberries, blackberries, gooseberries and cranberries. But it must not be expected that these may be had without labor, for the production of small fruits means a careful preparation of soil, such selection of varieties as will insure a good succession of all the different kinds, careful planting and such after cultivation as will insure a healthy, vigorous growth, which means good berries. This is not what it should be unless it secures a soil clean and free from all weeds.

In the case of strawberries, it becomes necessary that they be renewed every two or three years, as they will in that time lose their vitality and prove unproductive. With raspberries it is different. With some varieties they will send up new canes each year and all that is necessary is due cultivation and the removal of dead canes; with other varieties the old canes will continue for several years and only need judicious pruning, while still others will die down and are reproduced by allowing the tips of the canes to droop over and take root in the soil. Blackberries send up new canes from the parent root and the care lies in the removal of the old, dried-up and worthless canes. About the same may be said of gooseberries, which are a more uncertain crop than either of those mentioned. Cranberries are more difficult and require a wet soil and facilities that are not always found upon average farms, and yet where the conditions are favorable, it is a crop the fruit of which is very highly esteemed in cookery.

Skill in the management of any of these berries is acquired by practice, and will suggest itself to every intelligent cultivator, and is more valuable than any special rules that may be laid down, for the reason that different localities, different kinds of soil, different atmospheric conditions, require different treatment. In the mention of small fruits the cherry, the plum and the grape, in all their varieties, should be remembered to the extent of securing a good succession by the setting of the necessary trees. Currants, also, come in for a place in the domestic economy which should be provided for. When a surplus of this fruit is produced it always finds a ready market at remunerative prices, so that no fear need be experienced in the planting of waste from over-production, and it is better to have an excess than a deficiency. Farmers should always consider the comfort and necessities of their families.

WM. H. YEOMANS.
Columbia, Conn.

Dwarf Mountain Pine.

EDITOR KANSAS FARMER:—A dwarf species of pine, introduced for ornamental planting perhaps twelve or fifteen years ago from Montana. Some nurserymen style the tree *Pinus Montana*. The general term, however, is Dwarf Mountain pine. A twig cut from the tree looks very much like Scotch pine of a stunted growth, except the leaves are much darker. I have grown the tree for a number of years, finding it to be one of the very best evergreens for Kansas, in fact, it seems to stand

dry weather, hot winds, etc., better than any other tree. It is a different looking tree than any evergreen grown in this part of the country. It is a dwarf in every sense of the word; is low and very bushy; a tree six feet high will be eight feet broad, with limbs down even to the ground. By just a little clipping it makes a solid ball of green. By trimming off the lower limbs you can have a beautiful dwarf evergreen. As for toughness, I know of very few trees of any kind that will stand what this rugged little fellow will, both hot and cold, dry and wet—it seems to make no difference, but just keeps holding the fort and becoming more established year by year. I have trees eighteen inches high and three and one-half feet broad.

For home planting they are very fine, and after a person becomes acquainted with them, I know of nothing that will please the grower as much as this little dwarf from Montana. By planting trees two or three feet apart you can make the prettiest fence the eye ever saw in Kansas (not in more favored localities), and the fact that the tree never grows large, makes it all the more valuable for ornamental planting. If I was to have to choose one evergreen for my own planting I should choose the Dwarf Mountain pine for the above and many other reasons. A few others are good in Kansas, but not many—only two or three. In fact, there are but four trees that in my judgment ought to be planted. I will name them: Dwarf Mountain pine, Austrian pine, red cedar and white spruce.

I have in mind a man who made the plans for a cemetery here at Topeka. In looking over the list of evergreens, almost all of them were of sorts that would not grow here at all. I told the owner of the plans he would find it much easier to grow such trees from books than to grow them in Kansas, with hot sun and strong south wind. The architect took his selection from all the evergreens, selecting his tree from the description, regardless as to whether it would grow here or not. Another amusing feature, he had allowed for some of them to grow to be sixty and eighty feet high. To those who want trees, plant the sorts of the kind you know will grow, let the other fellow do all the experimenting. In the end you will have the trees and he will tell you such trees will not grow in Kansas, because he has tried such and such a kind and none of them would grow.

In the spring of 1891 I planted 168 Dwarf Mountain pines. To-day I have 167 of them growing, and in one year more I will have an evergreen fence that will be more beautiful than any fence in Topeka.

Topeka, Kas. GEO. W. TINCHER.

Points on Planting an Orchard.

EDITOR KANSAS FARMER:—Which way does Judge Fred Wellhouse run his tree rows? What advantage is claimed? I set my first orchard east and west, one rod apart, two rods north and south. The trees are crowding badly one way, but are fruiting satisfactorily. My next I planted one rod each way, zigzag, which leaves them two rods apart each way and about twenty-three feet apart on the angle, and gives me eighty trees to the acre, just Judge Wellhouse's number, if planted sixteen by thirty-two feet. I have been successful with twenty varieties and several varieties have proved miserable failures.

WM. WALKER.

Solomon City, Dickinson Co.

This inquiry was referred to Judge Wellhouse, who answers as follows:

"We plant sixteen feet north and south and thirty-two feet east and west. By planting close north and south the trees shade the bodies of each other and break the prevailing south winds. The thirty-two feet east and west lets the sunshine into the ground and gives us room to do our work between the rows, gather the fruit, etc."

A. L. Entsminger, of Silver Lake, is planting for H. C. Bowman, near Topeka, a commercial orchard of forty acres of apple trees, consisting of 800 Ben Davis, 300 Gano, 250 Jonathan,

THE best investment in real-estate is to keep buildings well painted. Paint protects the house and saves repairs. You sometimes want to sell—many a good house has remained unsold for want of paint. The rule should be though, "the best paint or none." That means

Strictly Pure White Lead

You cannot afford to use *cheap paints*. To be sure of getting Strictly Pure White Lead, look at the brand; any of these are safe:

"Southern," "Red Seal," "Collier."

FOR COLORS.—National Lead Co.'s Pure White Lead Tinting Colors.

