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Bring in your horses, or write us what you want or have for sale.

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CENTRAL KANSAS HERD OF THOROUGHBRED Poland-China hogs. C. S. Snodgrass, Galt, Rice county, Kansas, breeds the best. Stock for sale now. Come or write.

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D. TROTT, ABILENE, KAS., headquarters for famous Duroc-Jerseys. Mated to produce the best in all particulars. Choice breeders cheap. Write.

POLAND-CHINA SWINE and LIGHT BRAHMAS. Barred Plymouth Rocks, Dark Brahmas, Silver L Wyandottes, Buff Cochins, Buff Leghorns. Eggs, \$1 per setting. A. M. RICHARDSON, Altoona, Kas.

S. F. GLASS, Marion, Kas., breeder of thoroughbred Jersey cattle, Poland-China and Large English Berkshire hogs, M. B. turkeys, B. P. Rock and S. C. White Leghorn chickens, peacocks, Pekin ducks and Italian bees.

KANSAS HERD OF POLAND-CHINA SWINE.—Headed by a Black U. S. boar by a Tecumseh U. S. sow. Twenty sows bred to him for March farrow. Also eight May and June boars for sale, and one Tecumseh show pig. I have thirty-eight Kiever's Model pigs that show fine markings. Address F. P. Maguire, Haven, Kas.

POULTRY.

BLACK LANGSHANS EXCLUSIVELY
EGGS \$1.50 for 13; \$2 for 26. A few fine cockerels to sell. J. C. WITHAM, Cherryvale, Kas.

SILVER SPANGLED HAMBURGS
Eggs, \$1.50 per fifteen.
C. R. CLEMMONS, WALDO, KAS.

B. P. ROCKS, W. WYANDOTTES and R. C. BROWN Leghorns. Eggs from high-scoring yards, \$1.50 per 13; \$2 per 26. P. C. BOWEN & SON, Proprietors, Cherryvale, Kas.

PARTRIDGE COCHINS.—I took all premiums on Partridge Cochins at Hutchinson show. Hens score 90 to 94. Headed by Mitchell cockerels, 90%, 91% and 92. Eggs \$1 per 15. J. W. Cook, Hutchinson Kas.

EGGS—Seventy-five cents per 13—White and Brown U Leghorns, Black Minorcas, Langshans, Silver Hamburgs, Partridge Cochins, Peer's strain B. P. Rock—pen 1, \$1.25; pen 2, 75 cents per 13. Address ZACHARY TAYLOR, Marion, Kas.

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P. Cochins, Lt. Brahmas, Barred Rocks, White Rocks, Silver Wyandottes, White Wyandottes, Black Javas, S. C. Brown Leghorns, White Leghorns, Buff Leghorns, Silver Spangled Hamburgs, White Guineas, Pearl Guineas and Pekin Ducks. Eggs, \$1 per 13; \$5 per 100. Guineas and Ducks, \$2 per 15.
A. H. DUFF, Larned, Kas.

POULTRY.

B. P. Rocks and S. C. B. Leghorns.

My stock has been tested in the strongest competition both west and east. Stock and eggs for sale. Write for descriptive circulars.
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Pure-breds. Finest in Kansas. High-scoring birds for sale. Address H. T. Forbes, 703 Polk St., Topeka, Kas.

YOUR LAST CHANCE!

To get at less than one-third value some of the best B. P. Rocks in the West—\$10 will buy yard of eleven fine females and one fine cockerel. Write quick, as this ad. will not appear again.
HENRY E. PEERS, Marion, Kas.

White Wyandottes

EXCLUSIVELY.

EGGS, \$1.00 PER 15.
Also, free with each setting, a recipe for making a cheap Lice Killer Paint. Send for circular.
P. O. Box 60, White 'Dotte Poultry Farm, Mrs. V. Odell, Prop'r., Wetmore, Kas.

ROCKS WHITE and BLUE BARRED

Empire, Lash and Conger Strains.
Eight years experience in breeding Rocks exclusively. Five pens—three Barred, two White; all high-scoring birds. They are mated to produce prize-winners. Males score from 91% to 94. by Hewes; females from 89 to 95%. Eggs, 13 for \$1; 30 for \$2; 50 for \$3; 100 for \$5. Write for descriptive circular. Printed recipe for making and using Liquid Lice Killer, 25c. Address:
T. E. LEFTWICH, Larned, Kas.

PURE-BRED FARM POULTRY

AT FARMERS' PRICES. Barred Plymouth Rocks, White Plymouth Rocks, Partridge Cochins, Light Brahmas, Silver Wyandottes, Black Javas, S. C. Brown Leghorns White Leghorns, Buff Leghorns, Silver-Spangled Hamburgs, White Guineas, Pearl Guineas and Buff Turkeys. Single birds, pairs, trios and breeding pens. Our stock is from the leading breeders and prize-takers of the country. Birds from \$1 up. Eggs \$1 per 13; \$5 per 100. Recipe for "Liquid Lice Killer" free with each order. (Enclose stamp.)
A. H. DUFF, Larned, Kas.

SWINE.

BOURBON COUNTY HERD BERKSHIRES.

J. S. MAGERS, Proprietor, Arcadia, Kas. Correspondence invited. Satisfaction guaranteed.

M. H. ALBERTY, Breeder of Registered CHEROKEE, CAS. DUROC-JERSEY SWINE. Baby Pig Teeth Clippers, 35 cents by mail.

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. Stonebraker, Panola, Ill.

Wamego Herd Imp. Chester Whites and Poland-Chinas.

Mated for best results. Also Barred Plymouth Rock chickens and eggs for sale. Correspondence or inspection invited. Mention FARMER.
C. J. HUGGINS, Proprietor, Wamego, Kas.

SELECT HERD OF BERKSHIRES

For ten years winners at leading fairs in competition with the best herds in the world. Visitors say: "Your hogs have such fine heads, good backs and hams, strong bone, and are so large and smooth." If you want a boar or pair of pigs, write. I ship from Topeka. G. W. Berry, Berryton, Shawnee Co., Kas.

T. A. HUBBARD,
Rome, Kansas,
Breeder of
POLAND-CHINAS and
LARGE ENGLISH
BERKSHIRES. Two hundred head. All ages.
25 boars and 45 sows ready for buyers.

Mound Farm Herd of Poland-Chinas.

100 head. Foundation stock, Tecumseh. Boars in service, Tecumseh Joe 1344 S., Chief 13840 S., Butler Wilkes 17764 S., U. S. Tecumseh 17850 S. 15 fall gilts, 30 spring pigs, 30 summer pigs. Inspection and correspondence invited.
H. E. Bacheider, Fredonia, Wilson Co., Kas.

Standard Herd of Poland-Chinas

A choice lot of gilts sired by Ideal U. S. and bred to Tecumseh Chief. Also some good Tecumseh Chief gilts bred to Look Over Me (he by old Look Me Over) and some good fall pigs, both sexes. Write and get my prices or come and see.
WM. MAGUIRE, Haven, Kas.

SWINE.

D. L. BUTTON, North Topeka, Kas., breeder of Improved Chester Whites. Stock for sale. Farm 2 miles northwest of Reform School.

DIVERDALE HERD of Chester White swine and Light Brahma poultry. J. T. LAWTON, BURTON, KAS., proprietor. All stock guaranteed. I can also ship from Topeka, my former place.

SIXTEEN TO ONE HERD

REGISTERED POLAND-CHINA SWINE.
Herd boars, Gold Standard Wilkes by Guy Wilkes 2d 17777 S. and Ideal Quality by Darkness Quality 2d 14301 S. Brood sows, Tecumseh, Black U. S. and Wilkes. Thirty spring pigs, both sexes, ready to go. Farm two miles north of Welda.
J. M. COLLINS, Welda, Anderson Co., Kas.

BLUE RIBBON HERD
PURE POLAND-CHINA SWINE
and Barred Plymouth Rock chickens. Tecumseh Short Stop 14750 at head of herd, assisted by Hadley Jr.'s Equal 15119 and King Tecumseh 16307. One hundred choice pigs for sale. Farm located three miles southwest of city. Calls or correspondence invited.
R. H. WHEELER, Lawrence, Kas.

60=Poland-China Fall Pigs=60

Both boars and sows, for sale reasonable. Sired by the noted Nox All Wilkes, Highland Chief by Chief Tecumseh 2d, and Look at Me by Look Me Over. Three fine young sows safe in pig for sale.
B. P. ROCK Eggs from high-scoring birds, \$1.25 for fifteen; \$8 per hundred.
DIETRICH & SPAULDING, Richmond, Kas.

Nation's Poland-Chinas.

Fifty boars and gilts for this season's trade. My herd boars consist of Darkness Quality 14361, Princeton Chief 14543, Col. Hidestretcher 37247 and Standard Wilkes. My sows are splendid individuals and of the right breeding. Personal inspection and correspondence invited.
LAWRENCE NATION, Hutchinson, Kas.

BLUE MOUND HERD BERKSHIRE SWINE.

Herd boars, Victor Hugo 41799 (sire imp.), Barkis 30040 (weight 800 lbs.), Prince Jr. 17th, from World's Fair winner. Choice pigs from fine strains. Also bred Shropshire sheep, M. B. turkeys and B. P. Rock chickens. Write.
Allen Thomas, Blue Mound, Linn Co., Kas.

PURE-BRED POLAND-CHINA SWINE.

Brood sows by Wren's Medium, Hadley M. Washington, Protection Boy, Moss Wilkes Tecumseh (by C. T. 2d), Tanner 19213, a grandson of the famous Hidestretcher, at head of herd, assisted by Prince Darkness, out of Darkness 1st. Corwin Sensation and Tanner pigs for sale. Get one for a herd header. Also some One Price Medium 2d pigs for sale. Three young boars ready for service. Write for prices.
J. R. WILLSON, Marion, Kas.

ESTABLISHED 1882. SERVICE FEE \$50.

KLEVER'S 1st MODEL

18245 S.
Sired by Klever's Model 14664 S. the \$5,100. king of boars; first dam Graceful Maid (48331); second dam Graceful F. 3d (29670), litter sister to Old Look Me Over 9011, the \$3,600 boar. This gives Klever's 1st Model all that could be asked in breeding and sale ring backing. He is black as ink, low down, deep and broad, extra head and ears. His get follows the pattern perfectly. He will be assisted by other good boars in service on thirty matured sows of modern type and breeding. I sell nothing but tops; keep my knife sharp for culls. Free livery at Roberts' stables.
E. W. BAKER,
Council Grove, Morris, Co., Kas.

COUNCIL GROVE HERD POLAND-CHINA SWINE.

Herd boars are H's World's Fair No. 2 11930, grandson of Seldom Found 7815, Klever's Model 3d 19789, King Hadley 15057 (C). This hog is not only a show hog, but a prize-winner, breeding Hadley Blood, One Price Imitation, Guy Wilkes 2d, Black U. S., L's Tecumseh and Chief Tecumseh 2d.
Did you ever see such a combination? Where can you get more of the blood of the great sires combined in so grand an individual?
Choice gilts and fall pigs for sale.
W. F. Shamleffer, Council Grove, Kas.

GROUND LINSEED

For stock of all kinds. Write for price.
KANSAS CITY WHITE LEAD & LINSEED OIL CO., 2

SWINE.

HADLEY BROOK POLAND-CHINAS STOCK FARM.

H. W. CHENEY, Prop., NORTH TOPEKA, KAS.
Cheney's Chief I Know, assisted by Model Hadley, at head of herd. Topeka is the best shipping point and my stock the best kind to buy. When in Topeka call at 1132 N. Harrison St. and be shown stock.

Verdigris Valley Herd Poland-Chinas.

125 head. The best individuals and most popular strains that money and judgment could buy and experience breed. Thirty choice spring pigs both sexes, by Black Stop Chief 16316 S. he by the great breeding boar Black Stop 10550 S., a son of the World's Fair winner, Short Stop. Write or visit us. WAIT & EAST, Altoona, Wilson Co., Kas.

Kansas City Herd Poland-Chinas

The future villa of Hadley Jr. 18314 C, the greatest boar of his age. I have pigs for sale now by Hadley out of Tecumseh Mortgage Lifter 32649 S. Order quick and orders will be booked as received. Farm nine miles south of Kansas City, on Fort Scott & Memphis R. R. Postoffice Lenexa, Kas.
W. P. GOODE, Proprietor, Lenexa, Kas.

MILES BROTHERS' HERD

Registered Poland-Chinas.

Peabody, Marion Co., Kas.
We have for sale now some choice fall pigs by Miles' Look Me Over and out of a full litter sister to Corwin Sensation, that sold February 2, 1896, at Mr. Wren's sale for \$167.50. Also some nice ones by Hadley Corwin Faultless, and by a son of Chief Tecumseh 2d. We can suit you in quality and price. Write us.

PLEASANT VALLEY HERD

REGISTERED POLAND-CHINA SWINE

King Perfection 4th 18744 S. at head of herd, assisted by Tecumseh Wilkes 12994 S. and Lambing Ideal 14050 S. The sire of last named is Gov. C. by Black U. S. We have for sale an extra fine male of June, 1896, sired by him. We have added several very finely bred sows to our herd. Write for particulars. Address either
W. E. JOHNSON, E. A. BRICKER,
Colony, Kas. Westphalia, Kas.

HIGHLAND FARM HERD

PEDIGREED POLAND-CHINAS.

Herd headed by Corwin I Know, a son of the noted Chief I Know 11992 S. Corwin I Know won second as a yearling at Iowa State fair in 1897. Weighed 600 pounds at 13 months. Assisted by Hadley U. S., a son of Hadley Jr. 18314 S.; dam by Mosher's Black U. S. 25 Brood Sows—Kiever's Model, Look Me Over, Chief I Know and What's Wanted Jr. breeding. Inspection and correspondence solicited.
John Hollin, Kickapoo, Leavenworth Co., Kas.

Mains' Herd Poland-Chinas

Headed by the three grand breeding boars, Model Combination—his sire was J. D. Model, he by Kiever's Model 14664 out of McKelvey's Lass 42107; his dam Lady Chief 42919, she by Chief Tecumseh 2d 9115 and out of Ralph's Pet 42788; One Price Chief—his sire Chief Tecumseh 2d 9115, his dam Alpha Price 38785, she by One Price 4207; Kansas Chief 35616—he by Royal Chief's Best and out of Bell O. 74594. The sows are all selected and equal in breeding and quality to any. A few sows bred will be offered. Young males and gilts ready. Satisfaction guaranteed.
James Mains, Oskaloosa, Jefferson Co., Kas.

ROSE CREEK JERSEY CATTLE

FARM POLAND-CHINA SWINE

MAMMOTH BRONZE TURKEYS
and Silver Wyandottes are from premium stock. Turkey eggs \$1.00 for 8, Wyandottes \$1.50 for 13. (Farm in Republic, Kansas.)
H. WOOD, Mgr., Chester, Neb.

SUNRIS STOCK FARM.

A. STANNARD, Prop., Hope, Kas.
Breeder of
English Berkshire Hogs.

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Agricultural Matters.

COST OF PRODUCING CORN.

Editor Kansas Farmer:—Possibly I may be too skeptical in relation to the value of estimates of cost of producing the various greater soil staples so current in the papers, whether from official or other sources, and distrustful of reported yields stimulated by premiums offered by so-called agricultural papers of the Orange Judd type.

Usually the experiments conducted to determine either cost of production or yield are "pocket" experiments, confined usually to a rod or at most an acre or two, and carried on without regard to cost where the object is to secure a great yield. That is, fertilization and watering are then resorted to in a manner that would be both impracticable and impossible if the product was to be sold at current rates in the open market and the grower forced to subsist on resulting profits.

An experiment to be of any practical value should be carried on commercially, both in its extent and as regards cost relatively to probable selling price of product. Experiments are rarely conducted in this way, and therefore have, for many, little value and less authority.

Recently a series of tables has been prepared by the general manager of one of the larger, if not the largest cattle feeding companies in the United States, drawn from the books of account of that company, and entitled to the same degree of credit, evidently, as would an account current from the same source. In this statement of cost of growing from 1,485 to 2,717 acres of corn yearly since 1889 the several factors of cost are presumably as exact as would be those of a great steel or cotton manufacturing corporation made for submission to the stockholders at their annual meeting, therefore deserving of all credence and of great value upon a subject mostly treated with conjecture and guess work.

From 1889 to 1897, inclusive, nine crops of corn were grown upon the company's Nebraska lands, with results as follows:

Year	Acres employed	Total bushels grown	Bushels per acre	Cost per acre	Cost per bu.
1889	1,485	40,000	27.0	\$3.28	12.2
1890	1,485	33,473	22.5	6.61	26.7
1891	1,825	42,000	23.0	5.01	22.0
1892	1,825	51,344	28.0	5.20	18.5
1893	1,325	60,028	45.3	6.93	15.3
1894	1,792	41,001	22.8	6.66	29.1
1895	1,875	76,154	40.6	7.56	18.6
1896	2,462	109,031	44.3	8.08	11.7
1897	2,717	111,932	41.1	6.54	15.9
Total and av.	16,791	624,963	37.2	\$6.28	16.9

This is a remarkable showing, and most significant as indicating the capabilities of the better Nebraska soils under intelligent business management. Probably nowhere else have equal results been obtained on such an area, and they go far to show that, as the present writer concluded after wide journeyings in that State, that the eastern half of Nebraska is the best corn region on the continent, if not in the world, and is probably the best general farming region as well, although second to central Kansas as far as wheat production is concerned.

Nebraska, long at the head of the corn States in yields per acre, furnishes a very complete exemplification of that law which has been pointed out by the best of authorities. That is, that near to its northern limit of growth will be found the best product and the greater yield of all the agricultural staples. This is as true of the corn of Nebraska as of the wheat of Canada and North Dakota, as it is true of the cotton of northern Texas and Oklahoma, and of the apples of the whole northern belt of the continent.

In these figures we have the results of an experiment carried on not only on a commercial scale, but for commercial purposes, with intelligent management, and the most exacting accounting—such accounting as is conducted by every great commercial company in all its transactions, and with which its life is so closely connected that it would speedily end. I have conducted a similar experiment on a small scale, and the results were equally valuable. I have worked for many years on a small farm, and I have seen more of the so-called experimental

eral manager's tables furnish means for most interesting comparison of cost of the corn grown and that of the enormous quantities bought in prosecuting the company's feeding operations. It appears that corn purchased during the eight years ending with 1896 cost an average of 25.6 cents per bushel, as against 17.1 cost of growing it upon the company's lands wholly with hired labor.

Another remarkable phase of the subject, brought into clear relief by these tables, is the fact that the company paid the farmers of Nebraska nearly 50 per cent. more for corn than it cost to grow it on the company's lands, and that the difference in favor of the farmers was greatest in years of minimum yields. For instance, in 1890-91 and 1894-95 the purchased corn cost 48 cents a bushel, while that grown cost but 26.7 cents in the earlier year and but 29.1 cents in 1894-95.

On the other hand, when yields were maximum ones there was but little difference in cost. For instance, the corn grown in 1895 cost 18.6 cents, while that delivered by farmers—by rail or wagon—actually cost but 16.5 cents, or 2.1 cents less than that grown; while that grown in 1896 cost 11.7 cents against 12.8 cents per bushel for that bought. In years of minimum yields the farmer was able to sell corn to the feeder for 75 per cent. above the cost of production, while in years of maximum yield he sold it at cost. In years of minimum yields 22 bushels an acre brought returns of \$10.56, while with yields of 40.6 bushels in 1895 and 68.6 bushels in 1896 the returns per acre were respectively no greater than \$6.70 and \$8.78, or about three-fourths the returns from minimum yields. This accords with conclusions reached by the present writer many years ago. That is, that for a product the price of which was controlled by domestic markets a small yield was far better for the farmers, as a whole, than large ones.

Obviously, the company's manager has very different ideas of what constitutes cost from those entertained by former Assistant Statistician Snow, of the Department of Agriculture, who contends that no charge for land is or can be a factor in soil production. This idea is in complete accord with the practices of the statistical division when run by the Dodge-Snow regime, as in determining the yield of corn an acre in 1890 that division excluded 6,000,000 acres not harvested, yet used all that season for producing corn; both Dodge and Snow arguing with me that, having produced no grain, these millions of cultivated acres could not be included—and they were not included—in the acreage upon which the year's yield was based.

In the very complete tables of the Nebraska Cattle Feeding Company the farming world is treated to the rare phenomena of results following from intelligent management recorded with as much exactitude as are the commercial operations of other great trading companies; and the value of the figures is greatly enhanced by the fact that they cover continuous operations extending over nearly a whole decade, instead of being worthless generalizations from a single season's operations. In fact, we here have the exact, and nothing is left to conjecture, while there is little chance for the equation to be affected by personal bias. This is so rare in agricultural operations that I have deemed it worth special notice, and probably of great value to your readers.

Peotone, Kas. C. WOOD DAVIS.

The Eight-Hour Day.

Editor Kansas Farmer:—I read the letter written by Mrs. Mary Johnson. As an old farmer I object to the eight-hour work day, and my wife could never think of having a gang of men lying around twenty-four hours for eight hours' work. If the housewife and hired girl are on eight hours, who will get the men their suppers? Or would Mrs. Johnson have the three meals in eight hours?

