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BREEDERS' DIRECTORY.

Cards will be inserted in the *Breeders' Directory* as follows: Four line card one year, \$15.00; six lines, \$25.00; ten lines, \$30.00; each additional line \$3.00. A copy of the paper will be sent to the advertiser during the continuance of the card.

CATTLE.

ENGLISH RED POLLED CATTLE—PURE-BRED. Young stock for sale. Your orders solicited. Address L. K. Haseltine, Dorchester, Green Co., Mo. Mention this paper when writing.

CENTRAL KANSAS STOCK FARM.—F. W. ROSS, Alden, Rice Co., Kas., breeds pure-bred Short horns, Poland-Chinas and Barred Plymouth Rocks. Stock for sale.

NORWOOD SHORT-HORNS.—V. R. ELLIS, Gardner, Kas. Rose of Sharon, Lady Elizabeths and Young Marys. Richest breeding and individual merit. Young bulls by Godwin 115676 (head of Linwood herd). Sir Charming 4th now in service.

NEOSHO VALLEY HERD OF SHORT-HORNS.— Imported Lord Lieutenant 120019 at head of herd. Young bulls and heifers for sale. Address D. P. Norton, Council Grove, Kas.

SCOTCH SHORTHORN CATTLE—Cows, heifers and young bulls for sale. Herd headed by Imperial Knight 119669 and Duke of Walnut Grove 127010. Inspection invited. JOHN MCCOY, Sabetha, Kas.

H. R. LITTLE, Hope, Dickinson county, Kas., breeder of Shorthorn cattle. Herd numbers 100 record.

FOR SALE:

TWENTY-FIVE SHORTHORN BULLS OF SERVICEABLE AGE.

ROCKY HILL SHORTHORNS—Six finely bred red U. S. bulls for sale, a year old in April. To make room on the farm for Pure-breds we are now offering for sale fifty head of very high-grade Shorthorn cows and heifers, thirty-five of which have been bred to registered bulls. Are also offering one choice registered Hereford bull 7 years old, and twenty-five high-grade Hereford cows and heifers, all of which have been bred to above Hereford bull. J. P. True & Son, Newman, Kas., on the U. P. R. R., twelve miles east of Topeka.

SWINE.

J. U. HOWE, Wichita, Kas., Maple Avenue Herd of J. pure-bred Duroc-Jersey hogs. Choice stock for sale. Reasonable prices. Personal inspection and correspondence invited.

KANSAS HERD OF POLAND-CHINA SWINE—Has eight yearling sows. They have had pigs and bred to U. S. Tecumseh (20368), he by old black U. S. Also some fine boars by U. S. Tecumseh ready for service; and one Tecumseh-bred boar. Address F. P. Maguire, Haven, Kas.

Silver Spring Herd Poland-China Hogs. Headed by HADLEY'S MODEL T. Bred sows, gilts and boars of choicest breeding for sale. Address WALTER ROSWURM, Council Grove, Kas.

KANSAS HERD OF POLAND-CHINA SWINE.— Has five choice yearling sows bred to my black U. S. boar, and one Tecumseh boar and thirty-five fall pigs by Model Sangers (20492) by Kiewer's Model. They have typical ears and show fine markings. Address F. P. Maguire, Haven, Kas.

V. B. HOWEY, TOPEKA, KAS.

Breeder and shipper of thoroughbred Poland-China and Large English Berkshire swine and Silver-Laced Wyandotte chickens.

POULTRY.

BLACK LANGSHANS—PURE AND FINE. Eggs, \$1.50 for 15, or \$2 for 26. J. C. WITAM, Cherryvale, Kas.

CHOICE BREEDING COCKS AND COCKERELS.

Fifteen White P. Rocks, 15 Silver Wyandottes, 20 Brown Leghorns, 10 Light Brahmas, 10 S. S. Hamburgs, 10 Black Langshans, 5 Black Javas, 12 Pekin drakes. All strictly first-class. Some are scored by Hewes and others.

A. H. DUFF, Larned, Kas.

FOR SALE—Bronze turkeys, Barred Plymouth Rocks, Black Langshans and Embden geese. None but good stock shipped. Write for what you want. Mrs. James D. Dyer, Hoffman, Mo. Shipping point, Warrensburg.

EGGS FOR HATCHING—From high-scoring breeding yards of B. P. Rocks, W. Wyandottes and R. C. Brown Leghorns at low prices. A few good cockerels for sale. P. C. Bowen & Son, Cherryvale, Kas.

150 BARRED PLYMOUTH ROCKS and FOR SALE SILVER-LACED WYANDOTTES Buy now and save higher prices next spring. They are from birds that have won prizes wherever shown. For prices, etc., address J. P. Johnson, JUNCTION ORY, Kas.

GOLDEN WYANDOTTES EXCLUSIVELY. Fifteen choice cockerels from high-scoring hens, mated to a 98½ score bird. Write us for prices. They will be low for the birds. KIRKPATRICK & SON, Connor, Wyandotte County, Kas.

POULTRY.