These colors are sold in one-pound cans, each can being sufficient to tint 25 pounds of Strictly Pure White Lead the desired shade; they are in no sense ready-mixed paints, but a combination of perfectly pure colors in the handiest form to tint Strictly Pure White Lead. A good many thousand dollars have been saved property-owners by having our book on painting and color-card. Send us a postal card and get both free.

St. Louis Branch,
Clark Avenue and 12th Street, St. Louis.

NATIONAL LEAD CO.

200 Rawles' Genet, and 200 York Imperial, 1,750 trees in all. They will be planted thirty feet apart each way. About 200 more trees will be required to complete the forty acres and these will probably be Arkansas Mammoth Black Twig. In addition to this commercial orchard, Mr. Entsminger is planting for Mr. Bowman an acre of grapes and a family orchard of five acres of apple, pear, cherry and plum trees. The work is now in progress and will be completed by November 10.

Mr. Jacob B. Brown, of Grahamville, S. C., was troubled with chills and fever, and unable to procure relief, until he began to take Ayer's Pills. He is now enjoying excellent health and is a warm and sincere advocate of Ayer's Pills, for all complaints of stomach, liver or bowels.

Universal Dairy Supplies.

The enormous development of the dairy interests in the West has necessitated the establishment, at distributing points, of houses that deal exclusively in supplies demanded by creameries, cheese factories, and, in fact, by all farmers who make a pound of butter or cheese, or who sell their milk to be shipped.

In the East dairy supplies can be purchased in various cities and at points nearer each other than in the West, for the reason the demand for such supplies has existed many years, and farmers have become accustomed to the use of all of the improved machinery and appliances to the end that their products may be handled more expeditiously and economically, which facts have enabled them to resist outside competition; at the same time, a more uniform quality of their product has been assured, and in the end, whether they had five cows or one hundred, there was more net gain where the improved methods and machinery were used.

Within the past few years the dairy and creamery business has grown to such an extent in the Mississippi valley States that houses making a specialty of supplying cow-keepers, dairymen and creamerymen with the latest, best and most approved machinery and appliances requisite to the economical production of prime cream, butter and cheese, have been established in nearly all large cities.

Attention is called to an illustration on page 2 of the Eureka Steam Boiler and Feed Cooker, which is one of the best and most economical helps to save money that the farmer can possibly buy. It is manufactured and for sale by the Creamery Package Manufacturing Co., of Kansas City, Mo. This concern is one of the leading houses in supplying everything needed by the milkman, dairyman or creameryman in the United States, and it is believed to be one of the largest houses of the kind in the world. It is claimed that this concern has a decided advantage over competing houses, as we are assured that it is able to give buyers prices that others cannot meet, and at the same time it guarantees superiority in quality.

This house makes a specialty of the De Laval "Baby" Separators, the sterling quality of which is everywhere acknowledged, and it is asserted, and we believe proven, that the "Baby" is as valuable, proportionately, to the keeper of five cows (and will actually save their owner money) as it is to the owner of the largest herds.

We are in receipt of the 280-page catalogue of this company, which we have

carefully examined, with the result that it appears to cover all of the ground, and there is no doubt that the concern alluded to furnishes a catalogue of the largest amount of dairy supplies we have ever seen enumerated under one cover.

In addition, a monthly price list, giving name, description and prices of every article, appliance and machinery in stock, is issued, and applicants will be furnished with either the large illustrated catalogue or the monthly price list, or both of them, by promptly sending their address. If any article is wanted, whether the catalogue is at hand or not, it will be entirely safe to order the same from this company, as they may be fully depended upon for square treatment.

For catalogue or monthly price list address the Creamery Package Manufacturing Co., 1408-1410 West Eleventh street, Kansas City, Mo.

Patrons of the Vandalia and Pennsylvania Lines west of Pittsburgh will be glad to know that an arrangement has been made, taking effect November 1, by which portions of mileage tickets will be detached and accepted in payment of excess baggage charges. Commercial travelers and others will find that agents of the Pennsylvania and Vandalia Lines at all principal stations have been instructed regarding this concession, which will no doubt become immediately popular.

Six Thousand Square Miles of Wealth.

The vast fertile valleys of the two Indian reservations in northeastern Utah, soon to be open to settlers comprise about 3,500,000 acres of the finest agricultural and grazing lands. The direct line to Uintah and Uncompahgre reservations is by the Union Pacific system via Echo and Park City. E. L. LOMAX, G. P. & T. A., U. P. system, Omaha, Neb.

"Among the Ozarks,"

the Land of Big Red Apples, is an attractive and interesting book, handsomely illustrated with views of south Missouri scenery including the famous Olden fruit farm of 3,000 acres in Howell county. It pertains to fruit-raising in that great fruit belt of America, the southern slope of the Ozarks and will prove of great value, not only to fruit-growers, but to every farmer and home-seeker looking for a farm and a home. Mailed free. Address,

J. E. LOCKWOOD, Kansas City, Mo.

WHAT YOU
DON'T KNOW
ABOUT

California

is told in a beautifully illustrated book entitled "To California and Back." Ask G. T. Nicholson, G. P. A., Santa Fe Route, Topeka, Kas., for a copy. It is free.

Personally conducted weekly parties leave Chicago every Saturday evening, and Kansas City every Sunday noon, for Pacific Coast, via Santa Fe Route. Special agents and porters in attendance. Pullman tourist sleepers are used, furnished with all conveniences for comfortable traveling. Second-class tickets honored.

You have been planning that California trip for several years. Why not go now, and take advantage of cheap rates? Santa Fe Route is positively the only line with Pullman tourist and palace sleepers, Chicago and Kansas City to San Francisco and Los Angeles, daily without change.

ST. JACOBS OIL is the Perfect CURE for

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WITHOUT RELAPSE, COLLAPSE, MISHAPS or PERHAPS.

In the Dairy.

Conducted by A. E. JONES, of Oakland Dairy Farm. Address all communications Topeka, Kas.

Attend the Dairy Meeting.