In my opinion it is not overwork that is hurting. A great many of us better have more work applied in the right manner. Idleness is the cradle of crime. Just think of a farmer keeping a team twelve months for some big, lazy hired man to work four months in the corn field eight hours a day. Would that be sensible, or can you see any profit in such work? I have worked fourteen years by the day or month for other men and I never felt as if I would wish to work only eight hours. I always took an interest in my employer's work. I then married an orphan girl that had worked hard all her working age for her clothes and board, with very little schooling. At the age of 21 I could neither read nor write my name. You may think that true from the writing of this letter. We raised eight children; four married. We came here to Reno county and took

a claim in 1872, and lived in a dug-out for about three years. In 1874 we had every bit of our corn eaten by the grasshoppers. In 1875 we lost all our crop by hail in June. We had not a dollar but what we worked for and we never drew one nickel's worth of relief. We did not stand around waiting for something to turn up. We stirred around and turned something up. We never thought of quitting at eight hours' work. Now my four children and I have 1,800 acres of good land, each a good farm with more than 300 head of good cattle, plenty of hogs and horses. Will plant more than 800 acres to corn this spring. Our indebtedness is very light. Have some money in the bank. I can assure you that we have made this all out of Kansas soil and we do not trade at the co-operative stores. We can now pay cash for all we buy. We will never hire a man for eight hours a day at \$18 a month.

Partridge, Kas. ZENO THARP.

Growing Soy Beans.

By Prof. F. C. Burtis, Kansas Experiment Station, Manhattan, in Industrialist.

The characteristics and history of the soy bean have been outlined at frequent times from our station and elsewhere, and need not be repeated here. To those not acquainted with its growth, it will be sufficient to say that this bean is an erect-growing plant, which, under Kansas conditions, and on different soils, attains a height of from one and one-half to three and one-half feet. Its stems are stiff, woody, brittle and profusely branched, bearing numerous pods.

Seed furnished by our experiment station has been tried by a great many farmers in a small way. Some have found the plant adapted to their wants and are growing it more or less extensively. One grower has raised thirty-five acres the past season, and has planned to put out 100 acres the coming summer. It is valued as a forage crop of great drought-resisting qualities, and yielding a fair quantity of grain, containing a large per cent. of protein (larger than linseed meal), a compound in which our common stock foods are deficient. The success of those raising the soy bean on a large and practical scale has excited new interest and is stimulating others to make the trial. Many inquiries render it necessary to send out more instructions as to methods of planting, harvesting, etc.

SOIL FOR SOY BEANS.

The soy bean is a legume, hence a nitrogen gatherer, and will do much better on a poor, thin soil than many other plants under similar conditions; but for a paying crop of grain, it is best to select a soil of medium fertility at least; and for the maximum yield of grain, the richest and deepest soil will be needed, and the extra yield of grain will pay for the chance afforded. Foul land should be avoided, as it will require hard work to keep the weeds out, which may increase the cost of cultivation beyond the profitable point.

The soil should be so handled as to have it in fine tilth and free from weeds at time of planting. Less labor will be required in the future cultivation of the crop if the weeds are kept down somewhat during the spring with the disc harrow, and the ground plowed just before planting, and in this case it must be thoroughly harrowed and leveled. This method gives the weeds such a backset that is preferable to fall plowing.

SEEDING AND CULTIVATION.

Although proof against an ordinary spring frost, they thrive much better when the weather becomes settled and warm. There is really a disadvantage in seeding before the middle of May, and it may be delayed until the last week in June, and still mature a crop of grain. Seeding before the middle of May does not seem to hasten the time of maturing materially, but makes the period of cultivation longer and more expensive, with no increase in yield of grain.

Other ways than seeding in drills and cultivating have been a total failure with us, and we cannot recommend broadcasting. Drill in rows as close as can be cultivated with a two-horse cultivator. While close planting will give a larger yield, the extra trouble in cultivating will overbalance the gain. Rows thirty-two inches apart can be worked with most cultivators. The plants should stand from two to three inches apart in the row. For such seeding it will require thirty to forty pounds of seed per acre. A common grain drill with part of the holes closed is a handy implement for drilling them in, as two rows can be seeded at the same time. Some have succeeded in using the corn drill. In cultivating use a cultivator with small shovels so as not to throw up ridges, which will bother in harvesting, and thus also

avoid covering up some of the pods that grow very close to the ground.

HARVESTING AND THRESHING.

A peculiarity of the ripe pods is their cracking open in the hot sun, making the harvesting and handling a point to be watched closely and attended to at the proper time. The medium varieties generally mature during the last week in August or the first week in September. The pods turn brown as they ripen, and the cutting should be started on a large patch when about two-thirds of the pods have changed color. We have used two methods of harvesting that are practical for large patches. A self-rake reaper does the work very speedily, keeps the beans clean, and leaves them in convenient bunches for further handling. This method will leave a few pods next to the ground uncut, but the time saved will make up for these, and if it is practicable to turn hogs in they will pick these up clean. The second method is probably in reach of more farmers, but will prove a little more expensive and disagreeable. A common cultivator is rigged up with two horizontal knives, bolted to and extending out from its inner shanks, so as to run just below the surface of the ground and cut the beans off as does the regular bean harvester. The stalks can then be gathered in piles with rakes or forks, or with a horse rake; but using the horse rake involves hand cleaning. Varying with the condition of the beans and the weather, as a rule the cocks should be left in the field several days before threshing. During this time they should be watched very closely, as a day or two of hot, dry weather may cause much shattering of the pods.

By putting in all blank concaves and running the machine slowly, a common thresher will thresh the beans nicely without much cracking. Soy beans do not crack so easily as navy beans.

YIELD AND USES.

During the last eight years on the station farm the yield of grain of the soy bean has been from ten to twenty bushels per acre. The past winter the college has used its surplus seed for feeding experiments. Several hundred bushels of seed have been sold over the State by private parties this winter, but the demand for seed has exhausted the supply. As a catch crop, after wheat or oats, soy beans have proven very successful, and this will probably be the most universal use made of them in the future. At this station in 1896 a yield of eight bushels of soy beans per acre was harvested from twenty acres of wheat ground that was seeded the last of June. The wheat was promptly removed and the ground plowed and thoroughly harrowed. The beans came up readily and made a rapid growth. In the fall the ground was in fine condition for another seeding of wheat if it had been desired. If the weather turns off extremely dry the growth of beans will be small and disappointing; but even in a case of total failure, the land will have had an early plowing, which is a most important thing for a succeeding wheat crop.

Our feeding experiments with soy beans in the past have been mostly with pigs, but at present they are being tested as a dairy feed. They are excellent to crowd or put a finish upon fattening hogs at any age, but they can be most economically fed to shoats or weaning pigs. With young pigs a feed of corn meal with an addition of one-third soy bean meal will produce 50 to 100 per cent. greater gains than can be obtained by exclusive feeding of corn.

What the Doctor Said.

Oakland, Kas., April 11, 1898.—Charles A. Parkhurst, of this town, was a sufferer from felons. A physician advised him to take Hood's Sarsaparilla, which he did, and since taking a few bottles he says he has not had a felon, boil or any other similar trouble.

The strongest force that made for the independence of this country was the British ministry, because its acts made necessary the resistance that resulted in independence. The strongest force now making for industrial independence is the money power, for its acts are making necessary the resistance that will result in independence.

Cried an English visitor in France, just before the revolution: "What has blighted this magnificent country, and crushed this noble people? Bad laws, cruel customs, wanton selfishness of the rich, the powerful and the privileged."

Don't Tobacco Spit and Smoke Your Life Away.

To quit tobacco easily and forever, be magnetic, full of life, nerve and vigor, take No-To-Bac, the wonder-worker, that makes weak men strong. All druggists, 50c or \$1. Cure guaranteed. Booklet and sample free. Address Sterling Remedy Co., Chicago or New York.

Sheep Department.

Conducted by J. CLARENCE NORTON, Moran, Kas., to whom all letters should be addressed.

SHEEP FOR KANSAS.

A paper by E. W. Melville, Eudora, Kas., read at the 1898 meeting of the Kansas Improved Stock Breeders' Association.

Your Secretary instructed me to write a paper on the sheep problem. Having gauged my capacity beforehand, he kindly refrained from instructing me to solve it; consequently I shall content myself in trying to present a few ideas that may be of assistance to others in the solution of the problem.

There are a number of problems connected with the industry, but to the average breeder the most important one is how to make the business permanently successful.

DIVORCE SHEEP FROM POLITICS.

I believe the first step in the solution is to divorce the interest from politics. Now, do not be alarmed; I am not going to give you a lecture on either high protection or free trade; and I care not which of the two you believe in, if you expect to continue in the business your interests are alike in the matter.

It has been the custom for most of the flockmasters to look solely to the production of wool, regarding the carcass as a by-product. It has been a common saying among the wool-growers that it could not be raised at a profit without a protective tariff, and unfortunately the cry has been echoed so often that the majority actually believe it, and on the first sign of adverse legislation are ready to abandon their flocks and throw them on the market regardless of the price received for them. We have had two exhibitions of this since 1883, when I first became interested in the industry. The change in the tariff scared the wool-grower to such a degree that thousands of sheep were forced on the market and the price fell so low that many sheep were sold for less than the freight, and the owners were called on to advance the difference; this in turn discouraged the producer of mutton and he in turn abandoned his friends at the very time he should have stood by them.

Again, when the Wilson bill was enacted we witnessed the same senseless sacrifice of flocks that had cost both time and money to build up. During all this time wool was dropping; sometimes the commission men would inform us that on account of adverse legislation the manufacturers refused to buy except at a reduced price; again it would be that, fearing adverse legislation, they would not buy except at a reduced price; and so whether the tariff went down or not, it was used as a lever to break the prices till the sheepmen were all but discouraged, and the industry received a decided setback.

In this great country of ours we boast that the will of the majority rules. The majority always differs radically in its opinions from the minority, and the history of the past teaches us that the majority of one administration may be the minority in the next, and if we are engaged in an industry that depends on the support of either one side or the other we must expect to go up or down according to the ideas in power. Consequently, I argue there can be no assurance of permanent success till we establish the industry on its own basis. The history of the past may be repeated, and if we continue to pay our attention to wool at the expense of the carcass we will have to suffer again. I would prevent this not by paying less attention to wool, for I believe we should raise all the wool we can, but by paying more attention to the size, form and quality of the body under the wool and raising a sheep that will sell at a profit for mutton no matter what we may receive for the wool that covers it.

DEVELOP FORM AT WILL.

If the English flockmaster on his high-priced lands can do this, we on our cheaper lands surely ought to be able to do so, and we have the advantage of them in being able to draw on the flocks that they have spent hundreds of years bringing up to their present standard as a source of supply for rams with which to bring our flocks up till they shall have a form that composes it. We have had experience enough to know that of all our domestic animals the sheep can be easiest molded to suit the eye and taste of man.

Let the Merino breeders keep pace with the downs and long-wools till the folds on their sheep shall be stretched to their utmost capacity to cover a form that will be pleasing to the eye and that dressed will yield a quality of mutton that once tasted will create a desire

for more, and herein lies our hope for a good market for the future.

WOOL SHOULD BE SCoured HERE.

My next step would be to practice a little domestic economy. It is safe to say there are 300,000 sheep in the State at an average of five pounds of wool to the sheep; our annual clip would be 1,500,000 pounds. The cost of freight and commission for selling is about 2 cents per pound. Now, this wool shrinks in scouring about 60 per cent., or 900,000 pounds, for which we annually pay 2 cents per pound, or \$18,000, for getting rid of—6 cents per head for every sheep in the State. In making this statement I wish to say that all wool does not shrink in this way, as wool from the mutton breeds will not shrink over 40 per cent. as a general thing. I simply give the average. I am not posted on the cost of the plant, but I will venture to say that this sum will be sufficient to start a plant that in time will be able to handle every pound of wool produced in the State. The work of scouring would be done here in our own State, giving employment to our own people, and I am satisfied that the wool scoured and sorted into its proper class would sell for more than enough extra to pay the cost of handling, for the manufacturer who, when he buys in the dirt, is compelled to buy large quantities of wool for which he has no use and which he is compelled to dispose of again, would be willing to pay an extra price for the privilege of buying only such wool as he wanted. In fact, the Hastings wool-scouring plant in Illinois has already proven this to be true; and who knows but what the ability to get wool as wanted and of the right kind would encourage the location of manufacturing plants in our own State? We are more interested in this, inasmuch as the present year promises to largely increase the number of sheep in the State.

AN ASSOCIATION.

As in union there is strength, my next step would be the organization of a State breeders' association that would bring us closer together and look after and encourage the industry—an association that would be alive, active and aggressive, with branch organizations over the State; and in order to keep us continually up to date in our methods and thoughts we should instruct the publishers that if they wish to continue to keep the Kansas Farmer at the head of the procession as the leading farm journal of the West it will be an absolute necessity for them to immediately add to its columns a sheep department under the care of a practical sheep man who is broad enough to look after the industry in all its branches and who is progressive enough to keep up with the times.

FERTILITY IN SHEEP'S TRACKS.

In conclusion let me state that the hills, uplands and high rolling plains with their nutritious grasses are the natural home of the sheep, and nowhere in the world can the animal be brought to a more perfect development. I believe the creator of these lands intended them to yield as great an income as the more fertile fields and valleys, and they will do so if stocked with the proper kinds of sheep well handled and cared for; and the sheep in turn will create a demand for the products of those fields, thus allowing us to ship, in a concentrated form, produce that is now shipped out at the rates often equalling if not exceeding one-fourth of its value. In a word, let Kansas in this industry, as she has in so many other ways, take the position that rightfully belongs to her as the foremost State in the Union, for it has long since been proven an axiom that "Fertility follows in the footsteps of the sheep."

Sheep Talk.

Do not buy any recipe for sheep dip. Use some standard dip.

Be sure and dip your sheep soon after shearing and kill all lice and ticks.

There is no let-up in the inquiries that keep coming to me for sheep. If you have anything to sell or want to buy anything you had better advertise in the Kansas Farmer.

Use only wool twine to tie wool. Binder twine will surely reduce the price of the wool. As wool is worth more per pound than the twine is, you can afford to use all you need.

Chicago is to have a full-fledged wool exchange, conducted by the best and most widely-known warehouse and storage company in the United States. They have a capacity for storing 125,000,000 pounds.

I personally know of forty grade ewes bringing their owner \$8.20 each in one year with 10-cent wool and 30 cents below the market for mutton. These ewes took the feed of four cows and the same party's four cows had four calves that

brought 100, and the milk was probably worth \$150 more, which made them bring \$250, against \$328 for the ewes, or a difference of \$78 in favor of the sheep under free trade and ruinous competition in the mutton market.

I present this week a very able paper read at Topeka, Kas., at the annual meeting of the Improved Stock Breeders' Association. Mr. King's paper, which has been already published, and this paper were said to be the two very best productions ever heard in Kansas on the sheep subject. Mr. Melville echoes the sentiment of most all sheep breeders, that this interest should be separated from politics. While on this subject I wish to say that I believe I fully understand that the management of the Kansas Farmer does not want this department to get entangled in any political discussion, and my own wish is, that no matter which political party is in power, to stand by the sheep industry; and it behooves us to learn our business so well that we will make money at it, even if under adverse legislation.

The Stock Interest.

Is it Profitable for Breeders to Make Exhibits at Fairs?

By J. S. Magers, Arcadia, Kas., read before the Kansas Improved Stock Breeders' Association, January 10, 1898.

This is a question, or rather a problem, that I am at a loss to know just how to solve and do justice to every breeder, as there are two classes of exhibitors. One of them is known as a huckster exhibitor, showing for what he can win and not having very much respect for the breeder, just so he gets all the blue and as many of the red ribbons as possible so as to make expenses out of it. He has no stock with him to sell to customers wanting to buy from his herd, but will kindly tell you that he will take your order and ship it to you when he gets home. The pigs he sends you are from the high-priced animals that he cannot afford to show, and "Yes, sir, they are better than anything I am showing, but I had all I could load to fill the classes to show for;" but he forgets to tell you that he has bought or borrowed at every place he has been, prior to this place, and no doubt but what he is then looking for something to borrow or buy to help him out at the next show.

Now, Mr. Chairman, I feel satisfied that I have stirred up muss enough for you on this side of the exhibitors, so let us take a look at the other side of the question. I believe that it is the duty that every good breeder owes himself, and more especially to his customers, to get out and make a good show of the particular breed or breeds he is breeding. As to the part of profit in it, that depends somewhat on the success you have in showing and the taste an exhibitor has for showing. You must place some value upon the new acquaintances and new customers you make. The enjoyment you have should be of some value. Talk to the printers' ink fellows as long as you don't have to dig up for them, and be sure to have the old sow along with two or three of her babies so as to attract the attention of all ladies, both young and old. Be sure and have them stop at your pen and punch every hog you are showing with their parasol or cane, and, if that does not satisfy them, loan them your whip so they can make them all get up not less than thirty times an hour, and before they leave, be sure you invite them to come back again in a short time to stir them up for you again.

Well, as to saying it is profitable for breeders to make a show, I will only answer for myself by saying I expect to show again next year. I never have been on any fair ground but what I made some good sales, and from the effort put forth in showing my trade has been increasing. While I would recommend that every breeder should try to show as many as possible of his own breeding, or all of them if he could, I believe the time is coming when every breeder will have to stand on his own merits and the huckster will be one of the things of the past, and the judge will not have to be slept with a week prior to the show. I do not wish to cast any reflections on any one in particular, yet you may expect to meet with all the obstructions until the different fair associations furnish us with better classifications.

Horns a Detriment in the Feed Lot.

Every now and then a protest goes up against dehorning cattle; the motive put forward is that of humanity, says the Wisconsin Farmer. In the case of breeding bulls, we are impressed with the belief that dehorning should not be done, although it is not motives of humanity

Faith in Hood's

The Great Cures by Hood's Sarsaparilla Are Indeed Marvelous.

"My husband suffered with stomach trouble so bad at times he could not work. He has taken Hood's Sarsaparilla and it is helping him wonderfully. He also had a scrofulous humor but Hood's Sarsaparilla cured this and he has had no trouble with it since. My little boy, too, has been taking Hood's Sarsaparilla and it has given him a good appetite. We have great faith in Hood's Sarsaparilla." Mrs. J. H. EDWARDS, 50 Edinburg St., Rochester, New York. Be sure to get Hood's because

Hood's Sarsaparilla

Is the best—in fact the One True Blood Purifier. Sold by all druggists. \$1; six for \$5.

Hood's Pills are the best after-dinner pills, aid digestion. 25c.

that create this belief. Merely as a belief, without pretense that it is an ascertained fact, we think that breeding qualities are likely to be impaired by the sacrifice of the horns in the case of horned breeds. Neither would we dehorn pure-bred cattle grown as breeding stock, but when horns are one of the characteristics of the breed, we would leave them there. When it comes to the question of animals that are to go to the feed lot, they should be dehorned every time. It is the profitable course. A herd crowded together, as is the case in the feed lot, will commit more cruelties and suffer more cruelty, a dozen times over, by reason of having horns than any that may be caused by the few moments of pain which result from the operation of dehorning. Indeed, from our observation of the operation and of the behavior of animals while undergoing it, we are of the opinion that the pain attending it is very much exaggerated in the popular mind. No evil consequences follow it, and even the milk function in cows, which is so easily disturbed, suffers no disturbance worth mentioning when cows in full milk are operated upon. Those who make these occasional protests pay no attention to the fact that castration, spaying and the docking of lambs are operations at least as painful, and for centuries more common than dehorning. Perhaps this is just the point—that they are common. The protestants are used to these operations, but are horrified by one no more painful, though quite as necessary, to which they are not accustomed. All cattle should be dehorned before going into the feed lot. It makes them quieter and more thrifty, the stronger tyrannize less over the weak, and all the cattle have more room in the same space, when the horns have been removed. In order to avoid the supposed pain attending the dehorning of animals, many advocate the use of caustic potash on the calf as soon as the buttons can be felt on the skull. This method is undoubtedly effective, and causes but little pain if the operation is done carefully and the caustic is not allowed to touch the skin.

Cures if Properly Used.

Houseville, N. Y., Sept., 1896.
Enclosed please find \$1.50 for a bottle of Gombault's Caustic Balsam. Send by express to Glendale, N. Y. It is an exceedingly good medicine. I cured a very bad spavin with it. If it doesn't take off any bunch from a horse it is because it is not used properly.

GEO. GRANGER.

Reduced Rates to Grand Encampment Mining District, Wyoming.

The Union Pacific will sell tickets at one fare for the round trip, plus \$5, from all points in Kansas, Nebraska, Colorado and Utah to Rawlins, Wyo. Dates on which tickets will be sold are first and third Tuesday in May, June, July, August, September, October and November. Stage line daily except Sunday each way between Rawlins and Grand Encampment.

For full information call on or address F. A. Lewis, City Ticket Agent, or J. C. Fulton, Depot Agent, Topeka.