D. A. WISE, BREEDER OF BLACK LANGSHANS AND PEKIN DUCKS. TOPEKA, KANSAS. Eggs in season, \$1.50 per sitting. Residence and yards south of Highland Park.

Silver Wyandottes. We are selling eggs from our prize-winners scored by Shellabarger & Savage, \$2 for 15; \$3.50 for 30. White P. Rock eggs, \$1 for 15. R. F. MEERK, Hutchinson, Kas.

CANFIELD'S WHITE PLYMOUTH ROCKS WON first pen, first cock, first cockerel and first hen at the Kansas State Poultry Show, 1899, besides the grand sweepstakes for best ten birds in the American class. Eggs, \$2 for 15, \$5 for 45. M. L. Canfield, Belleville, Kas.

WHITE WYANDOTTES

Have no equal as an all-purpose fowl. I have high-scoring birds and eggs from first prize-winners for sale. Prices reasonable. Address Jeff. Payne, Hutchinson, Kas.

Partridge Cochins and White Leghorns at Hutchinson show took sweepstakes in Asiatic and Mediterranean classes (silver cup and silver teapot); Shellabarger judge. Eggs, \$2 and \$1 per 15. Write for descriptive circular. Address, J. W. Cook or Carrie A. Cook, Hutchinson, Kas.

THIS SPACE WAS WON AS A PREMIUM By the Best Pen of Buff Cochins at the Kansas State Show, 1899.

Eggs, \$2.50 to \$5 per sitting. Write for circular. Chas. Steinberger, North Topeka, Kas.

WHITE HOLLAND TURKEYS, ROSE-COMB WHITE LEGHORNS, Barred Plymouth Rocks, Golden Sebright Bantams, Imperial Pekin Ducks. Eggs in season. Breeding stock for sale. J. C. CURRAN, Curran, Harper Co., Kas.

M. B. TURKEYS AND B. P. ROCKS.—At Topeka state show, I won first and second tom; first and second pullet; second hen; first pen; first trio, and sweepstakes in competition with 87 Rocks and 10 pens. At Kansas City, won first and second pullet, first tom. Stock for sale. Fine cockerels, \$1.50, \$2 and \$2.50 each. Booking egg orders now. Rocks, \$2 per 15; \$1 per 15 for utility. Per 100, \$10 and \$6. Turkey \$3 per 9; \$5 per 18. Mrs. F. A. Hargrave, Richmond, Franklin Co., Kas.

BARRED PLYMOUTH ROCKS. E. R. Lock's Barred Plymouth Rocks are still in it. Twice in succession my birds have won all of the prizes where shown. Write me for prices on stock. Eggs \$1 to \$2 per 15. Catalogue free for writing. E. R. LOCK, Hutchinson, Kas.

ROSE POULTRY FARM—J. M. & C. M. Rose, Elm-dale, Kas., breeders of Light Brahmas, yard, 92½ cockerels; females 92 to 94½. B. P. Rocks, yard, 91½ cockerels; females 90 to 92½. W. C. B. Polish, 92½ cockerel; hen 93 and 94. S. C. B. Leghorn, yard No. 1, 93½ cockerel, first prize at Sedgwick, Cottonwood Falls '98, and Topeka '99; females 92½ to 94. Yard No. 2, headed by cock 94½ as a cockerel last year; pullets 92½ to 94. We have some fine Light Brahma cockerels for sale. Eggs \$1.50 per sitting of fifteen.

H. T. FORBES, L. C. FORBES. Breeder of...

THOROUGHbred BUFF COCHINS

Eggs and stock from prize-winners at Kansas State Poultry Show, January, 1899. Write for description and prices. Address H. T. & L. C. FORBES, Topeka, Kas.

PRIZE-WINNING LIGHT BRAHMA CHICKENS EXCLUSIVELY...

Our record for 1898-99: Won 5 out of 6 first premiums at State show in Topeka, including sweepstakes, in January, 1899. Won 6 out of 7 first premiums, including sweepstakes in Asiatic class, at Sedgwick (Kansas) show in December, 1898. Won 6 out of 6 first premiums, including sweepstakes, at Butler County show, held in Eldorado, December, 1898. Eggs \$1 to \$3 per sitting. Also breeders of Red Polled cattle. Address CHAS. FOSTER & SON, Eldorado, Kas.

YOU ARE MISSING.....

A GOOD THING

If you fail to order some of those Langshan, Buff Cochins or White Wyandotte Cockerels. Don't be too late. They are going fast. Also

EGGS FOR HATCHING.

Am booking orders now for future delivery. Send stamp for circular giving matings and varieties, or 10 cents for catalogue and guide.

EXCELSIOR FARM, C. B. Tuttle, Prop., Topeka, Kansas.

ROCKS WHITE and BLUE BARRED

Five Pens—Three Barred, Two White. One pen headed by E. B. Thompson Ringlet cockerel; one by a grand Lash cockerel; one by a bird of the Conger strain. My White Rocks are from Madison Square Garden winners—large, pure white birds. Eggs, \$1 for 15, \$2 for 30, \$3 for 50, \$5 per 100. White Guinea eggs same. Write for descriptive circular and prices. Printed recipe for making and using Liquid Lice Killer, 25 cents. Address T. E. LEFTWICH, Larned, Kas.