Attend the dairy meeting at the State house, in Topeka, November 21, 22 and 23, 1894. Get your farmer friends to go along with you. While there you may get some new ideas about dairy work. If you have a nice ten-pound jar of butter, enter it for an award. There are \$565 in regular and special premiums offered on butter and cheese at this session. An expert judge will do the scoring and indicate where improvements are needed on dairy goods falling below the standard. Prof. Henry, of the Wisconsin Dairy school, has promised to be present and deliver an instructive lecture some time during the meeting. Your presence at this time will encourage the faithful who have stood by from the beginning, in 1888, and are still in the harness. It pays to know how your neighbor, who has made a success of a thing, manages the business. His experience on the subject that lies nearest him is worth dollars to others. The dairy cow will be heard from in Representative hall with an athletic voice of such dimensions as shall astonish the makers of oleo throughout the land, compelling them to admit that the meek-eyed cow is queen.

Dairying Pays.

A. E. Jones, one of the most practical farmers in Shawnee county, has made a success of dairying. His business has grown from one cow at the start to sixteen at present. He gets 27 1/2 cents for butter the year round and has close work to supply the demand. His cows are registered Jerseys and they make over 300 pounds of butter a year each. He writes to the Mail as follows:

My eight years experience in dairy work has led to the following conclusions, viz.:

1. Get rid of the scrub cow.
2. Good cows lead to better methods.
3. Without good feed dairying is a failure.
4. People will not pay 25 cents for 10-cent butter.
5. It requires brains and gumption to succeed in the dairy.
6. A careless person cannot make good butter.
7. Promptness and honesty always win.
8. The finishing touches are what pay.
9. Cows need shelter from storm and sun.
10. Clean hands invite clean methods.
11. A prosperous dairyman is always gentlemanly to his customers.
12. When serving customers always wear clean clothes.
13. Those that make bad butter are easily offended.
14. If you do not like the work, quit.
15. Good butter cannot be made if the surroundings are filthy.
16. Poor butter gives the dairyman a lean purse.
17. There is a growing demand for good butter at paying prices.
18. Badly made butter hurts the trade and gives the oleo men a better market.
19. Kansas needs a dairy school to educate the people in this work.
20. Keep pace with modern improvements.—Topeka Mail.

How Science Helps in Feeding Cows.

During the course of an address on "What Science has Done for Dairying," Dr. L. L. Van Slyke, of the Geneva Experiment Station, at the New York State fair, said: I desire very briefly, to point out what science has done for dairying, in helping the producer of milk to feed his animals with greater intelligence and economy. We have learned that three classes of foods are essential to the growth of animals. One class, called albuminoids or proteids, is used in the body to repair the wasted muscular and nervous tissues. The white of an egg, the casein of milk, the lean of meat,

the sticky portion of moistened wheat flour represents this class.

The next class consists of fats or oils which furnish material for fat formation in the body and also for heat to maintain the temperature of the body.

The third class is called carbohydrates and contains such substances as starch, sugar, etc., whose chief duty is to furnish heat for the body.

Science has further demonstrated that the most economical results can be secured by combining these three food constituents in certain proportions; and further, that, of two foods having much the same composition and costing the same price, one may be cheaper than the other from the fact the animal can utilize more of it. In other words, because it is more digestible.

Further, these different forms of food constituents can be purchased at greatly different prices. For example: I can furnish for myself albuminoids in the form of raw oysters for about 30 cents a pound; or I can secure the same amount of digestible albuminoids in cured cheese for 3 cents. The same principle holds true in feeding a cow. I can feed fat to cows in the form of milk fat worth 25 cents per pound, or in the form of oil contained in meal for 2 1/2 cents per pound. We can feed a cow for 30 cents a day and we can also feed the cow for 15 cents a day, and in both cases secure the same amount and value of product.

Further, some foods have much greater fertilizing value than others, and we must, in feeding, consider both the feeding and the fertilizing values.

Science teaches, then, that the matter of feeding animals is not a simple but a complicated subject; that we must supply the proper proportions of food constituents in the most digestible and economical form, if we would secure the best and most profitable results.

Dairy Notes.

To get the knowledge of plain, common sense methods, founded upon science and experience, beaten into the heads of the masses of cow handlers, is about as hard a task as driving a tallow candle into a railroad tie.

Blood will tell in dairy cattle, as well as in race horses. Phenomenal scrubs are the only ones that ever beat a thoroughbred, and if the latter is heated it will be found to be a degenerate son or daughter—one of the black sheep of the flock.

Do you not think, farmers, who have no creamery in your neighborhood, that it would be a good idea to get one, and then get a cow whose milk, sold to the creamery, will make fifteen pounds of 20-cent butter per week? That is better than selling wheat at 50 cents a bushel.

Has not the dairy industry of the United States a financial right to ask laws in its favor from law-makers? The sixteen and a half million cows and their products, representing four hundred millions annually, when combined, ought to have a pretty big voice for the ears of legislators.

Remember that the Kansas State dairy meeting is called for November 21, 22 and 23, at Topeka. Kansas dairymen should make a note of this and arrange their business in such a manner as to enable them to attend every session of these annual meetings. An interchange of views on dairy matters is valuable to every farmer in the State who makes a pound of butter or cheese, or feeds dairy cattle. Much interest will be manifested in the coming meeting as the subject of oleo legislation is uppermost for discussion, and a very important paper will be offered in this connection. A full expression of views may be expected on this important subject.

Homes for the Homeless.

The opening of two Indian reservations in northeastern Utah to settlers opens up over three and one-half million acres of fine agricultural and stock-raising land for home-seekers.

The Uintah and Uncompahgre reservations are reached by the only direct route, the Union Pacific system, via Echo and Park City. E. L. LOMAX, G. P. & T. A., U. P. system, Omaha, Neb.

The Poultry Yard

How to Preserve Eggs.

Whatever plan is followed, it is absolutely essential to success that the eggs to be preserved must be quite fresh to start with, and they must be kept in a dry cool place until treated. Damp will mould them, heat will dry them, and anything which will keep the shells absolutely air-tight will preserve them a long time. We quote the following from the *Fanciers' Monthly*:

"To make a success of the preserving of eggs as a business, they should never be offered as 'new laid,' and every egg before being sold should be seen to be perfectly clear.

"1. Take five quarts of rock salt, five pounds of unslaked lime and a quarter of a pound of cream of tartar; dissolve in four pails of water, which makes sufficient pickle for a barrel of eggs. Eggs are always to be kept under pickle.