Among the Ozarks,

The Land of Big Red Apples, is an attractive and interesting book, with views of south Missouri scenery. It pertains to fruit raising in that great fruit belt of America, the southern slope of the Ozarks, and is of interest to fruit growers and to every farmer and homeseeker looking for a farm and a home. Mailed free. Address J. E. Lockwood, Kansas City, Mo.

WEEKLY WEATHER-CROP BULLETIN.

Weekly Weather-Crop Bulletin of the Kansas Weather Service, for week ending April 18, 1898, prepared by T. B. Jennings, Section Director:

GENERAL CONDITIONS.

A cool week, with some frosts, warmer and clear the latter part. Good rains generally through the northern, and fair rains in the southern counties early in the week.

RESULTS.

EASTERN DIVISION.

The conditions have greatly improved this week, permitting of much work being done. Corn planting is being pushed in the central counties, and is nearly completed in the southern. Wheat is in fine condition; oats have improved; flax sowing is in progress; peach, pear and plum trees in bloom and apples leafing out. Grass is starting well, and pastures turning green.

Allen county.—Fine week for farm work; large acreage of flax sown, and some corn planted; sheep thriving on pasture.

Anderson.—Week began cold and wet succeeded by warmer, dry weather, and ground at close of week in fine condition with farm work progressing rapidly and corn planting under way; fruit and wheat promising; oats will be replanted with corn largely.

Bourbon.—Damage to oats and fruit by recent cold spells slight; ground now dry enough to plow.

Brown.—Wheat doing well and largest acreage ever sown; ground in fine condition; corn planting will begin next week; fruit all right; peaches beginning to bloom.

Chase.—Corn planting in progress; peaches in bloom; apple leaves starting; wheat is growing vigorously; oats and

corn planting begun; grass growing very slow.

Neosho.—Flax sowing and corn planting in progress; fruit prospects good except blackberries; wheat in very good condition; pastures coming forward rapidly; some early potatoes being replanted.

Osage.—Much corn being planted; wheat in fine condition; fruit trees blooming; gardens being planted; pastures looking well; fine week for farm work.

Riley.—Peaches, cherries and plums in bloom, apples coming into bloom; week not suitable for farm work; ready to plant corn when warm enough.

Shawnee.—Pastures showing green; peaches blooming and cherries coming into bloom; some plowing being done; wheat fine.

Wilson.—Much corn planted; wheat fine; oats recovering; pastures beginning to show; plum, peach and pear trees in bloom; flax and alfalfa being sown.

Woodson.—Plowing and corn planting being pushed; wheat fine; prairie grass starting rapidly; much alfalfa being sown; good farming week.

Wyandotte.—Potatoes generally planted, the early planting damaged some by cold; wheat in good condition, apples generally so; pears full of bloom; peaches slightly damaged.

MIDDLE DIVISION.

The week has been more favorable, bringing wheat forward finely, starting grass well, improving the oats and bringing peaches, pears and plums into full bloom. Plowing has been pushed, and planting and listing corn rushed so that a large per cent. of it is in the ground now, and in Harper some of the corn is coming up.

Barber.—Favorable week; grass starting nicely; corn being planted; wheat

plums and apricots in bloom; corn planting begun.

Phillips.—Wheat and rye fine; listing the order of the day; most fruit safe.

Pratt.—Excellent week on crops; wheat, oats and barley coming out nicely; corn being planted; peaches and plums in bloom, some apricots killed.

Reno.—Wheat looking well and oats coming slowly; listing corn progressing rapidly; peaches, pears, apricots and plums in full bloom, but the young peach in most of the blossoms is dead; grass starting finely.

Republic.—Wheat in the best of condition; corn planting begun; oats look well; peaches on upland not killed, on low ground most all killed.

Rush.—Damage by high winds remedied by rainfall; a small per cent. of wheat will fall and the ground be planted in spring crops.

Russell.—Weather very favorable for wheat, which is in fine condition; corn planting begun; gardens very late.

Salina.—Wheat making fine growth; some corn planted; fruit trees coming out; canker worm hatching; oats backward, most of the early-sown killed; gardens look all right.

Sedgwick.—Wheat doing finely, but needs more rain; oats coming up thinly in western part, better in southern; apricots and many peaches killed; corn listing nearly finished.

Stafford.—Ground sufficiently moist for present; grass starting well; wheat doing finely; farm work being pushed and listing corn in full progress.

Washington.—Wheat in fine condition but in northern part backward; oats coming up finely in northern part, while in southern some pieces thin; season very backward.

WESTERN DIVISION.

Corn planting has begun in all parts of the division. Wheat, oats and barley have materially improved, and fodder crops are being put in. Range grass, though backward, is starting well.

Cheyenne.—The light rains have brightened crops; everything growing nicely.

Clark.—Fine growing weather; grass, alfalfa and wheat growing fast.

Decatur.—Drilled wheat, which is the most general, is all right, but the broadcasted is somewhat injured; corn listing begun; grass and alfalfa coming nicely; all spring wheat is O. K.; a good week.

Finney.—A light acreage of small grains being sown; sorghum for forage the principal spring crop; alfalfa making fine start; range grass backward; early peaches and apricots killed, other fruits promise all right; rapid growth in all vegetation.

Ford.—Wheat looking good; oats and barley coming on well; fruit prospect good; plowing for corn; alfalfa and range grass coming on in good shape.

Graham.—Alfalfa fields green; pastures started; wheat, not winter killed, improved; corn planting started.

Gray.—Growing crops doing better; range grass much retarded by late spring; fruit promises half a crop; late frosts injured apricots more than other fruits.

Hamilton.—Wheat is promising, not hurt by the late freezing; late peaches not hurt; farmers busy with spring crops.

Haskell.—Appearance of small grain improved; ground dry for active spring work; some farmers planting corn.

Kearny.—Vegetation advancing rapidly, especially alfalfa and wheat.

Morton.—Cattle enjoying the green grass on the prairie; some gardening, but little farming done yet; peach trees in bloom, but not as full as last year.

Ness.—Wheat and rye fine in eastern part, in southern wheat damaged by March freeze; all crops backward on account of late spring; corn planting begun.

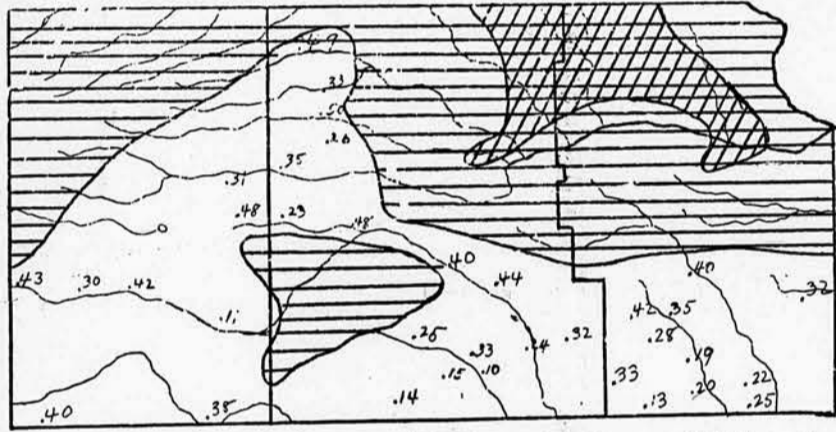
Sheridan.—Grain growing nicely; wheat on late fall plowing only grain that has suffered; grass is starting; stock has all come through winter in good condition; corn planting begun.

Thomas.—Good growing weather except a little too windy; wheat and grass improving.

Trego.—Wheat and grass enlivened by the warm rain; range grass backward; cattle commencing to improve; barley growing rapidly; alfalfa sowing and planting corn and cattle feed principal work.

Wallace.—Wheat becoming green again; corn ground in preparation; oats and barley coming up; alfalfa looking well; corn planting begun.

Tyra Montgomery, of the Larned Home Nurseries, Larned, Kas., is advertising a splendid stock of roses, fuchsias, carnations, begonias, etc., which he offers to sell our readers at reasonable prices. Notice the advertisement in "Special Want Column."



ACTUAL RAINFALL FOR WEEK ENDING APRIL 16, 1898.

alfalfa on stiff soils poor stand, on loose soils better results; apple leaves starting; peach trees blooming.

Chautauqua.—Corn planting nearly completed; wheat excellent; grass growing rapidly; oats recuperating some; garden truck on market.

Coffey.—Fine week for farm work; flax sown and some corn planted; wheat in fine condition; oats and pastures progressing nicely; peaches in bloom.

Elk.—Corn mostly planted; grass backward; fruit trees in bloom.

Franklin.—Farm work being pushed, though much ground yet too wet.

Greenwood.—Grass starting finely; wheat in good condition; corn being planted; peaches and plums in full bloom, pears beginning to bloom; farm work well along.

Jefferson.—Vegetation growing with a rush, and work progressing finely; fruit trees blooming and prospect excellent for all kinds; wheat fine.

Johnson.—Ground in good condition for plowing and farm work progressing; apricots in bloom; grass growing rapidly.

Labette.—A growing week; wheat looking well; oats bad; corn planting well under way; prospect for fruit fair; early gardens mostly killed.

Lyon.—Peaches, plums and apricots in bloom; strawberries budded; wheat excellent; grass growing rapidly; not much corn planted yet.

Marshall.—Some corn planted; oats coming out well; wheat fine; rain delays work.

Miami.—Vegetation slightly retarded by frosts; wheat growing steadily; oats not materially injured; peaches and pears in bloom.

Montgomery.—Wheat growing rapidly; grass making new start; trees leafing; plowing and corn planting being pushed; Wild Goose plums and flowering almonds in bloom.

Morris.—Wheat doing well; oats growing slowly; flax sowing mostly done;

and rye fine; plums and peaches in bloom; soil in fine condition and cattle doing well.

Barton.—The warm rain starts everything; farmers plowing, and listing corn; peaches blooming; grass coming out nicely and some cattle going on pasture.

Butler.—Late spring; farm work progressing slowly; corn planting being rushed; most of the oats in good condition; early fruit damaged, late fruit all right.

Cloud.—Conditions favorable for farm work; fruit not as badly damaged as first reported.

Dickinson.—Warmer weather with this moisture would make spring work and crops hum.

Edwards.—Corn planting in full blast; wheat coming out better than expected—some killed, however; good prospect for apples, peaches, pears and cherries; apricots killed.

Harper.—Wheat looks fair but is suffering for rain; oats beginning to suffer; corn is being planted and some is coming up.

Harvey.—Week highly favorable to rapid growth of wheat, oats and grasses; corn planting in progress; peaches, pears and plums in full bloom; second sowing of oats coming.

Kingman.—Ground is in fairly good condition and wheat doing well; corn planting in full blast; grass starting nicely.

Marion.—Crops making rapid advancement; oats very thin, account of late freeze; corn planting in progress.

McPherson.—Fine growing week; wheat doing finely; early-sown oats no good; corn planting in full blast.

Osborne.—Corn and potatoes being planted; wheat improving nicely; plowing for millet and cane; pastures backward.

Ottawa.—Wheat in excellent condition; oats and grass starting slowly; early potatoes planted; early peaches,



The old-fashioned watchman who prowled about the streets of medieval London, with a lantern in his hand to proclaim his coming, and who announced his passage through the streets by shouting "All's well," was a very inefficient protector when compared with the metropolitan police of New York City, commonly known as the "Finest." The

modern policeman does not proclaim his coming to the evil doer by shouting or by carrying a lantern. He does his work more quietly and effectively than the old-fashioned town watchman.

It is thus that in all the walks of life and in all occupations, times change and knowledge and efficiency increase. In this respect medical science has kept pace with the advance in other lines. Physicians and chemists have grown rapidly more skillful. There are medicinal preparations now-a-days that cure diseases that were a few years ago considered absolutely incurable. The final triumph in this respect is Dr. Pierce's Golden Medical Discovery. It was first given to the world thirty years ago, and has stood the test ever since that time. It cures 98 per cent. of all cases of consumption, bronchial, throat and kindred affections. Thousands who were hopeless sufferers, and had been given up by the doctors, have testified to its marvelous merits. It is the great blood-maker and flesh-builder. It makes the appetite hearty, the digestion and assimilation perfect, the liver active, the blood pure and rich with the life-giving elements of the food, and the nerves strong and steady. It acts directly on the lungs and air-passages, driving out all impurities and disease germs. An honest dealer will not try to persuade you to take an inferior substitute for the sake of a few pennies added profit.

Dr. Pierce's Pleasant Pellets cure constipation. At all medicine stores.

"GONE TO STAVES"

will be the report on many a stock tank as soon as the hot, sunny days come. **BETTER BUY A NEW ONE** which is so built that it **CAN'T FALL TO PIECES.** Made of the best, heavy galvanized steel and it **can't swell, shrink, leak or rust out.** The name of this tank is **"GOSHEN"** 48 page catalogue. Kelly Foundry and Mach. Co., 86 Purl St., Goshen, Ind.

There is Danger in Smoking Meat

OVER A FIRE. Smoke it with Wright's Condensed Smoke, made from hickory wood, containing a new meat preservative. Gives meat a fine flavor and protects it from insects. Satisfaction guaranteed. A 75c bottle (quart) smokes a butchering. Sold by druggists or sent prepaid. Small sample (smokes two or three hams) by prepaid express, 25c. Free circular. Never sold in bulk. Made only by E. H. Wright & Co., Ulysses, Neb.

Seed Potatoes

Red River Early Potatoes per bushel, \$.80
Red River Beauty of Hebrons " .85
Red River Early Rose " .85
Dakota Early Ohio " .75
Native Early Ohio " .60
Native Early Ohio, small " .30

SEED SWEET POTATOES.

Vineless per bushel, \$1.50
Southern Queen " 1.00
Red Nansemonds " .90
Yellow Nansemonds " .70
Jersey Chunk " .70

All seed guaranteed true to name. No charge for packages or drayage. Established 1883. COPE & CO., Topeka, Kas.

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Victory Implement and Wagon Paints, Nonpareil Carriage Paints. Home-made and the best made for all purposes. Window and Picture Glass, Hot-bed and Greenhouse Glass. If your dealer does not carry these goods send direct to CUTLER & NEILSON PAINT AND COLOR CO., Manufacturers and Jobbers, N.W. Cor. 11th and Mulberry Sts., Kansas City, Mo.

Murat Halstead's Great War Book.
The great War Correspondent's masterpiece. "Our Country in War." AND RELATIONS WITH ALL NATIONS. All about the armies, navies and coast defenses of the U. S., Spain and all nations. All about Cuba, Spain, Maine Disaster. Over 600 pages. Magnificently illustrated. Agents Wanted Quick. One agent sold 89 in one day; others are making \$25 per day. Most liberal terms guaranteed, 20 days credit, price low, freight paid. Handsome outfit free. Send 12 two-cent stamps to pay postage. EDUCATIONAL UNION, 824 Dearborn St., CHICAGO.

LAST WEEK'S CATTLE SALES.

In Missouri last week there was held a number of representative Hereford and Short-horn sales of pure-bred cattle, and while the offerings were of the right sort the prices realized were not quite equal to those at sales held earlier in the season, owing largely to the war excitement, which had resulted in a general movement among the banks to shut down on the easy money which had been so prevalent before.

THE SOTHAM HEREFORD SALE.

The sixteenth annual sale of Weavergrace Herefords was held at Chillicothe, Mo., April 13, and twenty-five females and twenty-five males were sold to the highest bidder. There was a very large attendance of leading breeders from Indiana, Illinois, Iowa, Missouri, Kansas, Oklahoma, Texas, Nebraska, Colorado, Montana and Oregon. The day opened with damp, cold and disagreeable weather and by 11 o'clock a terrific and fitful gale of wind set in at a forty-mile rate which threatened during nearly the entire afternoon to sweep down the barn and sales-day tent. The quartette of auctioneers, Cols. Judy, Woods, Sparks and Sawyer, all agreed that at no time during their professional career as auctioneers did they ever try to make a public sale under more trying or unfavorable conditions and circumstances.

The fifty head were distributed, twenty going to Missouri buyers, thirteen to Texas, eight to Kansas, five to Illinois two to Nebraska and one each to Iowa and Oregon. Mr. E. Wayne Ponting, the second son of the well-known Mr. Thomas C. Ponting, of Moweaqua, Ill., topped the sale on catalogue No. 1, the fifteen-months-old bull Excellent (Vol. 18), at \$1,575. This very attractive young fellow was sired by Exemplar 63671, a son of Mr. Sotham's premier herd bull Corrector 48976; and his dam, Grace 58553, a daughter of Corrector, the great show-yard winner every year since in her calf form three years ago. Such is the high Hereford character possessed by Excellent that when he was out last fall at the State fairs Mr. Ponting offered Mr. Sotham \$1,000 for him then, but Mr. Sotham would not break his inflexible rule of selling nothing from the herd except on his annual sale day.

Another reason why the females did not average more in this sale was the fact that the heifers were mostly a year or less, and three aged cows were also offered, making it necessary for the buyer to have to wait longer before returns on his investment, consequently advantage was taken by purchasers of the existing conditions to drive the sharpest bargains possible. The leading Kansas buyers at this sale were: C. A. Stannard, Hope; H. L. Leibfried, Emporia; C. M. Johnston, Caldwell, and A. P. Browning, Hamlin.

The summary of the sale is as follows: Twenty-five bulls sold for \$9,180, an average of \$367.20; twenty-five cows and heifers sold for \$7,900, an average of \$316; fifty Herefords brought \$17,080, a general average of \$342.

THE MORRIS SHORT-HORN SALE.

Mr. John Morris, the well-known breeder of Cruickshank and Cruickshank-topped Short-horn cattle, made his fourth annual sale at the Chillicothe, Mo., fair grounds, April 14. Buyers and visitors were out from Illinois, Iowa, Nebraska, Kansas, Oregon and Missouri. The prices realized were not quite up to the expectations of Mr. Morris and his son, Mr. Al D. Morris, who has charge of the herd, yet a paying advance was had over the annual sales averages of last year. The same influence—the tightening up of easy money, was contributory as on the preceding day, when Mr. Sotham sold his annual draft of white-faces at Weavergrace farm, near Chillicothe.

The average price, when the ages of the offerings are taken into consideration, demonstrates that there is money in well-bred beef Short-horns and that the Messrs. Morris are sure to receive a fair reward for their time and money devoted and invested in Cruickshank cattle.

The Kansas buyers at this sale were: F. A. Conger, Yates Center, who bought five cows and one bull; R. H. Towne, Topeka, who bought two bulls; and German Madell, Leavenworth, who bought one bull.

Summary of the sale is as follows: Twenty-two bulls sold for \$2,435, an average of \$110.45; twenty-eight females sold for \$2,995, an average of \$106.96; fifty Short-horns brought \$5,425, a general average of \$108.50.

HARLAN AND CAMPBELL HEREFORD SALE.

Mr. Geo. W. Harlan, of Otterville, Mo., and W. E. Campbell, of Kiowa, Kas., held a public sale of Herefords,

Thursday, April 14, at the stock yards sale pavilion, Kansas City, and, all things considered, were successful. Neither lots were fitted in the usual sales-day dress, as Mr. Harlan concluded less than a month ago to disperse his collection, and those of Mr. Campbell's were just off his ranch near Kiowa, Kas. Cols. Woods and Sawyer did the honors of the block. While the prices realized were not as large as those had at some of the late preceding sales, they were such that it guaranteed some sure money to both buyer and seller and demonstrated the appreciation of the beef-producing public for Hereford cattle. Buyers from Missouri secured seventeen head, Illinois six, Kansas four, Texas and Iowa one each. The highest-priced bull was the herd bull, Mercury 58813, bred by Van Natta, of Indiana. He was sired by Hengler 37003, a grandson of Anxiety 5th 2948. The dam of Mercury was Miss Lark 30995, a granddaughter of Tregrehan 6203 and of Rodney 2563. Individually this four-year-old was one of the few best aged Hereford bulls offered at public sale during the past two years and should have brought Mr. Harlan more money. He went to A. J. Gettler, of Glenwood, Iowa, for \$450. The highest-priced cow was catalogued lot No. 2, Atlanta 2d 51324, by Anxiety Monarch 41216 and out of Erica 51st 41238. Her more extended pedigree shows a very strong and desirable line of progenitors. She went to U. S. Campbell, of Bates City, Mo., for \$480.

Mr. Harlan sold ten bulls at an average of \$202, and nineteen cows and heifers at an average of \$277.89. His consignment of twenty-nine Herefords brought \$5,280, an average of \$251.72.

The Campbell consignment consisted of fifteen young bulls, only four of which were registered, the others being pure-bred out of non-registered dams. They were short-grass grown and were not specially fitted for the sale ring. They made an average of \$125. Had Mr. Campbell dressed 'em up he doubtless would have realized 50 per cent. more money for them.

THE SCOTT & MARCH HEREFORD SALE.

Messrs. Scott & March held their second annual Hereford sale, April 15, on their farm adjoining Belton, Mo. Buyers and visitors were out from half a score of States, and after an elegant sales-day lunch had been disposed of, at 11 o'clock over 800 persons, among whom were twenty-five lady visitors, assembled in the new sale pavilion and were called to order by the well-known auctioneers. Cols. Woods, Sparks and Sawyer. While the prices realized were not up to expectations, yet about 35 per cent. more was realized over those received at their public sale held in April, 1897. Two months ago the entire 100 head could have been closed out at over \$300 each by private treaty, still the average price realized is of itself sufficient to substantiate our position that any well-bred two-year-old heifer safe in calf is a most profitable investment at \$400. If yearling calves will bring on an average of over \$200, that is a sure 50 per cent. gain. The threatened international war doubtless contributed and influenced buyers, else an average of \$300 or better would have been realized. Ninety-two head were sold and forty-nine went to Missouri buyers, sixteen to Texas, twelve to Kansas, eleven to North Dakota, and two each to New Mexico and Iowa. The offerings were all young things. Thirty of the forty-five heifers were bred. Mr. K. B. Armour, of Kansas City, topped the sale on the twenty-four-months-old cow, Lot 97, Starlight (Vol. 18), a granddaughter of Gudge & Simpson's World's Fair winner, Don Carlos 33734, at an even \$400.

The Kansas buyers at this sale were: McElwaine & Brown, Stanley; H. M. Pratt, Lawrence; A. E. Metsker, Bond and H. B. Gumaer, Garden City. Summary of the results of the sale is as follows: Forty-seven bulls sold for \$9,215, an average of \$196.06; forty-five heifers sold for \$10,465, an average of \$231.11; ninety-two Herefords brought \$19,680, a general average of \$213.91.

This Will Interest Many.

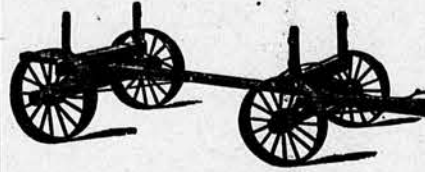
F. W. Parkhurst, the Boston publisher, says that if any one who is afflicted with rheumatism in any form, or neuralgia, will send their address to him at Box 1501, Boston, Mass., he will direct them to a perfect cure. He has nothing to sell or give, only tells you how he was cured. Hundreds have tested it with success.

Do not overfeed your breeding stock if you want sound, fertile eggs.

Kerosene your roosts, upper and under side, each week.

A Good Cheap Farm Wagon.

In order to introduce their low metal wheels with wide tires, the Empire Manufacturing Co., Quincy, Ill., have placed upon the market a farmer's handy wagon, sold at the low price of \$19.95. The wagon is only twenty-five inches



high, fitted with twenty-four and thirty-inch wheels, with four-inch tires. This wagon is made of the best material throughout, and fully guaranteed for one year. Catalogue giving full description will be mailed upon application to the manufacturers, who also furnish metal wheels at low prices, made any size and width of tire to fit any axle.

A correspondent speaks of a new English process of preserving milk without hermetically sealing it, which is in substance as follows: The milk is brought to a boiling point when from one-half to one and a half pounds of glycerine, mixed with about five times its volume of distilled water, is added to 100 pounds of milk, whereupon the whole is evaporated to one-fourth or one-fifth of its original volume.

A company is being organized at Compton, Canada, to sterilize milk according to the Bender process. Mr. Bender, who claims to be able to keep milk fresh and sweet for eight months, controls his patents, and has already formed a company at Halifax, Nova Scotia, to export sterilized milk to the West Indies and other points.

Civilization is only now beginning to make itself felt in the dairy. Its first order is, "Clean up."

THE STRAY LIST.

FOR WEEK ENDING APRIL 7, 1898.

Sedgwick County—A. M. Denny, Clerk.
PONY—Taken up by John T. Hessel, in Erie tp., March 15, 1898, one sorrel pony mare, 4 years old, white hair sprinkled over body; face, nose, under jaw, right fore and both hind feet white, white spot on belly back of elbows; valued at \$10.
MULE—By same, one brown mare mule, 2 years old, light bone, mealy nose; valued at \$20.
MULE—By same, dark iron gray horse mule, 2 years old, white spot on inside right front leg about half way between knee and fetlock; valued at \$15.

Allen County—C. A. Fronk, Clerk.
PONY—Taken up by O. W. Salisbury, in Marmaton tp., one dark bay pony mare, with white hair in forehead, 4 years old; valued at \$12.

Barber County—J. E. Holmes, Clerk.
HORSE—Taken up by W. M. Cass, in Cedar tp. (P. O. Hazelton), February 26, 1898, one brown horse, left hind foot white, star in forehead, foretop roached, shows both saddle and harness marks; valued at \$25.

FOR WEEK ENDING APRIL 14, 1898.

Ottawa County—W. W. Truitt, Clerk.
TWO CALVES—Taken up by Chas. Thomas, in Ottawa tp., November 17, 1897, two bull calves, one about 1 year old, the other about seven months old; one light brindle, the other dark brindle, with dewlap marks.

Labette County—E. H. Hughes, Clerk.
COW—Taken up by J. G. Good, in Howard tp. (P. O. Coffeyville), February 18, 1898, one white cow, weight 1,000 pounds, dim brand on left side; valued at \$25.

Cherokee County—S. W. Swinney, Clerk.
MARE—Taken up by L. C. Wellman, three miles north of Baxter Springs, in Spring Valley tp., March 19, 1898, one bay mare, weight 850 pounds, small star in forehead, dark mane and tail, indistinguishable brand on left shoulder; valued at \$15.
HORSE—Taken up by N. Nice, one-half mile north and one and one-half miles east of Neutral, March 21, 1898, one gray horse, weight 550 pounds, dark mane and tail, shod on hind feet; valued at \$20.

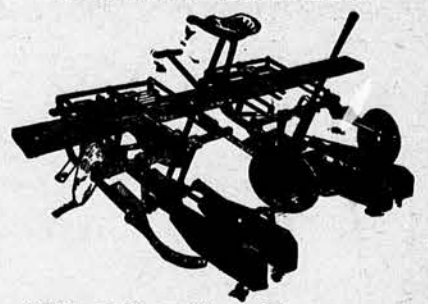
FOR WEEK ENDING APRIL 21, 1898.

Coffey County—Dan K. Swearingen, Clerk.
FILLY—Taken up by John Williby, in Pleasant tp. (P. O. Burlington), one bright bay filly with black mane and tail, 2 years old, weight 750 or 800 pounds, no marks or brands; valued at \$15.
MULE—By same, one very dark brown horse mule, mane and tail long, weight about 700 pounds, 2 years old, no marks or brands; valued at \$15.

Sheridan County—H. W. Perceval, Clerk.
HORSE—Taken up by J. H. Small, in Adell tp., March 25, 1898, one bay horse, blind in right eye; valued at \$20.
HORSE—By same, one sorrel horse, white hind legs; valued at \$15.

Labette County—E. H. Hughes, Clerk.
MULE—Taken up by T. J. Vance, in Elm Grove tp. (P. O. Edna), April 2, 1898, one iron gray horse mule, 6 years old, 14 hands high, collar marks, no brands; valued at \$25.
MARE—By same, one brown mare, 6 years old, 14½ hands high, left hind foot white, no brands; valued at \$10.
HORSE—By same, one bay horse, 7 years old, left hind foot white, saddle marks; valued at \$8.

CRACKERJACK.



All Steel—Never Wears Out. Dust-proof Boxings. Levers to Raise Knives and Fenders.

WARNER.

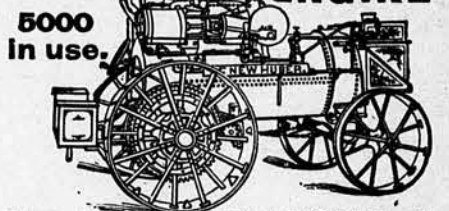


Best Knife Cultivator on Earth for Listed Corn.

WESTERN MFG. CO.,
 Kansas City, Mo.

For sale by one dealer in every town.

THE NEW HUBER TRACTION ENGINE



5000 in use. Winner in all practical tests at World's Fair. All sizes, both simple and compound. Ask for Catalog.

NEW HUBER SEPARATOR
 With WIND STACKER.

Won the \$200 Gold Prize last season for making the best straw stack. Also furnished with

AUTOMATIC SWINGING STACKER ATTACHED to machine, doing same work as an independent stacker. See the New Huber for 1898 if you expect to buy a machine. Write for catalogue.

FERGUSON IMPLEMENT CO.,
 General Western Agents,
 1209 to 1215 Union Ave., KANSAS CITY, MO.

Brass, Aluminum, Grey Iron Castings

Patterns, Models, Machine Work.

TOPEKA FOUNDRY,
 TOPEKA, KAS.

A Good Wagon

begins with good wheels. Unless the wheels are good the wagon is a failure. IF YOU BUY THE ELECTRIC STEEL WHEEL made to fit any wagon—your wagon will always have good wheels. Can't dry out or rot. No loose tires. Any height, any width tire. Catalog free. **ELECTRIC WHEEL CO.,** Box 46 QUINCY, ILL.

THE CROWN Bone Cutter

for cutting green bones. For the poultryman. Best in the world. Lowest in price. Send for circular and testimonials. **Wilson Bros., EASTON, PA.**



A STITCH IN TIME

Saves nine, is an old and truthful adage, so take time by the forelock and order a pair of our ACME HAME FASTENERS before your old and annoying hame straps are entirely worn out. The ACME Hame Fastener keeps the hames always tight, preventing wear on the collar, is easily operated in the dark, even with mitts on. Cannot be opened by the horse. Will last almost forever, and must be seen and used to be appreciated. Sample 25c or 40c for pair postpaid, and terms to agents. Sells at sight. Send now, don't put it off, as first purchaser secures agency. Circular for stamp. **H. M. SHEER & CO.,** Box 64. Sole Manufacturers, QUINCY, ILL.

The Home Circle.

LET THERE BE LIGHT.

"The life of man," said one of passing ken,
"Is like a sparrow's flight
Through a lit hall—out of one dark again
Into another night!"

Some sit at feasts with myrtle crowned and
rose,
Some toil with heavy heart,
Within that House of Life whose portals
close
On us, who thence depart—

Go, unaccompanied, without one friend,
Even as we came, alone,
Blind, dumb, our solitary path to wend
Into the dim unknown.

On that strange journey shall, some time,
somewhere,
We mayhap come to find
Some other House of Life, more wide, more
fair
Than this we leave behind?

Oh, question vain! Oh, passionate cry of
earth!
To which the brazen sky,
Since our small world from chaos had its
birth,
Has never made reply!

And yet, O souls unnumbered as the sand
Beside the eternal sea,
Who took your flight from out the Father's
hand
That fashioned thee and me.

Surely our faltering course cannot go far
Through that dim second night,
Ere there shall cleave the darkness, like a
star,
His voice, "Let there be light!"
—Stuart Sterne, in the Century.

NAVAL BATTLES.

Naval battles of the future will be unlike those of the past. There will be no boarding parties, no hand-to-hand conflicts, and opportunities for individual heroism will be rare. The contests will be of machine against machine, and what will result is mere conjecture.

Sailors have won more than their fair share of glory in battle. When a war is fought on sea as much as on land reputations for great courage are made by more sailors than soldiers, and war has usually given the sailor a higher niche in the temple of fame than is given to the soldier. Whatever may have been the outcome of an engagement at sea, it is seldom that the contest is not heroic. One war ship may try to avoid a fight with another, but when she is compelled to engage in the contest the battle is one of desperation, and the superior force of the enemy will have the effect of making the inferior crew fight more desperately.

This is not wholly due to any superior heroism of the sailor to the landsman, but to the fact that a man-of-war must either stand its ground or flee maintaining a running fire, and this means certain destruction for the fleeing craft unless it be much swifter than its pursuer. But the men on board must fight with desperation, which is partly due to the knowledge that they are confined to a circumscribed area within the ship's lines and have no "rear" to which they may retreat. The ship itself cannot be moved without the orders of the navigators, so the crew could not retreat if it would. If there were a panic the crew might cease firing, but there would be no surrender except at the order of the commander. His position on the quarter-deck would prevent them from hauling down the colors, and as long as they flew from the masthead the enemy would fire its broadsides. Then retreat was further made difficult by the fact that a "raking fire" would mean a destruction of the rigging that would prevent flight.

But more than anything else, the sailor has been trained in a school whose tradition it has been to fight to the last gasp and win on the spot or die on the spot. Surrender was only open to the commander.

This is the way battles on sea were fought. The methods were about the same until the Rebellion. There was much less difference between the ship of the sixth century before Christ and that of the eighteenth century than there is between the latter and the Iowa or Puritan of to-day. All ships were wooden until the latter part of the nineteenth century, and there were no steam vessels.

Whether the ancient Greeks or Egyptians first built war vessels is uncertain. The first representation of a naval engagement, however, is to be found upon an Egyptian bas-relief from the temple of Medine-Haban, dating from the twelfth century B. C., and representing a victory gained by Ramesses the Great over a league of Pelagians, Etruscans and others that had sent a marauding expedition against the Egyptian coast. The Egyptians in this picture are winning the battle easily. The Greek ships are like the Viking ships of the Norsemen, and have a figurehead resembling

a swan, while the Egyptian ships are without ornament, but have a sharp prow, which was used as a ram.

The fighting vessels of the ancients had square sails, but their chief dependence was upon oarsmen. The oarsmen were arranged in banks, the favorite number being three. Each oar was pulled by one man, and the rowers sat in three ranks upon benches that resembled a series of steps. The three banks of oars fell in the same vertical plane and differed in length according to their bank. The whole rowing strength of a trireme was 174 men, who were so densely packed together when on duty that they had to take their places according to strict discipline, and had little chance of escape should the vessel be struck by an enemy and sink. The oarsmen were at first freemen, but later slaves and malefactors were employed.

The first naval battle recorded in history was that of Salamis, October 20, 480 B. C., in which the Persians were defeated by the Greeks. When Leonidas and his Spartans had fallen at Thermopylae the next object of the allies was to guard the Isthmus of Corinth. As soon as it was known that the Persians had passed Thermopylae the Greek ships moved to Salamis, where the homeless population of burning Athens had been conveyed. The Greek defeat of the Persians took place here, and the 366 Greek ships successfully defeated the 1,000 Persian vessels. Two hundred of the latter were destroyed and the others fled.

An epoch in the history of naval warfare was marked by the battle of Mylae, fought between the Romans and the Carthaginians 260 B. C. Carthage was mistress of the sea, just as Rome was mistress of the land. During the early part of the war it became evident that, without a large fleet, the Romans could not defend such an island as Sicily, with its vast extent of coast, against the Carthaginians. In addition to this, the Carthaginians made use of their naval strength to send ships from Sardinia and other of their possessions for the purpose of harassing the coast of Italy. The Romans and their Greek allies were in danger not only of not winning new territory, but were likely to lose some of their old possessions. If Rome wished to overthrow and humiliate her rival she must meet her at sea. So the Romans set to work to build a fleet.

This was not an easy matter. The Romans were utterly unacquainted with the art of building the quinqueremes—large ships of war, with five benches for rowers, one above the other, which formed the strength of the Carthaginian fleet. Their ships were triremes. But a quinquereme was stranded on the coast and the Romans used it as a model. Polybius says that they set to work with such zeal that within two months after the felling of the wood a fleet of 100 quinqueremes and thirty triremes were ready to be launched. They were manned by Romans and Italians who had never before handled an oar. In order to gain time these men were exercised on land. After a little practice on board the ships the crews were sent out to challenge the ablest seamen of their time.

The first encounter was unfortunate. Seventeen Roman ships entered the harbor of Lipara under the consul, Cornelius Scipio, and were promptly captured.

Shortly afterward the Roman fleet, under the consul, Caius Duilius, met the Carthaginian fleet, under the command of Hannibal, and then took place the greatest naval battle of ancient times. It is said that the Carthaginians had 130 ships, ten more than the Romans, and their vessels were far superior not only in their build but also in the skill of their navigators.

The tactics of ancient warfare consisted of running the ships against each other and either sinking them as a result of the collision or else brushing away the mass of oars. Each ship had sharp prows, used to pierce the sides of the enemy. The collision was the important thing, and while the soldiers fought from the deck with stones and other missiles, their work was but of secondary importance.

Knowing the superiority of their enemy in naval tactics, the Romans arranged a plan by which, instead of ship being pitted against ship, man should be matched against man. They invented boarding bridges. On the fore part of the ship, against a mast twenty-four feet high, a ladder thirty-six feet long was placed, twelve feet above the deck, in such a manner that it could be moved up and down as well as sideways. This drawing up and down was effected by means of a rope, which passed from the end of the ladder through a ring at the top of the mast on the deck. The ladder was so broad that two soldiers could stand abreast on it. Rallings right and left served as a protection from missiles and against the danger of falling. At

GOLD DUST

THE BEST WASHING POWDER

the end of the ladder was a strong pointed hook bent downward. If the enemy approached near enough they had only to let go the rope which held the ladder upright. If it fell on the deck of a hostile ship the hook penetrated the timbers and held the two ships together. Then the soldiers ran from the deck along the ladder to board, and the sea fight became a hand-to-hand engagement.

Unsuspecting these wiles the Carthaginians tried their usual tactics upon the Roman fleet, confident of an easy victory. But Hannibal was disappointed, for the boarding bridges worked beautifully. The Carthaginians were easily routed, and fifty of their ships were taken by the Romans, with a great number of prisoners. Hannibal himself escaped with difficulty.

The Romans were delighted, and made as great a hero of Duilius as the English ever made of Nelson. He was rewarded by being granted a flute player and a torch bearer, who were to accompany him whenever he should return home from a banquet in the evening, and a column in honor of the victory was erected in the capital.

Ever afterward the Romans used this method of warfare, and hence was mistress of seas as well as land, and she used her navy to aid her in her colonizing plans. With this new method of naval warfare invented by the Romans the ram fell into disrepute, and the galleys commenced to carry fighting towers and engines of war.

After the second and third century of the Christian era a hiatus exists in naval history, and very little is known of war vessels until the twelfth century. About this time the modern galley, a long, narrow craft with a length of seven or even ten times its breadth, came into being. They were much the same as the ancient triremes or quinqueremes, and the same names were retained. In the fifteenth century the only change that had been made was the substitution of greater oars, each of which was pulled by three or four men.

The most important battle of the Middle Ages was that of Lepanto, which ended the power of Turkey on the sea and established Spain's maritime grandeur. It was fought by the Turks to secure Cyprus, and the opposing fleet was furnished by Spain, Venice and the holy see. Together the allies raised 300 vessels, great and small, manned by 80,000 soldiers and seamen. The Turks had a fleet equally as strong, and the Christians met the infidels October 7, 1571, in the Gulf of Lepanto. The terrific fight which ensued lasted but four hours, but those were hours of indescribable horror and carnage. "It was indeed a sanguinary battle," says Prescott, "surpassing in this particular any sea fight of modern times." The loss fell much the most heavily on the Turks, of whom 25,000 were slain. What brought most pleasure to the hearts of the conquerors was the liberation of 12,000 Christian captives, who had been chained to the oars on board of the Moslem galleys, and who now came forth with tears of joy streaming down their haggard cheeks to bless their deliverers. The Christians lost 8,000 men. The Turks lost all but forty of their 250 ships.

Going into action was a gorgeous sight during the Middle Ages. Falcons and broad banners of gaudy hue were flung to the breeze, the sunlight flashing upon the breastplates of the men drawn up in fighting order, and upon a sort of bridge or castle amidships stood a band of richly caparisoned musicians playing with all their might. At the bow was the battery, consisting of magonels and great crossbows, with winding gear that shot showers of huge stones and arrows, red-hot irons and carts of Greek fire at the enemy. Fore and aft small towers were erected,

from which archers shot arrows, and each vessel was supplied with a ram.

Gunpowder led to the abolition of the towers and artillery was substituted. Gradually, with the perfection of the art of sailing, the tactics of warfare were changed. During the early part of the sixteenth century the low galley was replaced by the sailing war vessel, and the size of the guns, which were mounted in broadside on these ships, constantly increased. With this increase there came a corresponding increase in the size of the vessel until, during the seventeenth and eighteenth centuries, the war ships became formidable affairs, with three decks and a hundred or so guns.

The most deadly gun of those days was the carronade—a light piece first constructed at Carron, in Scotland. This gun was of large caliber, short length and light weight, and its destructive effect was supposed to exist not so much in its power of penetration as in its ability for splintering. With a reduced charge of powder and slow initial velocity the projectile from the carronade created havoc wherever it pierced the side of the enemy.

With these developments came a gradual change in naval methods, and at the beginning of the nineteenth century warfare was well organized, the crew being divided into little companies, each of which had certain duties. Besides the crew, each frigate had thirty or forty marines, whose duty it was to police the ship and prevent mutiny. They were kept carefully apart from the crew, and animosity between them was encouraged. In time of battle they were placed in the tops, where it was their duty to pick off the enemy with their muskets. In case of close quarters they were expected to board the enemy, assisted by two or three seamen from each gun, the latter being armed with pistols, cutlasses and boarding pikes. These were known as boarders, and when they were called for just so many men and no more ran from each gun.