"2. One bushel of lime, eight quarts of salt and 250 quarts of water. Slake the lime with a portion of the water, then add the balance of the water and the salt. Stir well three or four times at intervals and let it stand until well settled and cold. Either dip or draw off the clear pickle into the casks or vat in which it is intended to preserve the eggs. When the cask or vat is filled to a depth of eighteen inches begin to put in the eggs, and when they lie about one foot deep spread over them some pickle that is a little milky in appearance, made so by stirring up some of the very light lime particles that settled last, and continue doing this as each foot of eggs is added.

"3. Place a small quantity of salt butter in the palm of the left hand and turn the egg round in it so that every pore of the shell is closed; then dry a sufficient quantity of bran in an oven (be sure you have the bran well dried or it will rust); then pack them with the small ends down, a layer of bran and another of eggs until your box is full; then place in a cool dry place.

"4. Put the eggs into a large pail and pour boiling hot water over them, then put a cover over them and count sixty very slowly. Take them out, wipe dry with a thin towel, and pack with little end down in buckwheat hulls, oats or bran.

"5. 'Some time ago,' writes a correspondent of the London *Live Stock Journal*, 'I found in the *Journal* a very simple plan of storing eggs in dry ashes, and ever since I have adopted that system with very satisfactory results. Though rather fastidious about eggs, I have frequently eaten and enjoyed eggs that had been in the ash-box for more than four months. But this week I have tested the system more severely. A box of ashes that had been used for storing eggs was laid aside as empty until two days ago, when a solitary egg was found in it that had been laid on May 5, 1892. Though more than a year old, the egg was perfectly good and formed part of an excellent pudding the same evening. The only necessary precautions seem to be these: To see that the ashes are quite dry, and to see that the eggs do not touch one another.'

"6. Dissolve salicylic acid at the rate of a tablespoonful to a gallon of boiling water. It is not necessary to boil all the water; a larger amount of the acid can be dissolved in a gallon of water and then added to the cold water, but the whole mixture should be at the rate of a tablespoonful of acid to a gal-

lon. This solution must in no case come in contact with any metal. The eggs are kept immersed in the liquid.

"7. Place the eggs in a tight keg box or barrel, the size according to the quantity of eggs, which should in no case fill it more than two-thirds. On the top of the eggs lay a board, and on this place an iron or earthen vessel in which to burn sulphur. A pound of sulphur is sufficient for a barrel filled two-thirds with eggs. Set the sulphur on fire and cover tightly to confine the fumes, and let it stand for an hour. The sulphur fumes being heavier than the air will sink to the bottom and envelop every egg in the lot. In another box, keg or barrel, place about an equal quantity of oats, or rather more, and treat in the same way. Then pack the eggs in the oats, fill the receptacle full and head or nail up, and turn upside down every day to prevent the yolks from adhering to the shells."

The greatest expense incurred when making a business of keeping large numbers of poultry is the labor. It is an item of cost that never enters into the account with a small flock, but when hundreds of hens are kept the cost of the labor becomes a very important matter. The larger the number of hens the smaller the cost of the labor proportionately, as one man can attend to several hundred hens as easily as he can a hundred, but there is a limit to human capacity, however, and it will not do to have more than one can keep properly. The men who operate incubators and brooders do not allow more than 1,500 young chicks to each person, and 600 hens will give a man all that he can do if he performs his work properly.

\$100 Reward \$100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is catarrh. Hall's Catarrh Cure is the only positive cure known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer one hundred dollars for any case that it fails to cure. Send for list of testimonials. Address, F. J. CHENEY & CO., Toledo, O. Sold by Druggists, 75 cents.

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GOSSIP ABOUT STOCK.

L. K. Haseltine, Dorchester, Mo., reports that he has several very fine calves by his famous Red Polled show bull, Wild Roy 1105. His record as a sire and prize-winner has never been excelled by any Red Polled bull ever imported.

On Thursday, November 23, Jno. D. Ziller, of Hiawatha, will hold his sixth annual sale, consisting of eighty head of thoroughbred Poland-China swine, including many of the get of Gold Coin 7472, Master Wilkes, Royal Short Stop, etc. This sale affords a splendid chance to secure a good lot of pure-bred swine at a bargain.

The extensive cattle feeders, the Small Bros., of Topeka, say in reference to the merits of oil meal feeding as follows: "We fed several cars of cottonseed meal in connection with corn and were disappointed with the result, so much so that we would not use it again. Linseed oil meal has proved to be a satisfactory feed with us."

The State dairy convention will be held at Topeka, on November 21, and Holstein-Friesian breeders and other dairymen who desire some first-class stock should come one day earlier so as to attend the grand closing-out public sale of registered Holstein-Friesian cattle, by H. W. Cheney, of North Topeka. This herd is one of the very best in the West, and this sale is the best opportunity of years to secure grandly-bred dairy stock. Notice advertisement elsewhere.

The Chester White swine breeder, A. E. Staley, Ottawa, Kas., writes: "My herd is in fine condition and I can furnish some fine boars, six months old, and a lot of gilts, also a few yearling sows that are hard to beat. My crop of fall pigs are as good a lot as you would wish to see and are growing finely. I lost my Chester White boar, Dorsey's Choice, a few days ago. He died from the effects of a fight with old Moorish Pride. I turned them out on the rye and let them fight a little too long."

Our field man reports that the offerings of Hereford cattle that will go into the Makin Bros.' clearance sale next week are coming on nicely and that they are all good ones. Since his former report several calves have been dropped that were sired by Anxiety Boy 47708. Pearl Rufus 42987, a heifer; Rosalind 42988, a bull; Princess 2d 81222, a bull. The two bull calves are fully up to the expectations of their owners. Considering the excellent breeding of their dams, breeders will do well to attend the sale next Thursday and make selections from the twenty-six head of offerings other than the young calves.

Alvin H. Sanders, Secretary, Chicago, writes the FARMER as follows: "I am directed by Col. T. S. Moberly, Chairman of committee of seven appointed at the recent Springfield meeting of stockmen to prepare a revised classification for live stock to be submitted to the various State fairs, to advise you that there will be a general meeting of the exhibitors and all other interested parties, held at the Grand Pacific hotel, Chicago, on the evening of Monday, November 26, at 8 o'clock, at which the stockmen of the entire country are invited to be present and submit any suggestions they may have to make in regard to a proper revision of the premium lists."

The Chicago horse market shows continued light receipts, with a few new buyers added to the list, clearly demonstrating that the law of supply and demand is the principal governing factor, and if the periodical gluts could be regulated a fairly strong and active market would continue indefinitely. Draft horses, smooth chunks and rugged workers generally have held first place, with a limited demand for drivers, and the latter, when smooth and possessed of action are selling well. Southern stock are, for the present, in lighter demand than at any time this season owing to heavy stock on hand in the chief distributing centers of the South, together with the low prices of cotton. Thin and common horses are doing no good, no matter how cheaply bought, and are selling lower than ever.

Dr. P. A. Pearson, Kinsley, Kas., writes as follows: "I had a very successful trip to the State fair, winning ten ribbons on my herd, and had splendid sales. After returning I find that I have two eight-months-old gilts yet for sale. They and the litter of which they are part won seven ribbons. They are fine ones. I also have one boar out of same litter that won second premium at State fair, showing against those that were four to five months older. I also have two that I showed under 6 months that won third, not having them up in good condition. They are in active breeding condition and will do credit to any herd that they may be chosen for. Also one yearling boar. He is a growthy individual. These boars are all growthy and will make strong service animals. The eight-months-old boar is one of the best I ever saw for his age—blocky, broad on back, good hams, ears and head; will do credit to any herd that he may be selected for, having won second premium at State fair, and his sire, Dandy

Jim Jr., and his sire both have won first prizes at the Kansas State fairs in 1890 and 1891. While at the State fair I sold the great Dandy Jim Jr. to V. B. Howey, at Topeka, Kas.... Wheat in this part is looking nicely. Some not up yet. Farmers and stockmen are just learning how valuable wheat is as a stock feed. I have fed wheat almost altogether for the last two years. I am quite sure that farmers can realize from 75 cents to \$1 per bushel for their wheat by feeding it to hogs."

W. S. Tough & Son, managers of the Kansas City Stock Yards Co.'s horse and mule department, report the horse market during the past week as being unusually active, the largest run of horses with a marked improvement in quality. Prices, however, were no better. The majority of the buyers were from the South, the Eastern trade not having opened up as yet. As usual the greatest demand was for nice drivers and shapely Southern mares. There were some buyers on the market for the better grades of streeters from the new farming districts of Texas. Rough, thin, and badly blemished horses were a decided drug and it is almost impossible to find people who will bid on them at all. It is rather difficult to predict the market for the coming week, as elections will have more or less influence in keeping both buyers and shippers at home. However, there are several buyers on the market with loads partially filled, waiting for stock to come in and anything with flesh and quality will bring a fair price. Mule market steady. Not very much trading in anything but the tops of any class. No change in quotations.

Meisenheimer's Swine Sale.

The clearance sale of pure-bred registered Poland-Chinas, as previously announced by Martin Meisenheimer, of Hiawatha, Brown county, Kansas, took place last Wednesday on his farm, near Hiawatha. It was fairly well attended, and Col. Eli Zimmerman, the successful live stock auctioneer, did the work on the block.

While the prices realized were not quite as high as they should have been, considering the excellent character and sales ring finish of the offerings, as well as their

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Tecumseh-Free Trade blood, the general average of the forty-seven head, averaging about six months of age, was \$15.85. Mr. Meisenheimer realizes that it takes time to build up a reputation as a breeder by send-out meritorious individuals, and will endeavor to have something still more worthy in his next year's offerings. The following are the catalogued numbers, names of buyers and price realized:

BOARS.	
1. Wm. Evans, Hiawatha, Kas.	\$26 00
2. David Evans, Hiawatha	16 00
3. W. Wood, Severance	37 00
11. W. M. Webb, Severance	25 50
14. Jas. A. Brimm, Hamlin	13 50
23. J. F. Babb, Centralia	27 00
24. G. F. Berkley, Hamlin	21 50
28. J. F. Cashman, Comet	25 00
32. L. Argo, Hamlin	16 00
38. F. Moser, Hiawatha	11 00
42. Chas. Bedher, Hiawatha	12 00
48. G. A. Wardell, Robinson	21 00
49. J. F. Babb, Centralia	26 00
SOWS.	
8. J. Ball, Robinson	17 50
10. J. Ball, Robinson	17 50
15. C. D. Swain, White Cloud	18 00
16. J. Winterscheidt, Horton	17 50
17 and 00. Schmidt Bros., Marysville	22 00
23. Mose Walters, Hiawatha	20 00
25. G. A. Wardell, Robinson	10 50
26. B. G. Wise, Reserve	13 00
27. Schmitt Bros., Marysville	25 00
31. B. G. Wise, Reserve	12 00
36. Dan Hamler, Hiawatha	16 50
37. W. T. Rayland, Highland Station	13 00
45. C. D. Swain, White Cloud	16 00
46. J. F. Ward, Highland	14 00
47. J. Winterscheidt, Horton	25 50
48. Dan Hamler, Hiawatha	23 00
54. J. F. Babb, Centralia	18 00
55. J. F. Babb, Centralia	21 00
O. K. J. E. Read, Robinson	21 00
Three herds, pigs not akin, went as follows:	
Lot 1, of four, sold to J. E. Read, Robinson	34 00
Lot 2, of five, J. W. Hunter, Dentonville	26 50
Lot 3, of five, M. S. Watson, Reserve	42 50
Thirteen head boars brought	277 50
Average	21 35
Twenty head sows	341 00
Average	17 05
Thirty-three head sold singly	618 50
Average	18 74
Three young herds	103 00
Total amount realized	721 50
Average, forty-seven head	15 35

For the Swine Breeder.