When a battle was about to be fought the decks were sanded to make them less slippery when blood should begin to flow, and ammunition, small arms, guns and pikes were stacked conveniently near the masts.

The sailors for the most part led a hard life, and were treated little better than their predecessors, the galley slaves. Flogging was common, and many men died under the lash. Impressment was the usual resort to secure crews, but the men fought bravely.—Chicago Times-Herald.

Farmers Break the Buggy Monopoly.

It is claimed that for years buggy manufacturers have secured exorbitant prices for their goods, but recently, through the combined assistance of the farmers of Iowa, Illinois and other States Sears, Roebuck & Co., of Chicago, have got the price of open buggies down to \$16.50; Top Buggies, \$22.75; Top Surries, \$43.75 and upwards, and they are shipping them in immense numbers direct to farmers in every State. They send an immense Buggy Catalogue free, postpaid, to any one who asks for it. This certainly is a big victory for the farmer, but a severe blow to the carriage manufacturers and dealers.

There are men who are not liars, but who have an uncontrollable propensity for confounding things actually known with things merely imagined!

The most heartless and industrious oppressors are often the most eloquent eulogists of human liberty.

Do not expend horse energy in hauling unrolled or out-of-condition machinery.

To Cure Constipation Forever.
Take Cascarets Candy Cathartic. 10c or 25c.
If C. C. C. fail to cure, druggists refund money.

The Young Folks.

THE BADGE OF MEN.

"In shuttered rooms let others grieve,
And coffin thought in speech of lead;
I'll tie my heart upon my sleeve;
It is the Badge of Men," he said.

His friends forsook him: "Who was he!"
Even beggars passed him, with a grin:
Physicians called it lunacy,
And priests the unpardonable sin.

He strove, he struck for standing ground;
They beat him, humbled from the field;
For though his sword was keen, he found
His mangled heart a feeble shield.

He slunk away, and sadly sought
The wilderness—false friend of woe;
"Man is the enemy," he thought;
But Nature proved a fiercer foe.

The vampire sucked, the vulture tore,
And the old dragon left his den,
Agape to taste the thing he wore—
The ragged, bleeding Badge of Men.

"Against the Fates there stood no charm,
For every force takes its own part:
I'll wear a buckler on my arm,
And in my bosom hide my heart."

But in his bosom prisoned fast
It pained him more than when it beat
Upon his sleeve, and so he cast
His trouble to the ghouls to eat.

Back to the city there and then
He ran, and saw, through all disguise,
On every sleeve the Badge of Men;
For truth appears to cruel eyes.

Straight with his sword he laid about,
And hacked and pierced their hearts until
The heaten terror-stricken rout
Begged on their knees to know his will.

He said: "I neither love nor hate;
I would command in everything."
They answer him: "Heartless and great!
Your slaves we are, be you our king!"
—John Davidson, in Saturday Review.

Written for Kansas Farmer.

YOUNG FOLKS IN THE OLD COUNTRY.

BY ANNA MARIE NELLIS.

NUMBER 22.

A GERMAN WEDDING.

As in all civilized countries, people in Germany sometimes "marry and are given in marriage." But I am told that, unlike in the highly civilized country called the United States, there are here very few unmarried people; that is to say, those who have been married by the church and unmarried by the courts.

I had been honored with an invitation to a wedding ceremony in Berlin and made it an especial point to learn all I could concerning the customs pertaining to such matters in the "Fatherland." I was informed that the marriage ceremony was always performed by an official of the civil government and only occasionally was the services of church official required; that among all classes the marriage arrangements were largely conducted by the parents or guardians of the rash individuals who were about to attempt the beating of two hearts into one. Among the wealthy folks the matter of dowry and marriage settlements are of far greater moment than the lightly valued consideration of love and affection. Army officers are not permitted to marry unless they have a private fortune or the bride can have a dowry which will be sufficient to keep them in official style.

It is considered proper form for every couple, when first engaged, to make calls upon their relatives and friends and announce their engagement. This is usually done on the first Sunday after the contract is settled. A girl before she is engaged is a "madchen" or "fraulein," after the engagement she is a "jung-frau," and after the wedding she is just plain "frau."

Every couple about to be married must be "hung out," as it is called here; that is, their application for marital honors, duties and troubles must be placed on file for three weeks in the "Standes-amt"—something like the Probate Judge's office in Kansas, so that if any one knows any reason why the applicants should not marry such one may interpose his objection in a legal manner. The application which must be placed on file tells all about the young folks—who they are, who their fathers and mothers were, and also about grandpa and his ancestors. In this way everything gets started in proper shape before marriage, and I guess that is why there is so little un-marrying in Germany. You see, they can't "marry in haste" and "repent" week after next.

After the "bans" have been "hung out" for three weeks the couple are quietly married at the "Standes-amt," and if desired by either they have a church wedding afterward.

When first engaged it is the custom for each to give the other a plain gold ring, which is then worn on the left hand. At the church wedding they exchange these rings, which are then placed on the right hand, and then they should,

according to custom, always wear them in honor of the occasion. If a man or woman marry a second or third time it will be indicated by two or more plain gold rings which will show on the right hand. This is all right, but no doubt it would be burdensome to the man who should be blessed (or otherwise) with seven or more wives during a long and useful life.

The wedding I attended was celebrated in the "Kaiser Wilhelm Gedächtnisz Kirche." The whole name of this church is usually pronounced when reference is made to it. This church is considered the very finest of the many beautiful churches in Berlin. It is situated on the center of "Augusta Platz" and is at the head of the finest boulevard in Berlin—the "Kurfuersten-Damm," and is but a few blocks from Kleist street, where the party from Kansas reside.

This church is most marvelously constructed of an almost white stone, and was built only a few years ago in memory of the "Old Emperor." It has one very tall spire which can be seen from all parts of the city and five smaller ones. It has five entrances for common people and one for the exclusive use of royalty.

We arrived a little "early" at the church, and while waiting for the bridal procession I took occasion to make a mental memorandum of the interior of this handsome building. There is a balcony around the whole audience room and in the rear is the magnificent pipe organ with its "echo attachment" which has become celebrated in the musical world. My German lady friend whispered to me this historical sketch of it. It is somewhat of a secret and she "didn't want it to go any further."

There is only one other organ in existence like this one, and that is a small one in a little town somewhere in Switzerland, where the inventor lives who conceived the idea of the echo organ, but would not impart the secret of its construction to any one, as he wished to "work a corner" in that kind of musical instrument. People came for miles and miles to hear this wonderful organ and its fame spread even into Berlin, where the big church was waiting for a fine organ, and which church wanted the very best the market could afford. The Berlin authorities desired the Swiss inventor to construct one like his in the Kaiser Wilhelm Gedächtnisz Kirche, but he wasn't ready just then to let his secret of its peculiar attachment be known, so he refused; and the church in Switzerland was locked and closely guarded to keep every one from inspecting its mechanism.

There was a mechanic in Berlin who possessed a remarkable stock of inquisitiveness which enabled him to find out lots of things which his neighbors were never able to fall upon. In this he showed a truly Yankee disposition, and I shall designate him a Yankee Dutchman.

Well, this Yankee Dutchman put some money in his pocket, selected a suitable kit of tools, took paper, pencils and a "dark lantern" and hid himself unto the Swiss town where that famous organ with echo attachment and inventor resided. He timed his arrival to occur early in the night. He found the sexton of the church, and told him he was a pilgrim who wished to pray in that church and desired to stay there all night and he would sleep on the floor in front of the altar when he was wearied with praying. The sexton at first objected, but when the poor pilgrim wept some quite large tears and told how he wanted to pray for his father and mother and several other relatives who had not always been just as good as they could be while on earth, he relented and permitted the pious pilgrim to enter the church, which permission was granted after the same pilgrim had judiciously transferred from his pocket to the sexton's hand the stock of money which he just happened to have with him. The sexton knew it would be all right, for he locked the doors and the pilgrim couldn't carry away the organ, and he would let him out in the morning and no one would be harmed nor any wiser. Then, too, the father and mother and other relatives the pilgrim was going to pray for would likely receive much benefit from the kind permission granted by the sexton; so he felt that he had done a generous deed.

Well, that Yankee Dutchman didn't do a thing to that organ except to go through it in most excellent shape and learn every part of its construction and how to make seventeen more "echo attachments" if they should ever be needed.

The next morning the sexton came bright and early to let the poor pilgrim out. He found him sleeping calmly as a yearling baby in one of the pews and the church was, apparently, in as good repair as ever.

The pilgrim journeyed back to Berlin, and the "Kaiser Wilhelm Gedächtnisz

CANDY
CATHARTIC

Cascarets

CURE CONSTIPATION

10c
25c 50c

REGULATE THE LIVER

ALL
DRUGGISTS

Kirche" had the big "echo attachment" organ built and there it is unto this day. It gives a most enchanting effect after a fine strain of musical notes has been played; the softened sound seems to echo and re-echo through the upper part of the church, until the thought is created that angels, singing, are bearing to heaven the anthems of the choir.

But to return to the church proper. The altar is dome (curved) shape, and has a beautiful statue of the Christ in the center, on an exquisitely carved marble pedestal. At the right of the altar is a beautiful figure of Dr. Luther, and at the left is the Emperor's family box. The royal pew is furnished with dark plush curtains on the side toward the audience, which can be drawn if the persons within do not wish to be gazed at by the congregation. On the opposite side from the Emperor's box are two others—called "loge" here—for princes and minor royalty. These are decorated with representations of the coat of arms of the various families and branches of families. Of course, the Emperor's box has the crown and other insignia of majestic royalty.

While I was noting the appearance of the church, ladies were continually coming in. I noticed only one man in the audience. I asked my German friend why. She laughingly told me that in Germany men rarely attend a church wedding except in the bridal train, or when a near relative is to be married. At this point the big echo organ sounded the wedding march and the bridal party started up the long aisle toward the altar.

Flower girls strewed the pathway with roses, over which the bride and groom walked, followed by a gaily dressed train of ladies and gentlemen in full evening dress. Several army officers in brilliant uniform were with the party. Many of the ladies had long court trains which required lots of floor space for their accommodation.

Two chairs were placed at the altar for the bride and groom and in front of these were the chairs for the attendants and mourning friends. The audience arose when the bridal party entered the church and were seated again when the bride and groom had safely arrived at their stations.

Then the minister appeared and after a short sermon and much advice he repeated the marriage service, after which he gave them their wedding rings, which before had been their engagement rings, and said:

"Wass nun Gott zusammen gefuegt hat, das soll der mench nicht scheiden."

This in English would be:

"What God hath joined together, let no man put asunder."

The bride was Fraulein Selma Gillenthin and she was dressed in a gorgeous white satin robe with an immense train, and wore the "myrtle" in her veil, which indicated that this was her first attempt, as no divorced woman or widow may assume the myrtle at a second marriage.

The groom was Frei-Herr (Baron) von Kleinschmidt-Lengefeldt, and he is also "Majorats-Herr," that is, the head of the family of Kleinschmidt-Lengefeldt, which may contain other Frei-Herrs and smaller fry generally. He is a wealthy man, owning many large landed estates and is also a high officer in the army, and a Ritter (knight).

As the benediction was pronounced by the minister the organist played a beautiful anthem, with the echo attachment, and it truly seemed like a benediction spoken by music. Then the organ pealed out a glorious wedding march and the bridal party returned down the aisle to the entrance, and in our hearts we wished them all the joy that is possible to mortals.

Rates to Omaha.

Railroads More Liberal Than to the World's Fair at Chicago.

Rates and arrangements on account of the Omaha exposition have been completed by the Western Passenger Association lines. The rates are more liberal than those made for the Chicago exposition.

Summer tourist tickets will be sold at 80 per cent. of double locals to Omaha from all sections of the country, with final return limit to November 15.

From all association points east of Colorado a rate of one fare and a third for the round trip will be made from June 1 until October 30, with a thirty-day return limit, provided, however, that in no case the rate from the following points to Omaha shall be less than \$20 from Chicago, \$17 from Peoria, \$17 from St. Louis, \$25 from Colorado common points and \$15.75 from St. Paul and Minneapolis.

For the opening ceremonies a rate of 1 cent a mile will be made from all points within 150 miles of Omaha. From points beyond the 150 mile limit the rate will be one fare for the round trip. All tickets of every character through Omaha, in either direction, will be made good for stop-over at Omaha not to exceed five days. The minimum rate for any round trip ticket is to be 50 cents.

War improves prices of farm products, but torture, death, tears, broken homes and hearts, and enormous sums of money make up the price paid for the improvement.

Wealth honestly acquired and honorably employed needs not to buy legislatures, corrupt courts nor intimidate voters to secure protection for itself.

To help the farmer save his money is as much the province of an agricultural paper as to help him make it by teaching better methods of farming.

A man never gets too old, fat or stiff to jump at a conclusion.

Educate Your Bowels With Cascarets.
Candy Cathartic, cure constipation forever.
10c, 25c. If C. C. C. fail, druggists refund money.

1260 '97 BICYCLES BELOW COST

of making to clear our factory. Sent on approval. Second-hand bicycles, \$5 up. BICYCLE FREE to advertise us. Easy work, no fake. Write for our great offer. COOK CYCLE CO., Factory, 12-26 Franklin St.; Salesrooms, 69-71 Fourth Av., CHICAGO.

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to anyone who will distribute a few of our BIG 2-POUND 999-PAGE 1898 CATALOGUES. We Sell Outright grade '98 GUARANTEED BICYCLES at \$12.00, \$19.75 and \$29.50. YOU DON'T PAY FOR BICYCLE until after you get it. WRITE TO-DAY for SPECIAL \$5.00 OFFER and HANDSOME BICYCLE CATALOGUE. SEARS, ROEBUCK & CO. (Inc.) CHICAGO, ILL. (Sears, Roebuck & Co. are thoroughly reliable.—Editor.)

BICYCLES

At Wholesale Prices. Best seamless tubing. Low crank hangers, any gear desired. M. & W. or Hartford tires. 1898 MODEL. Choice of Bars, Saddle and Pedals. \$17.50 \$21.50 & \$27.50 Fully Guaranteed in every way. AGENTS WANTED. Ref. any bank. Catalogue sent Free. COLUMBIA MAIL ORDER CO., 577 1/2 43rd St., Chicago, Ill.

Mothers! Mothers!! Mothers!!!

MRS. WINSLOW'S SOOTHING SYRUP has been used for over FIFTY YEARS by MILLIONS OF MOTHERS for their CHILDREN while TEETHING, with PERFECT SUCCESS. IT SOOTHES THE CHILD, SOFTENS THE GUMS, ALLAYS ALL PAIN; CURES WIND COLIC, and is the best remedy for DIARRHEA. Sold by Druggists in every part of the world. Be sure and ask for "Mrs. Winslow's Soothing Syrup," and take no other kind. Twenty-five cents a bottle.

They stop work, cost money, give pain.

Sprains and Bruises

It costs little to cure St. Jacobs Oil. It saves time, them right away with money, misery.

KANSAS FARMER

ESTABLISHED IN 1863.

Published Every Thursday by the
KANSAS FARMER COMPANY.

OFFICE:
No. 116 West Sixth Avenue.

SUBSCRIPTION PRICE: ONE DOLLAR A YEAR.

An extra copy free fifty-two weeks for a club of six, at \$1.00 each.
Address **KANSAS FARMER CO., Topeka, Kansas.**

ADVERTISING RATES.

Display advertising, 15 cents per line, agate (fourteen lines to the inch).
Special reading notices, 25 cents per line.
Business cards or miscellaneous advertisements will be received from reliable advertisers at the rate of \$5.00 per line for one year.
Annual cards in the Breeders' Directory, consisting of four lines or less, for \$15.00 per year, including a copy of KANSAS FARMER free.
Electros must have metal base.
Objectionable advertisements or orders from unreliable advertisers, when such is known to be the case, will not be accepted at any price.
To insure prompt publication of an advertisement, send cash with the order; however, monthly or quarterly payments may be arranged by parties who are well known to the publishers, or when acceptable references are given.
All advertising intended for the current week should reach this office not later than Monday.
Every advertiser will receive a copy of the paper free during the publication of the advertisement.
Address all orders—
KANSAS FARMER CO., Topeka, Kas.

The management of the Ottawa Chautauqua promises that the twentieth annual session, June 13 to 24, inclusive, will present the grandest program in the history of this great summer meeting. There will be twenty-five or thirty grand lectures by eminent persons, the women's conferences, normal and temperance work, musical advantages, a grand department of art, etc., which will go to make up eleven days of profit and pleasure for those who attend.

The March quarterly report of the Kansas State Board of Agriculture appeared this week. Its special title is "The Plow, Cow and Steer," and it is devoted to soil and crop culture as found most suitable in Kansas, together with information as to better utilizing the cow and her product, the more profitable production of beef, wool, mutton and poultry, and a higher order of home-making. It also contains papers, addresses and discussions at the board's twenty-seventh annual meeting, January 12-14. To say that this report is up to the high standard established by Secretary Coburn is high praise, but not too high for the 200 pages which may be had for the asking and 5 cents to pay postage.

Profitable Agriculture.

[Introductory to the March Quarterly Report of the Kansas State Board of Agriculture, entitled "The Plow, Cow and Steer."]

The Kansas Department of Agriculture has endeavored to keep conspicuously advanced the idea that by a better cultivation of the soil and its crops of grass and grain the people could improve in quantity and quality their animal productions, from which their principal revenues are to be derived. This has proven so acceptable that the largest editions of the board's reports deemed permissible (by those upon whom the allotment of the State's printing fund devolves) were in each instance entirely inadequate for supplying the always importunate demand. This has been found especially true of the board's publications devoted to corn culture, and the beef and dairy interests, which were early distributed to our citizens who had first applied for them. To respond in some measure to the hourly requests for information along the same lines, and as supplementary to what has before been issued, this volume is compiled, with the intention of practical helpfulness to those who produce our more important staples.

Kansas farmers are learning year by year that their business, if profitable, must be so conducted that it is not the mere playing of a game of chance with the weather or with a single crop; that a somewhat diversified, and yet not too scattering, agriculture, and a studying of and adaptation to climatic conditions, the demands, and the markets, are essential (not more, perhaps, but as much) in Kansas, as elsewhere. Those who most fully recognize these conditions and most intelligently respond to their inexorable requirements are realizing a fair or large prosperity. Others who persistently defy or deny them are ready to declare that farming is no longer a source of profit, that farmers are slaves of those in other pursuits, and that the times are politically, financially and morally out of joint. Although no vocation is all pleasure or all profit, the men who conduct the business of farming with the same energy and skill as

the successful merchant or professional man will reap the same and, as a rule, a greater and more certain measure of reward; the time has passed, however, if it ever existed, when fortunes were made by unskilled owners of farms, large or small, anywhere. Convincing proof of either proposition can be found in almost any one of the 105 counties of Kansas.

Muscle, to win, must be lubricated with brains.
F. D. COBURN,
Secretary.

SPAIN MUST GET OUT OF CUBA.

The following joint resolution was passed by the Senate and House of Representatives of the United States at 1:30 a. m. on Tuesday, April 18, 1898:

"Joint resolution for the recognition of the independence of the people of Cuba, demanding that the government of Spain relinquish its authority and government in the island of Cuba and to withdraw its land and naval forces from Cuba and Cuban waters, and directing the President of the United States to use the land and naval forces of the United States to carry these resolutions into effect:

"Whereas, The abhorrent conditions which have existed for more than three years in the island of Cuba, so near our own borders, have shocked the moral sense of the people of the United States, have been a disgrace to Christian civilization, culminating, as they have, in the destruction of a United States battleship and 266 of its officers and crew while on a friendly visit in the harbor of Havana, and cannot longer be endured, as has been set forth by the President of the United States in his message to Congress of April 11, 1898, upon which the action of Congress was invited; therefore

"Resolved, By the Senate and House of Representatives of the United States of America in Congress assembled:

"First—That the people of the island of Cuba are and of right ought to be free and independent.

"Second—That it is the duty of the United States to demand and the government of the United States does hereby demand that the government of Spain at once relinquish its authority and government in the island of Cuba and withdraw its land and naval forces from Cuba and Cuban waters.

"Third—That the President of the United States be, and he hereby is, directed and empowered to use the entire land and naval forces of the United States and to call into the actual service of the United States the militia of the several States to such extent as may be necessary to carry these resolutions into effect.

"Fourth—That the United States hereby disclaims any disposition or intention to exercise sovereignty, jurisdiction or control over said island except for the pacification thereof, and asserts its determination when that is accomplished to leave the government and control of the island to its people."

WAR'S EFFECT ON PRICES.

Many speculations have been indulged as to the effect of war—which many consider certain to be upon us quickly—upon prices of staple farm products. There are several factors, each of which will influence prices, and the resultant effect of all will determine the market.

The influence which is just now most apparent is the anxiety of our friends over the water about the regular and liberal replenishment of their flour barrels. Europe, including the British Isles—and especially the British Isles—never produces breadstuffs enough for current needs. At the present time the meal chests of some of them contain but a few weeks' supply.

The prospect of war has already raised marine insurance rates, thereby adding to the cost of laying down American products on the other side. John Bull is especially averse to a prospective empty stomach, and is, doubtless, doing a little at filling his grain bins, although the amount of grain he is buying is not greatly in excess of his daily needs.