Such was the general comment on the sales ring finish of the offerings at the late clearance sale of Poland-Chinas held on Thursday, October 25, at Marshall, Mo., by Mr. C. G. Sparks, of Mt. Leonard, Saline county, that a brief review of the course pursued in fitting the herd up may be of some interest to the readers of the KANSAS FARMER. Mr. Sparks informed us that the selection of the breeding stock had something to do with it, but that the main thing was ration and a judicious feeding of it. The entire herd had the run of a small blue grass pasture up to July 31, and were fed a little corn night and morning, the youngsters eating with their dams just what they could get while the older ones were eating. On July 31, began and continued feeding whole soaked oats for three weeks, nothing else. Then thirty-five bushels of oats and ten bushels of corn were mixed and ground together as fine as the burrs would grind it, to which was added 2,500 pounds of ship-stuff. This mixture was fed twice a day in the form of a thick swill, mixed always



A Bright Lad,

Ten years of age, but who declines to give his name to the public, makes this authorized, confidential statement to us:

"When I was one year old, my mamma died of consumption. The doctor said that I, too, would soon die, and all our neighbors thought that even if I did not die, I would never be able to walk, because I was so weak and puny. A gathering formed and broke under my arm. I hurt my finger and it gathered and threw out pieces of bone. If I hurt myself so as to break the skin, it was sure to become a running sore. I had to take lots of medicine, but nothing has done me so much good as Ayer's Sarsaparilla. It has made me well and strong."—T. D. M., Noreatur, Kans.

AYER'S Sarsaparilla
Prepared by Dr. J. C. Ayer & Co., Lowell, Mass.
Cures others, will cure you

fresh. At the conclusion of this course twenty-five bushels of wheat and twenty-five of oats were ground together, to which 1,200 pounds of shipstuff was added, and fed up to day of sale. In order to harden up and make more solid a little corn in the ear was fed at night in connection with the last mentioned ration. Of mornings only slop was fed. Plenty of ashes and salt and pure well water were provided, and the herd had access to them at will. Mr. Sparks informed us that his experience and observation taught him that, no matter how much swill or slop ration swine were provided with, they would enjoy a drink occasionally of pure, cool water. The reader, especially if he be a breeder, will see that it was mainly a bone and muscle ration that was used, connected with practical common sense and judgment, coupled with attention to the herd in promoting its healthfulness and growth. W. P. B.

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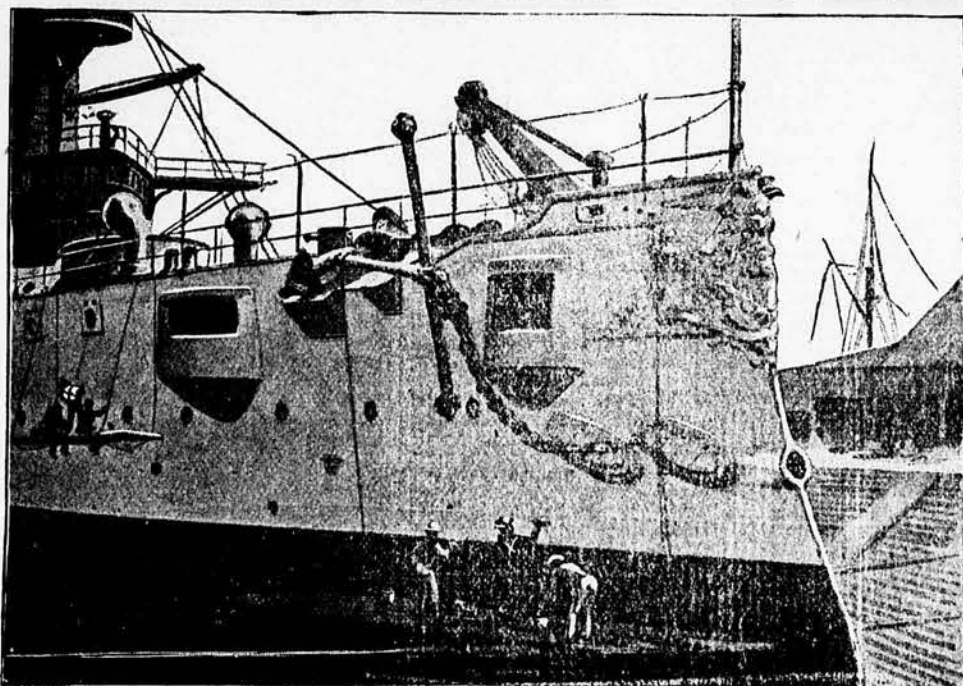
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The Veterinarian.

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the KANSAS FARMER.

LOSING MANE AND TAIL.—I have a horse that is losing his mane and tail very rapidly. He does not try to rub himself, but the hair seems to become loose and drop out. What can I do to stop it? M. M. W. Eskridge, Kas.

Answer.—Saturate the skin about the roots of the hair once a day for a week with a strong decoction of sage. When it has stopped falling out mix enough sulphur with castor oil to make a thin paste and rub in a little about the roots of the hair twice a week.

SORE EARS IN PIGS.—I have two or three pigs, 2 months old, that have been holding their heads on one side; there is a very offensive discharge from the ear. Some of my fat hogs acted the same way, and I found screw worms in the sores. These hogs have been coughing more or less for five or six weeks, but do not lose their appetite. Arkansas City, Kas.

Answer.—Syringe the ears out once or twice a day with warm water and inject a little of the following: Sulphate of zinc, 4 drachms; carbolic acid, 2 drachms; water, 1 pint; mix. Inject a little chloroform where the screw worms are.

The Texas State Fair.

The Texas State fair closed a two weeks' successful exhibit at Dallas, Texas, last week. It was unquestionably the most successful State fair and exposition held in the country this year and eclipsed by far all former exhibitions.

In the live stock rings, the swine and dairy cattle were exceptionally good, both of Jerseys and Holstein-Friesians. The weak feature of the live stock was the beef breeds. Creditable exhibits of Herefords only were shown.

One of the novel "Donny Brook" attractions consisted of the great fakirs of the Midway Plaisance type, which proved a drawing attraction but in the main were tough and vile and should not have been tolerated by the fair association.

The Texas Farm and Ranch headquarters was the Mecca and "house of refuge" for all distinguished and wandering agriculturists who came to the fair. Col. Frank P. Holland, the publisher of this great farm journal, whose word is the open sesame to everything agricultural in Texas, appears to have everybody and everything pertaining to agricultural matters subsidized or hypnotized, and yet he is the most genial and affable gentleman in the State.

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THE LAWRENCE-WILLIAMS CO., Cleveland O.

MARKET REPORTS.

Kansas City Live Stock. KANSAS CITY, Nov. 5.—Cattle—Receipts since Saturday, 6,963; calves, 258; shipped Saturday, 2,837; calves, 576. The market for good steers and cows was strong, others, with feeders, bulls and calves, steady; good Texas steers 10c higher; cows strong; common cows weak. The following are representative sales: DRESSED BEEF AND EXPORT STEERS.

Table with columns for various live stock categories and prices. Includes sections for Cows and Heifers, Western Cows, Texas and Indian Steers, and Texas Cows.

Hogs—Receipts since Saturday, 3,125; shipped Saturday, 1,655. The market was active and strong. The top was \$4.57 1/2 and bulk \$4.40 @ 4.50, against \$4.00 for top and \$4.30 @ 4.50 for bulk Saturday. The following are representative sales:

Table with columns for various live stock categories and prices. Includes sections for Sheep and Horses.

Chicago Live Stock. CHICAGO, Nov. 5.—Hogs—Receipts, 35,000; official Saturday, 18,401; shipments Saturday, 5,390; left over, about 3,000; quality not so good, market active, best grades 5c higher, common lots steady. Sales ranged at \$4.15 @ 4.65 for light; \$4.15 @ 4.40 for rough packing; \$4.25 @ 4.75 for mixed; \$4.45 @ 4.85 for heavy packing and shipping lots; pigs, \$2.40 @ 4.45.

St. Louis Live Stock. ST. LOUIS, Nov. 5.—Cattle—Receipts, 3,300; market active and strong; fair to good native steers, \$3.75 @ 3.25; stockers and feeders, \$3.10 @ 3.50; good Texas steers, \$3.10 @ 3.30; Texas cows, \$1.70 @ 2.40. Hogs—Receipts, 3,500; market brisk and shade higher; heavy, \$4.50 @ 4.70; mixed, \$4.10 @ 4.50; light, \$4.30 @ 4.50. Sheep—Receipts, 1,000; market firm.

Kansas City Grain. KANSAS CITY, Nov. 5.—There were only a few samples of wheat on sale to-day. Several buyers were after them, but they were unwilling to raise bids to get them. Prices throughout were about the same as Saturday.

Receipts of wheat to-day, 45 cars; a year ago, 261 cars. Car lots by sample on track at Kansas City at the close sold as follows: No. 2 hard, 48c; No. 3 hard, 46 @ 47c; No. 4 hard, 43 @ 45c; rejected, 43c; No. 2 red, 46 1/2c; No. 3 red, 45 @ 45 1/2c; No. 4 red, 44 @ 44 1/2c; rejected, 42 @ 43c. Offerings of corn were light. The trade was slow at about Saturday's prices. Most of the receipts had been sold to arrive and consequently did not appear on the floor. Receipts of corn to-day, 69 cars; a year ago, 117 cars. Sales by sample, on track Kansas City: No. 2 mixed corn, 2 cars 43 1/2c, 33 cars 43 1/2c; No. 3 mixed, nominally, 1/2c less than No. 2; No. 4 mixed, nominally, 42c; No. 2 white, 1 car 43 1/2c, 4 cars 43 1/2c; No. 3 white, nominally, 1/2c under No. 2 white. There was not much demand for oats, though they were firmly held, and not many were offered. Receipts of oats to-day, 10 cars; a year ago, 23 cars. Sales by sample, on track Kansas City: No. 2 mixed oats, nominally, 29 @ 30c; No. 3 mixed, nominally, 28 @ 28 1/2c; No. 4, nominally, 26 @ 27c; No. 2 white oats, 1 car 31 1/2c, 1 car 32c; No. 3 white, nominally, 30 @ 31c. Hay—Receipts, 32 cars; market firm. Timothy, choice, \$8.50 @ 9.00; No. 1, \$7.50 @ 8.00; low grade, \$5.00 @ 7.00; fancy prairie, \$8.00 @ 8.50; choice, \$7.00 @ 7.50; No. 1, \$3.00 @ 3.50; No. 2, \$3.00 @ 3.50; packing hay, \$2.50 @ 3.50.

Chicago Grain and Provisions. Nov. 5. Opened High'st Low'st Closing. Wh't—Nov.... 53 1/4 53 1/4 53 1/4 53 1/4 Dec.... 53 1/4 53 1/4 53 1/4 53 1/4 May.... 53 1/4 53 1/4 53 1/4 53 1/4 Corn—Nov.... 52 52 52 52 Dec.... 50 50 50 50 May.... 51 51 51 51 Oats—Nov.... 28 1/2 28 1/2 28 1/2 28 1/2 Dec.... 29 29 29 29 May.... 32 1/2 32 1/2 32 1/2 32 1/2 Pork—Nov.... 12 05 12 05 12 05 12 05 Jan.... 11 82 11 82 11 82 11 82 May.... 12 05 12 05 12 05 12 05 Lard—Nov.... 6 90 6 90 6 90 6 90 Jan.... 6 75 6 75 6 75 6 75 May.... 6 00 6 00 6 00 6 00 Ribs—Nov.... 5 90 5 90 5 90 5 90 Jan.... 5 00 5 00 5 00 5 00 May.... 6 07 1/2 6 07 1/2 6 07 1/2 6 20

Feeders, Attention!

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We hope you will, and to help you do it we offer a friendly word of warning. Those who know, say wheat fed to farm animals acts as an astringent, and causes constipation; therefore something else must be combined with the wheat to overcome this difficulty. You cannot put on flesh and fat unless the digestive organs are in a healthy condition, so that the food can be easily and properly assimilated. This can be secured by feeding an article that is not only a natural food but also a regulator of the system. If you will feed OLD PROCESS GROUND LINSEED CAKE (OIL MEAL) you will find that your animals will eat more wheat, grow faster, take on flesh and fat faster; keep in good health, and put money in your pocket. Hog feeders particularly should give heed to these suggestions.

TOPEKA LINSEED OIL WORKS, Topeka, Kansas.