This European anxiety about the future may be put down as a factor in the advances in prices of grains noticed last week.

A counter influence is the disposition, which is especially strong further east, to hoard money for the purpose of purchasing some of the expected issue of government bonds which it is there thought will be one of the first "beneficent" (?) results of the anticipated war. It is stated that in many parts of the East the banks are contracting their loans to be in position to purchase bonds as soon as they shall become available, and that many heavy depositors are withdrawing their bank balances, expecting a

liberal issue of bonds and that they will be sold cheap, but will rapidly advance after the close of the war which, it is expected, will be of brief duration.

This present and prospective withdrawal of money from the channels of trade doubtless acts as a counter influence against the advance in prices of food supplies which the brisk foreign demand stimulates.

The government's expenditures thus far in its preparations for war have been largely in the purchase of foreign ships and other munitions of war. In case of active war and the calling of a large army into service the expenditures will be large for provisions and clothing for the soldiers, so that from whatever source the money is raised, whether from the sale of bonds or from immediate taxation, it must go speedily into the hands of the people again and a very considerable proportion of it will return to the producers of food—to the farmers of the West. The waste and destruction of food by an army results in the necessity of very much larger supplies than are consumed by these same men when following the occupations of peace. The greater demand thus created for farm products has been so universal as the result of great wars that farmers have learned to anticipate higher prices for both food and fiber supplies whenever a war breaks out in any part of the world.

He would be a monster, indeed, who would invite war that he might profit from such a dire misfortune, but in reckoning the effects of the anticipated event the farmer need not anticipate immediate depression of prices of things he has to sell as one of them.

The supposed prospect of bonds has worked a considerable reversal of the opinions in some financial circles as to the entire Cuban-Spanish-American complications, and some of the losses from the recent depreciation in shares in corporations are—there seems to be some anticipation—to be made up by profits on government bonds. On this account some of the influences which a few weeks ago were strongly—almost violently—for peace, and peace at any price, are now showing a disposition to acquiesce in or even to encourage the impulse to war.

MIGRATION OF MANUFACTORIES.

The growth of cotton manufacturing in the Southern States has introduced elements of such strong competition with the mills of New England that the manufacturers of Massachusetts have appealed by a strong memorial to the Massachusetts Legislature asking that cotton mill machinery be exempted from taxation and that the number of hours constituting a day's labor be increased.

Simultaneously with this comes a cry from the woolen manufacturers of the East that the cancellations of orders for goods are assuming such proportions as are becoming unbearable.

A third lamentation comes from England, whose textile industries are said to be suffering greatly on account of curtailments of orders from the United States resulting from the barrier to importation erected by the present tariff laws in this country. It is apprehended in New England, however, that English manufacturers are preparing to make prices which will give their goods a strong position in American markets even over the obstruction of the Dingley law. The Cotton and Wool Reporter, of Boston, has it from its Leeds correspondent that a beaver cloth is being produced there "twenty-eight ounces per yard, which was being offered at 1s. (25 cents) per yard, fifty-four inches wide, and as strong as a board." The correspondent remarks that such cloth "would sell like hot cakes in America at 50 or 60 cents per yard."

The farmer who sends his wheat to his brother over the sea and is obliged to bring the money to this side and buy cloth at 50 to 60 cents per yard instead of buying the same cloth at 25 cents per yard from the man who bought and ate his wheat, may have some difficulty in realizing the beauties of this situation.

But it is doubtless true that New England is losing her hold upon the textile industries of this country. The conditions for manufacturing cotton in the regions where it grows are even more favorable than among the hills of Massachusetts. The conditions for manufacturing woollens in the agricultural regions of the West are not surpassed by those around Boston. The final adjustment of industries in harmony with the full development of the country will plant the manufactory beside the food and fiber producer and the fuel supply or other source of power. This final adjustment is in progress and will continue in progress for many years to come. The old manufacturing centers can no longer look for

the profits they received from the partially developed settlements of the advancing frontier. The frontier has vanished and the diversification of industries is in progress in the regions over which the frontier has moved. New England will probably lose her cotton and woolen industries as she lost her iron furnaces to the South and the West. How long Great Britain can maintain her grasp on manufacturing is an unsolved riddle. If she can make cloth at less than half what New England considers calamitous prices she has earned another tribute to her pluck and genius. But what England discovers America soon learns. Her newly-perfected processes of converting raw fibers into finished cloth with trifling addition to the cost per pound will be utilized in factories on this side. But where will they be located?

Gossip About Stock.

The Deer Park farm of pure-bred Jersey cattle and Poland-China swine, of Topeka, will hold, about the middle of May, a public sale of fifty head of pure-bred Poland-China swine and fifty head of Jersey females, pure-bred and high-grade. Detailed announcement will appear later in Kansas Farmer.

Our advertiser, the Zenner-Raymond Disinfectant Co., of Detroit, Mich., has the following Kansas reports: Simmons Bros., at Nashville, Kas.: "We used Zenoleum here last spring for screw worms caused by dehorning in warm weather. We found it excellent. We will continue its use for similar purposes." Arthur Baty & Son, of Bartlett, Kas.: "Last spring our sheep were actually covered with ticks. We dipped them in Zenoleum and have found no ticks since. Zenoleum has given perfect satisfaction."

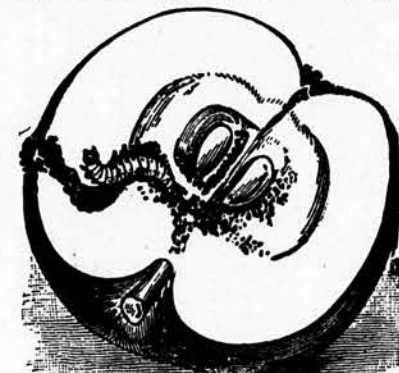
A great deal has been heard about the wonderful public sales of Hereford cattle in Kansas and elsewhere this year, but the private sales, especially in this State, as noted through the Kansas Farmer, have been equally important. The latest remarkable private sale was from Sunrise stock farm by C. A. Stannard, of Hope, Dickinson county, who recently sold at private sale a number of pure-bred yearling Hereford bulls and heifers to John Scharbauer, Ft. Worth, Texas, for the snug sum of \$10,225, probably the largest individual sale ever made in the West. It will be remembered that last year Mr. Stannard went back East and visited the best herds, making some very extensive purchases which included the most noted prize-winners at the New York and other leading fairs.

Before the people knew as much as they know now hens had to be set in the right sign of the moon if they were to hatch well, though we could never understand why the unlucky number of thirteen eggs was thought to be the right-sized nest full. "The evil eye" was responsible for pretty much all the ills that flesh is heir to. Bacteria and germs had not been heard of. But we advance in knowledge and the adoption of the germ theory of disease is one of the most important steps that science has taken. If the germs are destroyed then disease takes its departure. One of the most successful germ destroyers for all purposes is undoubtedly Chloronaphtholeum, manufactured by West Disinfecting Co., of New York. It will eradicate scab, screw worm and foot rot in sheep, lice and cholera in the chicken yard, foul odors in the cellar, and in fact all the germ diseases with which animals suffer.

Spraying Eruit Trees.

The question of spraying fruit trees to prevent the depredations of insect pests and fungus diseases is no longer an experiment, but a necessity.

Our readers will do well to write to



Wm. Stahl, Quincy, Ill., and get his catalogue describing twenty-one styles of spraying outfits and full treatise on spraying the different fruit and vegetable crops, which may be had for the asking, and contains much valuable information.

APPRECIATED EVERYWHERE.

The agricultural products of Kansas have not been the prime factors in attracting settlers to its fertile prairies, but the conservative and thorough advertising given the State's agricultural capabilities by its earnest and honest Secretary of the Board of Agriculture—F. D. Coburn, says the American Elevator and Grain Trade, of Chicago. His reports have not been filled with extravagant statements; they contain plain records of facts. The reports issued from his office always bear the marks of intelligent direction and an honest purpose to give out only the truth.

Editors have taken kindly to Mr. Coburn's reports, and voluntarily given him great assistance in advertising the State and its products; they have found Mr. Coburn always courteous and anxious to do everything in his power to assist them in obtaining information regarding the State's products; they have found his reports reliable and so conveniently arranged that it has been easy for them to get at the information desired. Mr. Coburn's newspaper experience gave him an insight into how he, as Secretary of the Kansas State Board of Agriculture, could serve the press of the country and at the same time have the press serve him, and he has carried out his work with persistence, tact and good judgment that have resulted in invaluable benefit to Kansas.

The State owes much to Secretary Coburn, and the people seem to appreciate it. The popular demand from all sides is that he shall accept the Governorship and serve the State in a position where he will have greater opportunities to advance its interests.

Poultry Management.

Editor Kansas Farmer:—It is always best so far as possible to keep the hens free from lice in order to prevent their getting on the chickens. Dusting with insect powder is one of the best means of doing this. But if lice get on the little chickens, about the only plan of treatment is to treat each one individually. Put a little melted lard on the head, under each wing and at the vent. Care must be taken to use only a small quantity, as too much will kill little fowls. If the little chickens appear droopy and fail to thrive as they should, look out for lice the first thing.

The hatching should be crowded from now on until the early part of June. Eggs are cheap now and it will be more profitable if proper care is taken to hatch them than to sell them. On the farm chickens, or in fact poultry of any kind, can be raised during the summer at a low cost. It costs no more to grow a pound of poultry meat in summer than it does a pound of pork where the poultry can be given the range of the farm, and it is an exceptional case when the poultry will not bring a higher price.

As fast as the chickens reach a marketable size they should be marketed. In nearly all cases, for a while, at least, young poultry sell at higher prices than matured fowls will in the fall. This is especially the case with the cockerel. It may be best to keep a few of the best pullets for next winter layers, but all others should be marketed as fast as they can be got into a marketable condition.

While after young turkeys are reasonably well feathered it is always best to allow them a free range, at the same time it is usually best to keep on feeding them regularly. While they will be able to pick up a good part of their own living, yet it is quite an item to push the growth, and this can only be done by liberal feeding. Like all other stock intended for meat, quick growth and early maturity are essential to securing the best profit. By feeding regularly another object is also gained, and that is they are kept more gentle and will be apt to come home more regularly. If no care is taken to feed well they will get into the habit of straying away, and there is always an increased risk of loss if they get into this habit of straying away. Turkeys are good foragers, and if they are given a light feed of grain night and morning can be kept growing rapidly.

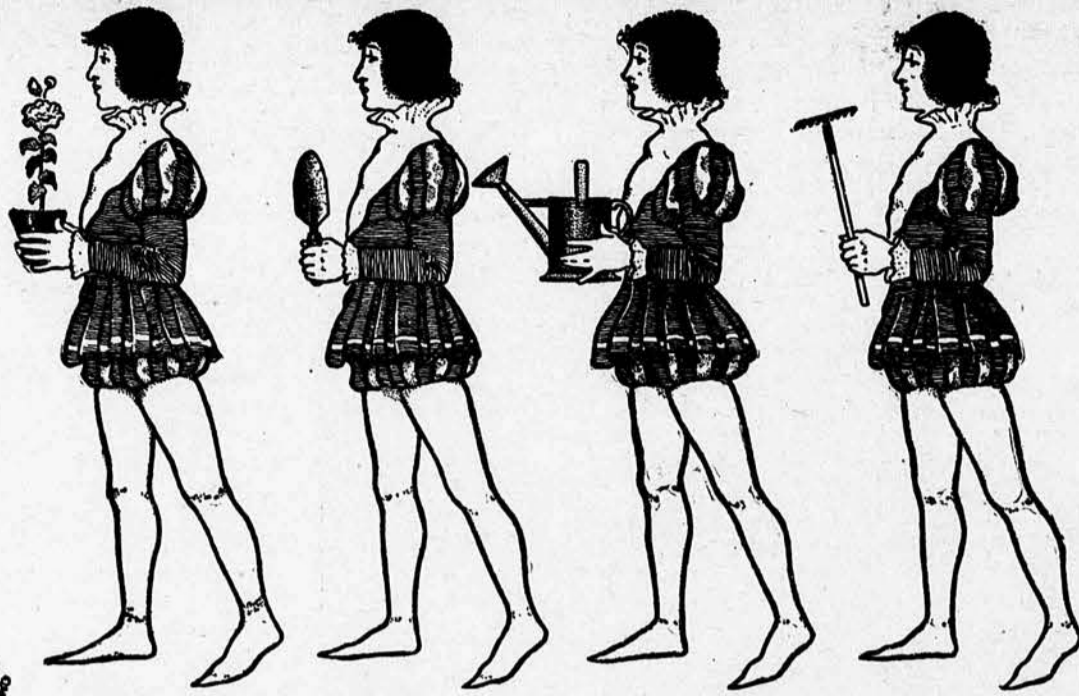
N. J. SHEPHERD.

Eldon, Mo.

Publishers' Paragraphs.

OUR SEWING MACHINE.—A subscriber at St. John, Kas., writes: "The Kansas Farmer sewing machine bought of you was received all right and gives perfect satisfaction in every way. We think it as good as the best and we think we saved \$15 by buying of you."

"Red cedars are exhausted." Mr. A. W. Themanon, of Wathena, Kas., who has been advertising evergreens in the Kansas Farmer, writes that he has had a



Four Flower Pages:

VIOLET-GROWING AS A WOMAN'S TRADE
SHADY NOOKS FOR SUMMER DAYS
UNIQUE FLOWER STANDS AND POTS
THE REVIVAL OF THE OLD-FASHIONED FLOWERS

will be among the Special Features in the

Easter Ladies' Home Journal

Enlarged to 48 pages—this number is, we think, quite the best we have ever issued—filled with special features of practical worth to every reader—and with a wealth of handsome illustrations.

FOR 25 CENTS WE WILL SEND
THE LADIES' HOME JOURNAL
ON TRIAL FOR THREE MONTHS

ALSO, a handsome illustrated booklet containing our Prospectus for 1898, with portraits of famous writers and small reproductions of some of the illustrations that are to appear in the Journal in future numbers.

\$1.00 per Year

10 cts. a Copy

The Curtis Publishing Company, Philadelphia

splendid trade as a result, but desires us to state that he is entirely sold out of red cedar trees but has plenty of other varieties.

A FAMOUS HOG PICTURE FREE.—In this issue will be found a greatly reduced engraving of the justly famous colored lithograph entitled "16 Pigs to One Sow," which is issued by the International Food Co., of Minneapolis, Minn., and advertising their great preparation for hogs, "International Stock Food." This lithograph is attracting the universal attention of swine raisers, and every one of our readers can have one free of all cost. They are 21x28 inches in size and are lithographed in six brilliant colors. International Food Co. informs us that they will mail, postage prepaid, one of these large, finely-colored lithographs free to any one who answers their advertisement which is printed in this issue. Every one interested in swine raising should write them at once.

A GREAT WAR BOOK.—One of the most noticeable books of the times is "Our Country in War and Our Relations With Foreign Nations," by Murat Halstead, the great war correspondent and editor, published by the National Educational Union, Chicago. It is a graphic review of our army, navy and coast defenses, our relations with Spain, Cuba and all foreign nations. It compares Spain and the United States, describes the Spanish army, navy and coast defenses, and tells of their strength and weakness. The author carefully analyses our relations with all the nations of the earth and their probable action in our fight with Spain. The history of Cuba is told in a vivid and interesting way. Perhaps no living man could write a book like this so well as Murat Halstead, whose work as a war correspondent in Cuba, in the Civil war, in the Franco-Prussian war; whose friendship for such men as Bismarck, Von Moltke, Grant, Sherman, Lee, McKinley and scores of other statesmen and generals, and whose

wide experience as a journalist have peculiarly fitted him for this work. The book is certainly right up to date and contains the information the people now want.

Fasting and Prayer.

"We have been talking over the war-time days of fasting and prayer."

During the war they were Illinois girls. Their tearful eyes were evidence that they had been deeply impressed by the old memories. If those two women were so impressed—had been interested in recalling the striking events—why may not the Times-Herald readers be interested? So I reasoned, and then began to question the two women—not girls now, but lovelier. About the third question reopened the tear fountains; they stopped answering, and I called upon a daughter of one of them to play "When Johnny Comes Marching Home," to follow with "Dixie." The music produced hysterics, and my enterprise terminated for that occasion. At lunch that day one of them said: "I'll write a description. I simply cannot talk with you about those days." She kept her word. Here is her description. Do you wonder that she could not talk on the subject?

"I was a girl in my early teens when the war came, but some of my memories of that time are very clear, and there is one of which I seldom speak, because the very thought of it stirs my heart, and to talk of it brings the tears. Never can I forget how I was impressed by the days of fasting and prayer proclaimed by Mr. Lincoln in the dark days of our country's peril. Though born and reared in Illinois, I was brought up with a New Englander's regard for the Sabbath, and it was always a holy day to me, but I have never known a Sabbath so solemn, so filled with awe as one of those days of fasting and prayer. It was a quiet day, as if nature herself mourned. The leaves hung motionless on the trees, and the very sunlight, I remember, impressed me

strangely as it came in through the open door and windows and lay in white patches on the floor. My home was with my guardian's family, and they, with their youngest son in what was called the 'Bloody Nineteenth Illinois,' kept the day sorrowfully. It was as if one lay dead in the house. My guardian did not go to his place of business, but spent the greater part of the day with the big family Bible open before him; and the mother went into her room and closed the door. No work was done about the house. The table was not spread for breakfast nor for dinner. I was told to get something for myself if I wished. But I could not eat; the food seemed to choke me; neither could I play. I looked out to my playhouse under the trees, but should sooner have thought of going there on Sunday. So I sat still looking curiously at my guardian as he turned the leaves of the Bible, or at the door of the room beyond which I knew my guardian's wife wept and prayed.

"Out on the street and over the town the same silence rested. No open stores, no whistles from the mills, no whirr of machinery, no playing of children in the yards, nothing but oppressive silence until the church bells called the people together for public service, and quiet groups went along the street to their places of worship.

"All day the silence rested over our home, and as I look back over the years into the room where I sat that day something of the same awe fills my soul, and there is the same old choking feeling in my throat, and I am a girl again, listening breathlessly to the news from the battlefield, or to the prayer to God to care for our soldier boys and to 'save the Union.'"—J. A. Watrous, in Chicago Inter Ocean.

When your chicks are hatched, give them plenty of fresh air and exercise, and keep them growing from the start.

Send \$1.25 for Kansas Farmer one year and book, "Samantha at Saratoga."

Horticulture.

APPLE TREE TENT CATERPILLAR.
(*Clisiocampa Americana* Harris.)

From Bulletin No. 77, by Profs. E. E. Faville and Percival J. Parrott, of Kansas Agricultural College Experiment Station.

Among the insects found in the orchard none make their presence more noticeable than the tent caterpillar by its large, white webs which are stretched in the angles formed by branching twigs and limbs. (See Fig. 11.) In these tents, which are the work of the entire colony, the larvae pass their time when not feeding, particularly at night and during inclement weather. There are other species of tent caterpillars confined to certain districts, the one most common being *Clisiocampa Americana*. The trees upon which they are usually found are the apple, cherry and plum; they are occasionally found feeding and spinning their webs upon the willow, poplar and oak,

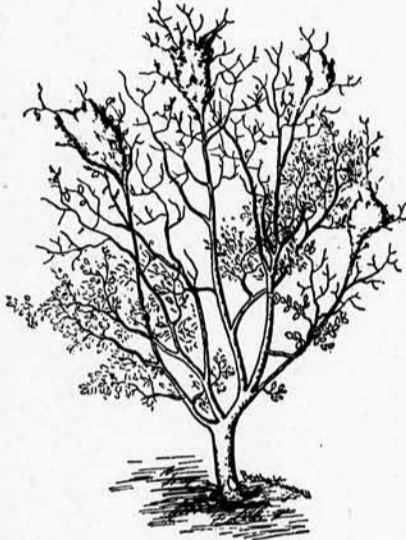


FIG. 11.