Advertisement for Champion Steam, Horse & Hand Power machinery. Includes images of various machines and text describing their features like 'Perpetual & Large Bale', 'All Steel or Wood Frame Steel Lined', and 'Reversible Lever'.

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Advertisement for Winchester Repeating Arms Co. Includes an image of a repeating rifle and text: 'Everything that is NEWEST and BEST in REPEATING RIFLES, REPEATING SHOT-GUNS, SINGLE-SHOT RIFLES, ALL KINDS OF AMMUNITION, ARE MADE BY THE Winchester Repeating Arms Co. OUR MODEL 1893 SHOT-GUN'.

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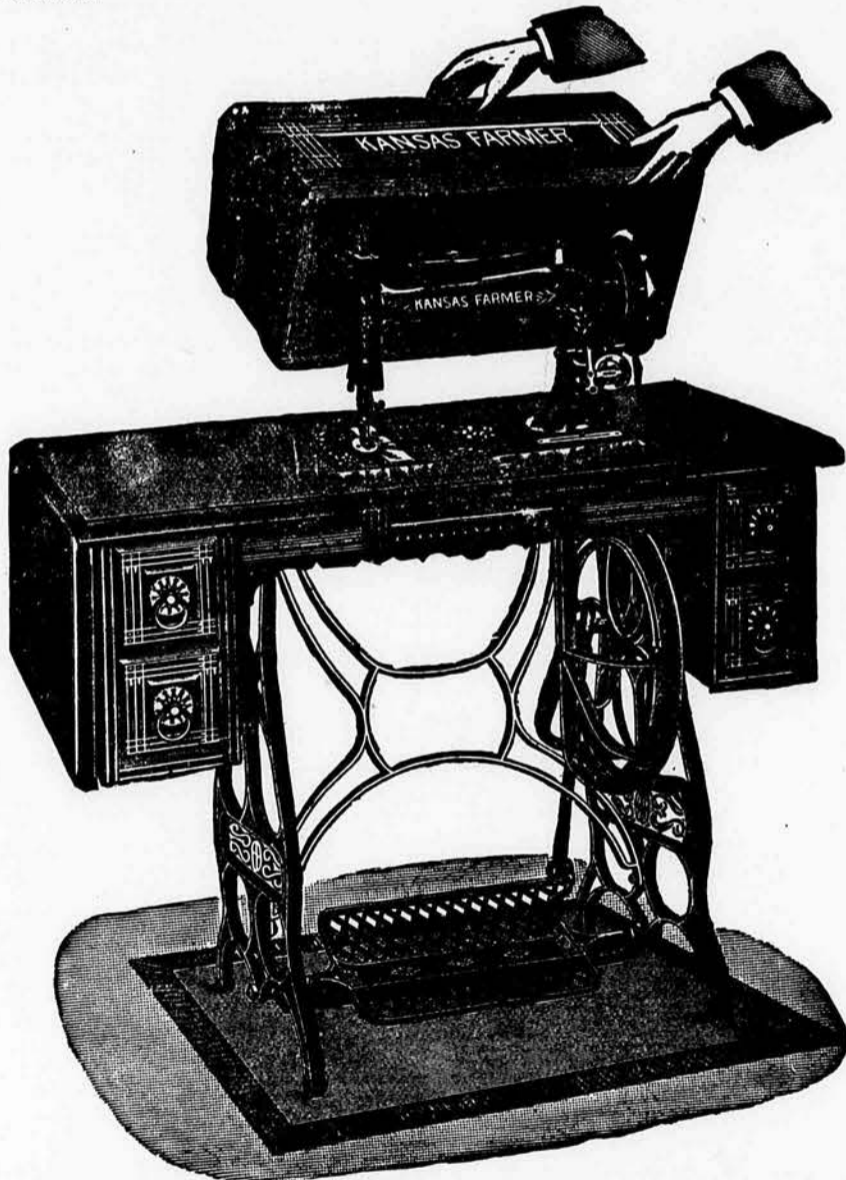
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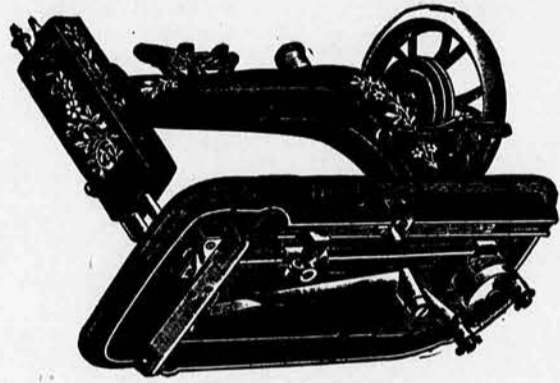
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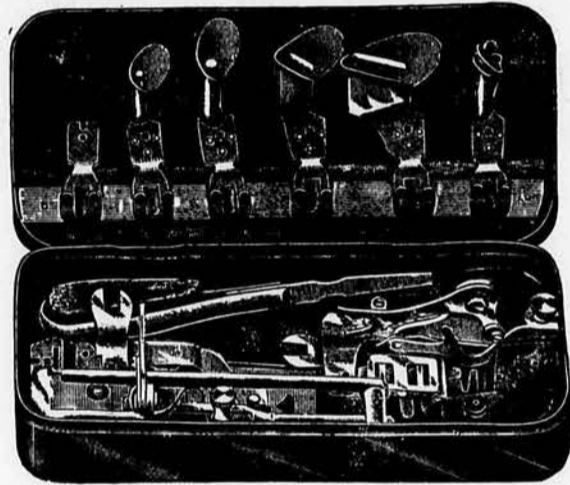


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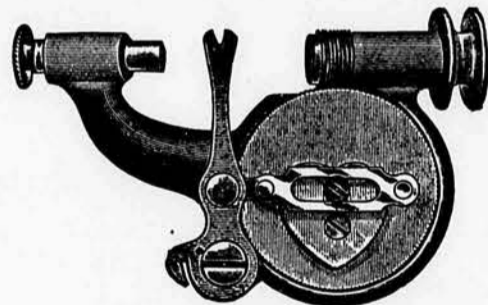


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