Tree showing work and webs of tent caterpillar.

which they defoliate. The insect has been quite prevalent during the last few years in Kansas, spreading into different counties. Since the insect is easy to combat the spread of the pest may be said to be due largely to negligence. If the caterpillars are left unmolested, they enlarge their web rapidly until large limbs become completely covered and defoliated. The moths appear in June, depositing eggs in clusters encircling the smaller twigs, containing from two to three hundred eggs in each cluster. The eggs are small, a little over one-twentieth of an inch in length, nearly conical in shape, often covered with a sort of varnish or glue almost enclosing them, holding them firmly together, and rendering them impervious to rain and moisture. The eggs do not hatch until the following spring, hence the above provision. During the warm days of April and May the larvae emerge from the egg masses, passing to the tender buds and leaves, where they begin their work of devastation. The full-grown larvae (Fig. 12) or caterpillars are nearly two inches in length, black, with light colored tufts on back, down the center of which there is present an almost continued white line, bordered by a number of interrupted, longitudinal yellowish lines. The sides of the body are covered with lighter margins which are spotted with pale



FIG. 12. Caterpillar.

blue; the under surface of the body is black. The larvae issuing from the same mass of eggs occupy a common web and contribute their share to the formation of a common tent. The substance of which the tent or web nest is composed is a gummy substance which is secreted by glands just back of the mouth. As soon as it is exposed to the air it dries and hardens. Immediately after they hatch they begin to spin for the formation of a common tent (Fig. 13); and wherever they are, they extend a thread by the accumulation of which the tree or limb is soon covered. An interesting feature in connection with the larvae is their regularity in feeding—usually appearing out of their tents once in the morning and once in the afternoon. The larvae are very voracious, and when present in considerable numbers often denude a tree of its foliage, leaving nothing whatever of the leaves except the larger veins and mid-ribs, often rendering the tree as bare of foliage as it is in winter. The duration of the larvae is from four to five weeks, passing through four moults. When full growth is acquired, they leave the tree upon which they have

been feeding and depart in all directions in search of a sheltered place in which to spin their cocoons—generally selecting crevices in bark, fence posts and rubbish piles—in fact, wherever opportunities afford. Cocoons (Fig. 14) are oval and elongated, having an outer silk web, which with its long, loosely woven threads gives the cocoon a very delicate appearance; the inner coat is closer and

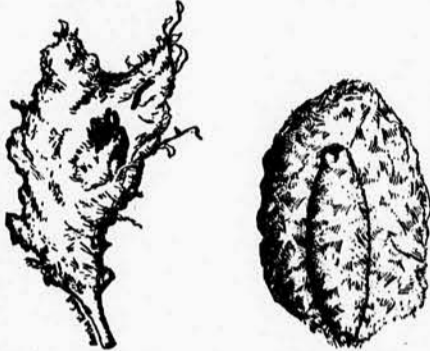


FIG. 13. Tent with larvae.

FIG. 14. Pupa.

firmer in texture. In about three weeks the moth appears (Fig. 15), having an expanse of wings of one and one-half inches (female); the male is slightly smaller. The moths are highly variable in color, varying from a yellowish to a reddish brown. The front wings contain two oblique, transverse whitish lines, dividing the wings into nearly three equal divisions. The moths are nocturnal and are often found flying in large numbers during the last half of June and early part of July. The moths do not feed, and after copulation the female deposits her eggs and dies.

REMEDIES.

The attacks on the mature larvae of a certain bacterial disease, together with a number of birds common to the State which feed upon the larvae, are natural aids in their destruction. During the bright days of winter and spring the egg masses are easily detected on young twigs, which should be cut off and burned. The insects are so open to attack that there can hardly be any excuse for neglecting to destroy them. Since they cluster in their tents at night and rarely depart to feed before 9 o'clock in the morning, the proper time to destroy them is during the clustering period. This may be done by taking a forked stick and twisting the larvae and web all up together. Other methods may be employed; in some instances gloved hands may be used.



FIG. 15. Adult.

Burning with a flame from a ball of cotton soaked in kerosene is often employed. There is, however, danger of injuring the branches by excessive heat. The best remedy is to spray the foliage in the vicinity of the web with arsenite solutions. In spraying for codling moth and other obnoxious leaf-eating insects we apply sufficient poison to rid the orchard of this pest as well.

The Use of Paris Green.

Editor Kansas Farmer:—Paris green has so long been used for the destruction of insects that we might fairly be supposed to know all about its use by this time. But from time to time new facts are discovered with regard to it, each one of which makes us better able to use it intelligently. The prevalence of the canker worm the present season will perhaps make a short discussion on this subject of interest to the readers of the Kansas Farmer.

The first requisite of success is that we shall have pure Paris green, for spraying with an impure article means not only a loss of time and labor, but what is much more important, it means that our enemies may gain such a start of us that we shall be unable to destroy them. But the Paris green may be tested when bought and thus all this annoyance avoided. A simple and reliable test is the following: Put into a small glass bottle a little strong ammonia and into this put a little of the material to be tested. If it is pure Paris green it will quickly and completely dissolve, forming a clear, dark blue liquid. But any of the substances, such as chrome green, which are ordinarily used to adulterate Paris green, will not dissolve. Any residue may be considered as an impurity.

And now a word as to the application of Paris green to fruit trees. It is to be feared that too many orchardists in their zeal to be thorough defeat their own ends by the application of too much of the material. This may depend some-

- ARMSTRONG & McRELVEY Pittsburgh.
- BEYMER-BAUMAN Pittsburgh.
- DAVIS-CHAMBERS Pittsburgh.
- FAHNESTOCK Pittsburgh.
- ANCHOR Cincinnati.
- EOKSTEIN Cincinnati.
- ATLANTIC New York.
- BRADLEY New York.
- BROOKLYN New York.
- JEWETT New York.
- ULSTER New York.
- UNION New York.
- SOUTHERN Chicago.
- SHIPMAN Chicago.
- COLLIER Chicago.
- MISSOURI St. Louis.
- RED SEAL St. Louis.
- SOUTHERN St. Louis.
- JOHN T. LEWIS & BROS CO Philadelphia.
- MORLEY Cleveland.
- SALEM Salem, Mass.
- CORNELL Buffalo.
- KENTUCKY Louisville.

NOTWITHSTANDING the extravagant assertions of the manufacturers making White Lead by quick process, comparative painting tests, carefully and honestly made, show that Pure White Lead made by the "old Dutch process" will cover more surface and cover it better than White Lead made by the quick or so-called "up-to-date" process.

FREE By using National Lead Co.'s Pure White Lead Tinting Colors, any desired shade is readily obtained. Pamphlet giving valuable information and card showing samples of colors free; also folder showing picture of house painted in different designs or various styles or combinations of shades forwarded upon application to those intending to paint.

National Lead Co., 100 William St., New York.

what on the insect we are fighting; but if it is the canker worm we are endeavoring to destroy, or any other insect which feeds upon the leaves, then our object should be to distribute the poison to all parts of the tree, and on both surfaces of the leaves. To accomplish this we must first have a very fine spray which will float for some time in the air about the tree, enveloping the parts in a sort of mist, the particles of which will reach every part of the tree, and secondly, we must apply only enough of this spray to thoroughly moisten the parts of the tree. If it is applied so freely that it drips from the leaves, then the Paris green, being heavier than water, accumulates in the drops at the points of the leaves and falls with them to the ground. And again, if the poison does not collect in sufficiently large drops to fall it may easily accumulate to such an extent as to injure the foliage, when if it had remained evenly distributed no damage whatever would have been done.

The addition of a little lime to the Paris green, perhaps twice as much in weight, will usually prevent any injury to the foliage of the plants sprayed, and does not in the least impair the efficiency of the poison. F. C. SEARS, Nova Scotia School of Agriculture, Wolfville, Nova Scotia.

Missouri State Horticultural Society.

Editor Kansas Farmer:—The summer meeting of the Missouri State Horticultural Society will be held in West Plains, June 7, 8 and 9, 1898. All persons interested in fruit-growing are invited to be present. Papers will be presented on small fruits, peaches, diseases, insects, marketing and ornamental gardening. Discussion on practical topics in fruit-growing, experiences of the fruit men of the State, lessons from the results of past year; these will give us plenty to do during the session. Some topics will be treated in a scientific manner by our members from the agricultural college and others, in a practical manner by our fruit-growers.

Papers, advice, suggestions and names will be acceptable from the horticulturists of the State in the preparation of the program, which is now under way.

Railroads and hotels will give rates. The people of West Plains will make every effort to have the members feel at home, and the fruit interests of the

Ozarks will assure a most successful meeting.

Prepare to meet with us and get from the experience of others what it costs so much to get for ourselves.

L. A. GOODMAN, Secretary, Westport, Mo., April 14.

It is amazing that men can rejoice, become hilarious and happy, in fact, over a prospect of war. Such men surely know nothing of the demon they are welcoming.

Horse stealing is becoming quite an active industry again; a sure evidence of an improvement in the interest.

No-To-Bac for Fifty Cents. Guaranteed tobacco habit cure, makes weak men strong, blood pure. 50c, \$1. All druggists.

ARTICHOKES No. 1 for all Stock, Before you buy send for ESSAY on kinds yield (often 1000 b.p.s.) with prices and rates to all points FREE. Sin. bu. \$1. J. P. VISEKING, Box 55, ALTON, Ill.

PEACH TREES 4 to 6 ft. at 2c.; 3 to 4 ft. at 1 1/2c.; all 1 year from bud, healthy and thrifty, no scale. Official certificate accompanies each shipment. Sample by express if wanted. Can ship any time. Trees kept dormant till May 10. R. S. JOHNSTON, Box 17, Stockley, Delaware.

I am fishing for orders for **EVERGREEN TREES**, three transplanted, from one to five feet in height, price 10 to 30 cents each. No fall-dug, root-dried stock. Send for price list. A. W. THEMANSOON, Successor to Hatch & Themanson, Wathena, Doniphan Co., Kansas.

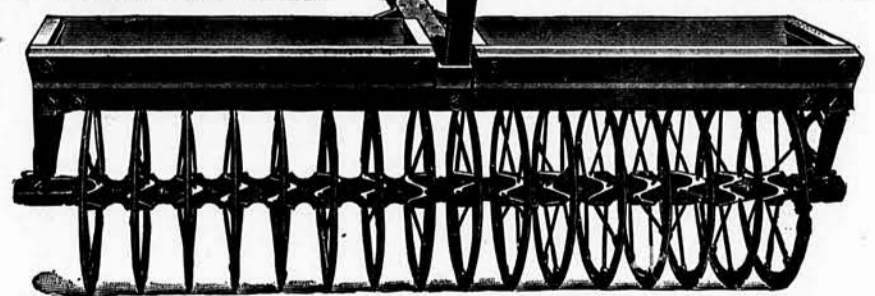
TESTED • SEED • CORN. Send five 1-cent stamps for three sample packages of the best varieties of corn grown, and book, "Hints on Corn Growing, and How the Up-to-date Farmer Grows the Big Crops." The Iowa Agricultural College grew 94 bushels per acre of this corn, which gave 62 pounds of shelled corn from 70 pounds of ears. PLEASANT VALLEY SEED CORN FARM, J. B. ARMSTRONG, Proprietor, SHENANDOAH, IOWA.

INSECTS Will not touch trees treated with VITA-NOVA. One dollar's worth treats twenty-five trees; lasts four years. J. WILLIAMS BROS., Danville, Pa.

CAMPBELL'S SUB-SURFACE PACKER

This machine might Reasonably be called **A RAIN MAKER.**

WHY? Because through its use all the natural moisture of the soil is retained for the use of the crop.



When the soil is packed and prepared with this machine the moisture does not escape into the air but is held in store for the use of the plant. Use this machine and you need not care whether it rains or not. There is moisture enough in the soil naturally to grow a crop if you can preserve it. **This machine preserves the moisture.** They are made in 2 and 4 horse sizes. Write for THE CAMPBELL METHOD OF TILLAGE and catalogue of "Ottawa" Cylinder Dustless Shellers, "Ottawa" Farm Wagons and full line of Corn Cultivating Tools. Sent free to any address. **KING & HAMILTON COMPANY, OTTAWA, ILLINOIS.**

In the Dairy.

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

OFFICIAL ANSWERS

Put to Buttermakers' Class at Topeka Convention.

The examination of the Buttermakers' Class at the Topeka convention attracted so much interest and attention that we give a full report of the questions and their answers.

Question 1—In taking sample of buttermilk for testing, should it be taken from the first or last?

From both.

Question 2—When should sample for testing for composite test be taken—before or after weighing?

Before, just as soon as the milk is put into the can.

Question 3—What is the maximum amount of coal which should be used per hour to produce one horse power?

From six to eight pounds with good soft coal for ordinary creamery boiler, depending somewhat upon construction of boiler, kind of grates used and draft. Some marine boilers go down as low as three pounds per horse power per hour. (Not a good question.)

Question 4—How often do you wash the boiler and keep off scale?

Once in two weeks, or oftener if water is poor.

Question 5—What is the acidity of properly ripened cream?

.55 to .68, depending somewhat on amount of fat in cream. Thin cream has more milk serum, so can develop more acid without injuring the flavor.

Question 6—Do you favor a slow or a quick ripening, and why?

Quick ripening is more favorable to the growth of lactic acid germs.

Question 7—Give the per cent. of fat in buttermilk which you consider average clean churning.

.03 to .05.

Question 8—At what temperature should cream be separated in winter and in summer to produce the best results?

First, 80° F. to 90° F.; second, 75° F. to 85° F.

Question 9—Is there any advantage in working butter twice?

Yes.

Question 10—As cream bottles of Babcock testers are only graduated to 30 per cent., how would you test cream which contains 40 per cent. or more of fat?

By taking a portion of the cream and dividing 17.5cc. in two or three equal parts, or using a smaller pipette.

Question 11—Is it economy to take live steam from the boiler to heat water before pumping it into the boiler?

No.

Question 12—If you should forget to color the cream and the butter came white, what would you do?

Put the color in the salt.

Question 13—Should the flesh side or the hair side of a belt be next the pulley, and why?

The hairy side, because it affords more surface friction; and second, is not so apt to crack.

Question 14—What do you consider clean skimming?

.02 to .03 of 1 per cent. The less the better.

Question 15—What is the better method—to leave the fire under the boiler undisturbed for a reasonable time or to keep it agitated?

To leave it undisturbed.

Question 16—What is the proper temperature for ripening cream?

Sixty-five degrees F. to 70° in summer and 70° to 75° in winter.

Question 17—What do you use for a starter?

Skim-milk. Select some of the best milk after skimming by separator, heat it to a temperature of 90° and have it in a room where temperature does not go down lower than 60° and where the air is pure. Starter should be good and thick and have a pleasant acid.

Question 18—How often should cream be stirred while set for ripening?

If it is an open vat, about once an hour. Cream in sealed vats needs no stirring.

Question 19—Suppose you should churn for two hours and the cream foams and the butter doesn't come; what would you do?

Reduce the quantity of cream in the

churn and see that the cream is at the proper temperature and acidity.

Question 20—How do you care for your cream from skimming to churning?

In July, cool cream to 65° to 70°, stirring frequently. When cream begins to thicken—or has an acidity of .05 of 1 per cent., if 30 per cent. cream—cool to 60°, leaving enough ice and water surrounding the cream, so it will be at the churning temperature, 52° in the morning. Cream should be held at churning temperature at least two hours before churning.

In January, temperature of ripening should be held from 70° to 75° by warm water being placed under the cream vat until the cream begins to thicken. When cream is thick remove water and lower the temperature to 65° or 60° or so that the cream will be down to churning temperature in the morning, 52° to 54° F.

Question 21—What are the causes of poor skimming?

First, poor machine not giving enough centrifugal pressure to the milk while it is passing through. Second, low temperature. Third, lack of speed. Fourth, overfeeding. Fifth, unbalanced bowl.

Question 22—What are mottles, how produced and how remedied?

"Mottles" is a term applied to butter when not even in color, containing particles having a lighter shade. These may be spots or running through in waves. They are caused by improperly incorporating the salt into the butter. Remedied by even distribution of the salt in the butter, giving ample time for the salt to dissolve, and when working seeing that the butter receives the same amount of working.

Question 23—What effect has a weak or strong acid on the test for fat?

First, a weak acid leaves cloudy clots in the fat containing a slight quantity of matter other than fat. Second, strong acid chases the fat, making it read more or less difficult.

Question 24—What effect will too low a speed have on the test?

With skim-milk, buttermilk and whey it will not bring out the full reading of the fat.

Question 25—Do you fill your butter tubs full to the top?

No. Space of about one-eighth of an inch should be left to be filled with salt so as to exclude air.

Question 26—Is it best to have the separator fastened rigidly to the foundation?

Not absolutely solid, if rubber cushions are used; otherwise yes.

Question 27—How soon after calving would you accept milk from a cow?

The tenth milking, if udder is in normal condition.

Question 28—What effect will frozen milk have on the butter?

I do not know of any injurious effect. —T. L. HAECKER, Professor of Dairy Husbandry, U. of M., one of the judges.

A SLIGHT COLD, IF NEGLECTED, OFTEN ATTACKS THE LUNGS. "Brown's Bronchial Troches" give immediate and effectual relief.

Join the Army



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America's Six Greatest Dairying Authorities on Cream Separators.

University of Wisconsin Experiment Station.

Madison, Wis., Jan. 10, 1898.
"Another year's experience in our creamery, which we operate in a practical way as well as for experimentation and instruction, has given us still higher appreciation of the 'Alpha' De Laval separators. The exhaustiveness of the skimming under the varying conditions of milk-flow and temperature continues highly satisfactory and the machines give full evidence of lasting qualities under daily use."
W. A. HENRY, Dean and Director.

Cornell University Experiment Station.

Ithaca, N. Y., Jan. 10, 1898.
"Another year's experience serves to confirm our opinion of the 'Alpha' De Laval separators. It has been my good fortune to observe closely the operation of a large number of separators of the various kinds in general use, and my observation has led me to believe that in material, workmanship, and efficiency of separation, the 'Alpha' De Laval machines easily rank first."
H. H. WING, Professor of Dairy Husbandry.

Michigan Experiment Station.

Agricultural College, Mich., Jan. 12, 1898.
"It gives me great pleasure to repeat my testimony as to the value and efficiency of the De Laval separators. For another year they have been in constant use under my immediate observation. The per cent. of fat in the skim-milk is seldom more than a mere trace. Although subjected to the trying conditions of our Dairy course, where beginners must put them together and operate them, they have required little or no repairs and are still in excellent condition. The results of a long course of experiments, during which these machines have been subjected to every reasonable test, commend them for efficiency, thoroughness of skimming, small power required, ease of management and perfect construction."
CLINTON D. SMITH, Director.

Dr. S. M. Babcock.

UNIVERSITY OF WISCONSIN EXPERIMENT STATION.
Madison, Wis., March 5, 1897.
"For the past six or seven years we have used at the Experiment Station and in our Dairy School nearly every type of De Laval separators, and without exception they have given excellent satisfaction. We have had the 'Alpha' machines in our Creamery and Dairy School since their first introduction in the United States. These machines are easily managed, skim close under varying conditions, run light, cost little for repairs, and give a smooth cream, well suited for pasteurizing and the general trade, as well as for the manufacture of butter."
S. M. BABCOCK, Chief Chemist.

The author of "American Dairying."

De Kalb, Ill., Jan. 17, 1898.
"I became acquainted with the 'Alpha' separators when first introduced in this country, while in the employ of the Wisconsin State Experiment Station as Dairy Instructor, in 1891. Its work then convinced me that it was superior to any separator in the field. This opinion has been fortified more strongly each succeeding year by what I have learned of its work in comparison with other separators."
H. B. GURLER.

University of Minnesota Experiment Station.

St. Anthony Park, Minn., Jan. 24, 1898.
"We have now operated the different sizes of the 'Alpha' De Laval separators in our college of agriculture, school of agriculture, and experiment station for the past seven years, and in every instance they have given entire satisfaction. They all skim clean to their full rated capacity and at a wider range of temperature than is claimed for them. I do not see how it could be otherwise when the law of gravity and the distance the milk must travel in passing through the separator is taken into account. The thinner the layer of milk as it passes between the discs, and the further the milk must travel under centrifugal pressure the more exhaustive and complete the separation. It, therefore, follows that the 'Alpha' is the ideal separator."
T. L. HAECKER, Professor of Dairy Husbandry.

The sale of "Alpha-Baby" cream separators is now almost universal. The number in use exceeds 125,000. Their sale is ten to one of that of all imitating machines combined. The improved 1898 machines are better than ever, and possess from 10% to 25% greater intrinsic cost and producing value than ever before. Send for new "Dairy" catalogue No. 268 or new "Creamery" catalogue No. 508.

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 A Safe Speedy and Positive Cure
 The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by Druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland, O.


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. Give age, color and sex of animal, stating symptoms accurately, of how long standing, and what treatment, if any, has been resorted to. All replies through this column are free. In order to receive a prompt reply, all letters for this department should give the inquirer's postoffice, should be signed with his full name, and should be addressed direct to our Veterinary Editor, Dr. Paul Fischer, Professor of Veterinary Science, Kansas State Agricultural College, Manhattan, Kas.

MALIGNANT CATARRH OF CATTLE.—During the past two weeks numerous inquiries concerning an affection of young stock, which seems to be nothing else than one or another of the many forms under which the above named disease appears, have been received. A few words on the nature, causes, symptoms and treatment of this malady might, therefore, at this time be acceptable to the readers of the veterinary column. Malignant catarrh of cattle is an acute infectious disease which occurs in cattle only, appearing, as a rule, in the spring of the year, attacking chiefly young cattle, and preferably those in good flesh. The mucous membranes of the eyes, the mouth, and especially those of the nose and of the sinuses or cavities of the head are chiefly affected. Some of the changes that may be noticed in these organs are: Swelling and reddening of the nasal membranes, soon followed by a watery, later viscid, sticky, yellowish or dirty colored, discharge from the nose; this discharge is sometimes streaked with blood. The membranes of the nose may be destroyed or become detached and thus give rise to difficult breathing. Salivation is also a common symptom. The membranes of the eyes become swollen and tears are profusely secreted; the affected animals avoid the light as much as possible, and when forcibly exposed, will close their eyes. Sometimes diphtheritic or false membranes are formed in the upper portion of the trachea, or the inflammatory process may extend to the horns and cause them to separate and drop off. These symptoms are always attended with fever; cows in milk cease secreting this fluid; the bowels become constipated; later diarrhea sets in, the discharges often being streaked with blood and having a fetid odor. Urinary troubles may also be observed. Frequently cerebral disorders develop; these manifest them-

selves by anything from slight uneasiness to mad delirium, spasms, convulsions, etc. Death usually sets in in six days to two weeks. Only in cases where improvement sets in during the first three or four days may ultimate recovery be hoped for, and even then a long period of convalescence will follow. Sometimes relapses set in. Of the symptoms above reviewed, some or all may be present, and very often when complications set in. The disease is exceedingly variable in its character. Treatment in all cases must be directed toward the principal symptoms, and since these are so exceedingly variable it would not be practicable to outline a course of treatment here. There is no specific remedy known for this disease. A brief review of the causes, as far as they are known, would, however, be of great value in indicating a possible line of treatment. The specific cause of the disease is undoubtedly a germ of some sort, although it has as yet not been discovered. It is highly probable, however, that warm, damp, ill-ventilated and dark stables, such as favor the development of disease germs in general, are a principal factor in the development of this disease. Thorough disinfection, airing, drying, etc., of a stable in which the disease has appeared would therefore be the first duty to fulfill. Good dietetic treatment in the way of pure food and water, carefully handled milk in case of calves, etc., must not be neglected. A few general indications for treatment would be as follows: 1. Remove causes; give dry, light, airy stable, and easily digested food and pure water. 2. Cooling applications, in the form of bags of pounded ice, cold water, etc., to the head, especially when cerebral symptoms appear. 3. Let animals inhale steam from water to which carbolic acid, at the rate of one tablespoonful to a gallon, has been added; or wash the nasal cavities, mouth and throat with 3 per cent. creolin solutions. 4. Internally give salicylate of sodium in two-drachm doses, three times daily, to yearlings, more or less according to size, and keep it up as long as the fever lasts. 5. External applications of oil of turpentine and alcohol in proportions of one to three, thoroughly rubbed in, are also recommended. After treatment consists in general good care.

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the most famous (and most successful) veterinary specific of the age. IT WILL CURE curbs, splints, colic, lameness, shoe boils, thrush, horse ail, etc. Won't scar or change the hair. Locates lameness by remaining moist on the part affected.

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This is the accumulated experience of 33 years of header manufacture. We claim for it that it is perfect in material, construction, working ability, ease of draft, durability and poise and balance. Light—Wheels—When the header is in use, the wheels are high, broad and strong, affording easy draft, perfect traction and application of power; the frame is of angle steel firmly joined by malleable corner pieces and thoroughly angle trussed together, thus making the lightest but strongest frame procurable. Power is applied by a steel main drive chain of great strength and durability; a perfectly adjustable reel.



New steel trussed tilting lever—very sensitive to touch; a new, simple and positive lever within easy reach for throwing in and out of gear. In short, it is intended to be A PERFECT HEADER and we believe it is such. Ask your dealer for THE HODGES, insist upon having THE HODGES and buy nothing but THE HODGES if you wish the most perfect HEADING MACHINE ever produced. Manufacturers also of the Hodges Headers, Hodges "Lads" and "Lasses" Hand and Self Dump Rakes, Monarch and Acme Sweep Rakes and Acme Stackers. Our handsome new illustrated catalogue explains them all fully. Write for it before you buy; it is Free.

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Many farmers in the West, where hog cholera rages most, have saved their hogs

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IT MAKES SOWS RAISE MORE PIGS!



3 FEEDS FOR ONE CENT

GUARANTEED TO MAKE PIGS WEIGH 250 TO 300 POUNDS AT 6 MONTHS.

16 Pigs to One Sow.
 GENTLEMEN—I had a sow last fall that was very sick and could not eat or get up. She was reduced to skin and bones and was almost dead. I drenched her with "INTERNATIONAL STOCK FOOD" and she began to get better the first day, soon had an appetite and before I fed her three pounds was entirely well. On the 25th of May she had sixteen pigs. The sow and pigs are perfectly healthy and growing rapidly.
 "Sow's Statement." T. E. JONES, Oatlin, Ill.

258 Pounds at 6 Months.
 DEAR SIR:—With the use of "INTERNATIONAL STOCK FOOD" my pigs gained 43 lbs. per month, weighing 258 lbs. at 6 months. W. WHITTAKER, Blanchard, Iowa.

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 I used "INTERNATIONAL STOCK FOOD" for my sow and pigs. She had eleven pigs and at 6 months they averaged 225 lbs.
 J. FLANAGAN, Farnell, Iowa.

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 DEAR SIR:—I cured my hogs of Hog Cholera with "INTERNATIONAL STOCK FOOD" when many other herds in my neighborhood were almost exterminated. It is cheap to use and saves money in growing and fattening hogs.
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Prevents Hog Cholera.
 I have used "INTERNATIONAL STOCK FOOD" for three years. It prevents Hog Cholera and makes hogs grow very fast. The first 100 lbs. cleared me over \$75.
 A. M. POLLOCK, Utica, Neb.

We Can Furnish Thousands of Similar Testimonials From Every State.
 "International Stock Food" is guaranteed to keep your sows in better condition and to cause pigs to grow very rapidly. It will permanently strengthen the entire system of your sows and pigs so that they will not be in danger of Hog Cholera next Fall. You can fatten hogs in 30 days less time because it gives perfect digestion and assimilation. We guarantee that you will save three cents' worth of grain for every one cent's worth of "International Stock Food" you feed. Sold by over fifteen thousand dealers on a "spot cash guarantee" to refund your money in any case of failure and you are to be the judge. We will pay you \$100 in cash if you ever refuse to refund money on our plain, positive guarantee which is printed on every label. "International Stock Food" is equally good for horses, cattle, sheep or hogs because it is the greatest known animal tonic, permanent system strengthener and blood purifier. Ask dealers for "International Stock Food" and if you can not buy it in your town write to us and state how many hogs you raise and we will mail you free, postage prepaid, our six finely illustrated stock books which contain 100 large engravings of different breeds, valuable information in regard to raising stock and hundreds of testimonials. We will also write you our special FREE introductory offer for stock raisers who live in localities where "International Stock Food" can not be bought.

It is Guaranteed to Prevent or Cure Hog Cholera.
 Price Refunded if it Ever Fails. Agents Wanted in Every Town or Locality in the World.

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MARKET REPORTS.

Kansas City Live Stock. KANSAS CITY, April 18—Cattle—Receipts since Saturday, 3,652; calves, 48; shipped Saturday, 663 cattle; 15 calves. The market was steady to firm. The following are representative sales:

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Shipping and Dressed Beef Steers, Western Steers, Native Heifers, and Native Cows.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Native Feeders and Native Stockers.

Hogs—Receipts since Saturday, 5,598; shipped Saturday, 575. The market steady to 5c lower. The following are representative sales:

Table with columns: No., Ave. Price, No., Ave. Price. Rows include various hogs and sheep.

Sheep—Receipts since Saturday, 7,035; shipped Saturday, 174. Sheep were steady and lambs 10 to 15c lower. The following are representative sales:

St. Louis Live Stock. ST. LOUIS, April 18—Cattle—Receipts, 1,800; market steady; native shipping steers, \$4.35@4.55; light and dressed beef and butcher steers, \$3.90@5.10; stokers and feeders, \$3.60@4.90; cows and heifers, \$2.00@4.65; Texas and Indian steers, \$3.50@4.65; cows and heifers, \$3.00@3.50.

Hogs—Receipts, 500; market steady; yorkers, \$3.70@3.80; packers, \$3.65@3.80; butchers, \$3.50@3.90.

Chicago Live Stock. CHICAGO, April 18—Cattle—Receipts, 13,500; market strong to 10c higher; beefs, \$4.00@4.40; cows and heifers, \$2.25@4.60; stokers and feeders, \$3.70@4.80.

Chicago Grain and Provisions. Table with columns: April 18, Opened, High'st, Low'st, Closing. Rows include Wheat, Corn, Oats, Pork, Lard, and Ribs.

Kansas City Grain. KANSAS CITY, April 18—Wheat—Receipts here to-day were 90 cars; a week ago, 117 cars; a year ago, 23 cars. Sales by sample on track: Hard, No. 1, nominally \$4c; No. 2 hard, \$3.90@3.95; No. 3 hard, \$3.85@3.90; No. 4 hard, \$3.80@3.85; rejected hard, \$3.40@3.45. Soft, No. 1 red, \$3.60@3.65; No. 2 red, \$3.50@3.55; No. 3 red, nominally \$3.40@3.45; No. 4 red, nominally \$3.30@3.35; rejected red, nominally \$3.20@3.25. Spring, No. 2, nominally \$3.80@3.85; No. 3 spring, nominally \$3.70@3.75; rejected spring, nominally \$3.50@3.55.

Corn—Receipts here to-day were 60 cars; a week ago, 63 cars; a year ago, 123 cars. Sales by sample on track: Mixed, No. 2, \$2.75@2.85c; No. 3 mixed, \$2.65@2.75c; No. 4 mixed, nominally \$2.50c; no grade, nominally \$2.40@2.45c. White, No. 2, \$2.85@2.90c; No. 3 white, \$2.80@2.85c; No. 4 white, nominally \$2.75c.

Oats—Receipts here to-day were 9 cars; a week ago, 12 cars; a year ago, 22 cars. Sales by sample on track: Mixed, No. 2, nominally \$2.75@2.80c; No. 3 mixed, \$2.70c; No. 4 mixed, nominally \$2.60c. White, No. 2, nominally \$2.85@2.90c; No. 3 white, nominally \$2.75@2.80c; No. 4 white, nominally \$2.65c.

Receipts here to-day were 41 cars; a week ago, 58 cars; a year ago, 81 cars. Quotations are: Choice prairie, \$7.50; No. 1, \$7.00@7.25; No. 2, \$6.50@7.00; No. 3, \$6.00; choice timothy, \$9.50; No. 1, \$9.00; No. 2, \$8.00@8.50; choice clover and timothy, No. 1, \$7.50@8.00; No. 2, \$7.00@7.50; pure clover, \$7.00@7.50; packing, \$3.50@4.00.

Kansas City Produce. KANSAS CITY, April 18—Butter—Extra fancy separator, 17c; firsts, 14c; dairy, 12c@15c; country roll, 11c@12c; extra fancy, 18c; store packed, 10c@12c; fresh packing stock, 9c@11c. Eggs—Strictly fresh, 8 1/2c per dozen. Poultry—Hens, 6 1/2c; broilers, \$3.00@4.00 per doz; roosters, 15c@20c each; ducks, 8c; geese, 5c; hen turkeys, 9c; young toms, 8c; old toms, 7c; pigeons, 75c per dozen. Apples—Fancy Missouri Pippin, \$3.00@3.50; fancy Ben Davis, \$3.00@3.25; Winesaps, \$3.50@4.00; Willow Twigs, \$3.50@4.00. In a small way varieties are selling at 40c@65c per half bu. Vegetables—Cabbage, \$1.75@2.00 per 100-lb. crate. Beets, 25c@40c per bu. Green and wax beans, \$2.50@3.00 per crate. Navy beans, hand picked, \$1.12 1/2@1.15 per bu. Onions, \$1.00@1.25. Potatoes—New, Texas, \$1.00 per 1/2 bu. crate; old, northern stock, fancy, bulk, Burbanks, 60c; choice to fancy mixed, 40c@55c; bulk Colorado, 60c@65c; fancy, 75c; home grown, 50c@55c. Sweet potatoes, 60c@75c. Seed potatoes, northern grown Early Rose, 65c@70c; Early Ohio, 65c@70c; Red river stock, 70c@75c.

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LOOK THIS UP. It will pay you. For free maps and descriptive books write to D. W. CASSEDAY, Land and Industrial Agent, 'SOO' Railway, Minneapolis, Minn. Mention this paper.

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Over 12,000 tons of export and import freight now being handled over its docks per month.

Three steamship lines now running to British, Continental and Mexican ports.

Over one-half the canal completed to a depth of sixteen feet.

One hundred thousand dollars' worth of property sold in March.

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For information write to F. A. HORNBECK, General Manager Port Arthur Townsite Co., KANSAS CITY, MO.

Kansas City Live Stock Commission Co. Rooms 277 A, B, C, D Stock Exchange, KANSAS CITY STOCK YARDS. L. A. ALLEN, CHAS. W. CAMPBELL, PEYTON MONTGOMERY, Cattle Salesmen. W. T. McINTIRE, Sheep Salesman. J. T. MEGREY, Hog Salesman. Correspondence and consignments solicited. Good sales, prompt returns. Ample capital. Twenty years actual experience. Market reports free on application.

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PERFECT FARM FENCE. Made of best galvanized steel wire. Top and bottom wires No. 9. All other wires No. 11. We use the strongest stay wire in any woven wire fence on the market—hence more strength and durability. Our LOOP KNOT (entirely new feature, patented) provides perfect expansion and contraction and keeps it tight at all temperatures. Our Loop Knot being uniformly distributed throughout each foot of fence is, in effect, the same as placing one coil of a spiral spring in every foot throughout the entire length of fence, BESIDES GREATLY STRENGTHENING IT. Our Loop Knots make the fence plainly visible and impossible for stay wire to slip or give. It is Hog tight and Bull strong. Will turn all kinds of stock without injuring them. Where we have no agents a liberal discount will be given on introductory order. Reliable farmer agents wanted in every township. Pittsburgh Woven Wire Fence Co., Pittsburg, Pa. Send for catalogue and prices.

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Kansas City Stock Yards are the most complete and commodious in the West and second largest in the world. The entire railroad systems of the West and Southwest centering at Kansas City have direct rail connection with these yards, with ample facilities for receiving and reshipping stock. Table with columns: Cattle and Calves, Hogs, Sheep, Cows. Official Receipts for 1897: Slaughtered in Kansas City, Sold to feeders, Sold to shippers, Total Sold in Kansas City 1897.

CHARGES: YARDAGE—Cattle, 25 cents per head; Hogs, 8 cents per head; Sheep, 5 cents per head. HAY, 80c per 100 pounds. CORN, 60c per bushel. OATS, 60c per bushel. NO YARDAGE CHARGED UNLESS THE STOCK IS SOLD OR WEIGHED. C. F. MORSE, E. E. RICHARDSON, H. P. CHILD, EUGENE RUST, Vice Pres. and Gen. Mgr. Secy. and Treas. Asst. Gen. Mgr. Traffic Manager.

"Fixin' Fences" every spring is needless. No "top rails" to lay up, nor need to chase down the lane after every storm if Page Fence is used. Send for "spring styles" and prices. See our ad. in next issue. PAGE WOVEN WIRE FENCE CO., Adrian, Mich. BEAUTIFY THE FARM. with an ornamental farm fence that costs no more than plain fence. Its name is CYCLONE. Our lawn fence and gates are the finest ever seen and very strong. Mind you: there is nothing "just as good." PATENTED 1894. PATENTED 1895. CYCLONE FENCE CO. HOLLY, MICH.

The Apiary.

Conducted by A. H. DUFF, Larned, Kas., to whom inquiries relating to this department should be addressed.

TO PREVENT SWARMING.

Editor of the Apiary:—Last spring we bought one stand of bees, and they were in poor condition, but under the best of conditions they did splendidly, filling their hive and gave us considerable surplus honey. This spring finds them with plenty of honey, strong in numbers, and are now raising young bees. We wish to change the location of the hive, it being now on the lawn, and I am afraid of their swarming and getting away, hence this letter for information.

I have heard that to prevent swarming you could take out every other rack from the old hive and put into the new and start them to work again. What do you think of this plan? I am deeply interested in bees, and read all your Kansas Farmer articles, but was not certain what to do in this case.

We have large fields of alfalfa very near us, plenty of fruit bloom and white clover, and there is nothing lacking but experience. MRS. SUE VICK.

Fowler, Kas.

We have never found it objectionable to keep a few colonies of bees on the lawn, but a large number of them may be inconvenient. It is very important to consider well the place you wish to locate your apiary and thus plant your hives where you intend them to remain. Changing hives from one place to another is very hurtful to colonies, and more especially so early in springtime, as a large number of the working force of bees return to the former location and do not find their way back to the new one. The only safe plan to move a colony of bees at this season of the year when they are to be shifted about to a different place in the same vicinity is to move it but a short distance at a time, say about two or three feet a day, until the desired place is reached. In this manner the bees on their return to the hive will locate it by sight, and will thus continue to follow it up each day, and when the desired place is reached the bees will all be there.

When the apiary is located out of plain sight of a residence there is always more or less danger of the bees swarming and going away unseen by the owner, and for this reason the apiary should be located in as plain sight of a dwelling as possible, so that when the bees swarm they may readily be seen. This has always been a troublesome matter with the bee-keeper, and different methods have been brought about to prevent this loss, and the methods now adopted by extensive apiarists is clipping the wings of queens. This always prevents swarms from flying away, as the swarm will not leave unless the queen accompanies it. But this does not relieve all trouble in connection with swarming, by any means, for it will not prevent the swarms from issuing from the hive. The swarm simply comes out of the hive in its natural way, but as the queen cannot take wing with them, they will on missing her return to the hive. The trouble with this method is that the queen thus issuing from the hive frequently becomes lost, or if she is fortunate enough to get back to the hive, everything being in the same condition as before, they will repeat the swarming, and may keep it up daily, and the result is generally that the queen is finally lost. In this case the bees will not again attempt to issue until the young queens begin to hatch out in the hive, when they will again swarm, and as the young queens are not clipped they of course fly with the swarm, and the colony is in the same condition that it would be if the first queen had not been clipped. It certainly is not in as good condition, for the old queen was an important factor.

I much prefer to prevent swarming by keeping the queen cells out of the colony. If this is done regularly the colony will not swarm, or at least the exception to this rule is so small that it is not worth considering. Once a week will answer to examine for queen cells, although it may be looked after more frequently, and all queen cells should be carefully hunted up and removed. It is also very important when colonies become very strong that they be accommodated with plenty of surplus storage room. This of itself will go a long way in the prevention of swarming. If we have but one colony and wish to increase the number of colonies and at the same time do not want them to swarm, we can divide the colony, and this will prevent it from swarming.

Dividing a colony of bees is simply cutting the colony in two. Prepare a new hive and take out about half the number

of frames in the old colony and place them in the new hive, and fill up the remaining space in each hive with empty frames, or, better still, if you have empty frames of comb, place foundation comb in them. In thus dividing remove half of the frames containing brood to the new hive. The brood selected for the new hive should be at least the larger portion of it—brood that is the oldest and just hatching out. Place the brood combs together in the center of the hive, and the empty ones at the sides. Combs containing honey should also accompany the brood. In thus dividing we get about half of the bees in the new hive, as all the bees adhering to the combs should go with them. It does not matter materially which part contains the old queen, but we prefer her to remain on the old stand. Before closing the hives we should take one or two combs from the old and shake the bees off them in the new hive, so that we may have equal strength. It always occurs in dividing that most of the old or working force of bees will go back to the old stand and the new colony will thus have chiefly young bees left in it, unless we take more than half of the bees from the old one, on account of so many going back. The queenless part will rear a queen of their own, but if we have a queen ready to introduce to them, they will do much better and become much stronger in a very short time.

Another plan to divide is to take a frame or two from the colony that contains young brood of the proper age to produce a queen. With this small colony or nucleus set out to itself they will in due time produce a queen, after which it may be strengthened by adding a frame of brood to it from other colonies. This is perhaps the best plan of dividing, as the queen, the most important factor, is first produced and the colony built up afterwards.

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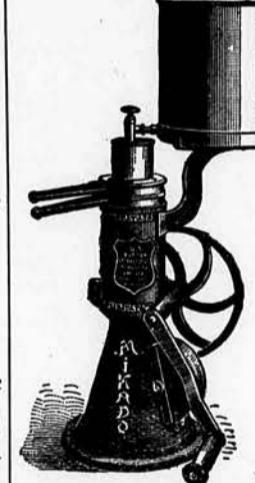
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BLOSSOM HOUSE—Opposite Union depot, Kansas City, Mo., is the best place for the money, for meals or clean and comfortable lodging, when in Kansas City. We always stop at the Blossom and get our money's worth.

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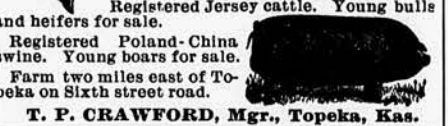
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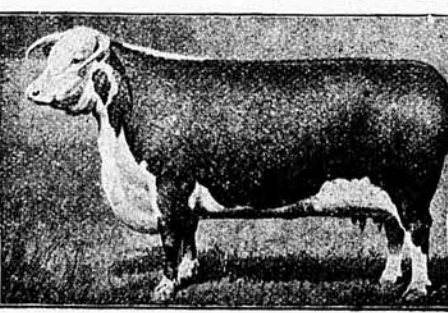
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