SWINE.

D. TROTT, ABILENE, KAS., famous Duroc-Jerseys and Poland-Chinas.

M. H. ALBERTY, Breeder of Registered Duroc-Jersey Swine. Cherokee, Kas. Baby Pig Teeth Clippers, 35 cents by mail.

DUROC-JERSEY HOGS—Registered Stock. Send stamp for 64-page catalogue, illustrated. Prices and history. J. M. STONEBRAKER, Panola, Ill.

RIVERDALE 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.

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

Standard Herd of Poland-Chinas

Has some fine sows, 1 year old this fall, sired by Tecumseh Chief (he by Chief Tecumseh 2d), and are bred to Look Over Me (he by Look Me Over); also, an extra lot of Spring Gilts, bred the same, and some good Spring Males of the same breeding. Come and see, or write and get prices. Wm. McGuire, HAVEN, KAS.

H. W. CHENEY, North Topeka, Ks. POLAND-CHINAS

of the fashionable prize-winning Chief I Know strain. Cheney's Chief I Know at head of herd. Pigs for sale. Prices low.

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.

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.

THE SEDGWICK NURSERY CO., Sedgwick, Harvey Co., Kas.,—Breeder of—

Short-horn Cattle and Poland-China Swine of the Best Strains. Stock for sale. Correspondence and inspection invited.

VERDIGRIS VALLEY HERD—Large-Boned Poland-Chinas.

Three hundred head, six good spring boars, good bone, large and growthy, very cheap. Six June boars, very heavy bone and fancy, four of them will make herd-headers. Twenty yearling sows and spring gilts, bred, good ones, at from \$12 to \$16. One hundred and fifty of the finest fall pigs we ever produced. For sale cheaper than you ever bought as good pigs before. WAIT & EAST, Altoona, Wilson Co., Kas.

M. C. VANSSELL, Muscotah, Atchison, County, Kansas,

Breeder of Pure-bred Poland-China Swine and Short-horn Cattle of the most desirable strains.

For Ready Sale Thirty Poland-China Bred Sows

One and two years old, bred for fall farrow; very choice; price low if ordered soon; must make room for 170 pigs now on hand. Come and see or write.

THE WILKES QUALITY HERD OF POLAND-CHINA SWINE.

Thos. Symms, Prop., Hutchinson, Kas.

Herds boars, Darkness Quality and Reno Wilkes. For ready sale 45 very choice pigs out of Beale Wilkes, Beauty Sedom, Chief I Know, Standard Wilkes, Ideal Black U. S. and Chief Tecumseh 2d sows. Farm one mile west of Hutchinson, near Star Salt works.

F. L. and C. R. OARD, Proprietors,

HEDGEWOOD HERD OF POLAND-CHINAS VASSAR, KANSAS.

Popular Blood. Individual Merit. Brood sows of the most popular strains and individual merit. The best that money can buy and experience can breed. Farm one and one-half miles south and half mile east of Vassar, Kas., on Missouri Pacific railroad.

SWINE.

KAW VALLEY HERD POLAND-CHINAS—One of the best sons of Chief I Know at the head. Pairs and trios not akin; of all the leading strains. M. F. Tatman, Rossville, Kas.

CRESCENT HERD POLAND-CHINAS.

Boars and gilts for sale. S. W. HILL, Hutchinson, Kas.

HIGHLAND HERD.

Five Poland-China boars for sale at prices lower than we have ever offered. Two by Highland Chief, he by C. T. 2d, one by Knox All Wilkes, two by Silver Chief 2d. Anybody wanting a boar write at once. DIETRICH & SPAULDING, Richmond, Kas.

PLEASANT VALLEY HERD REGISTERED POLAND-CHINA SWINE

For sale, King Perfection 4th 18744 S. and Lambing Ideal 14060 S. Also sows bred to above boars or Dandy U. S. by Frasier's U. S. by Frasier's Black U. S., dam Black Beauty by Ben Harrison, sire Charley F., brother to Look Me Over. Write for particulars. Address either W. E. JOHNSON, Colony, Kas. E. A. BRICKER, Westphalia, Kas.

CAP-A-PIE HERD OF Poland-Chinas

Geo. W. Falk, Richmond, Mo., is still doing business at the old stand, where, for the past fifteen years, he has been breeding and selling a class of hogs that have been winners at the leading State fairs, and have been topping the markets in Chicago and Kansas City—the end of all hogdom. Has constantly on hand boars large enough for service and sows bred and unbred. Write for prices, which are always reasonable.

HORSES.

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

CATTLE.

MAPLE LAWN HEREFORDS.

E. A. Eagle & Son, Props., Rosemont, Osage Co., Kas. For sale, five yearling pure-bred bulls. Also one carload of high-grade cows and one car bull calves. Will be in Kansas City with young bulls for sale February 28, 1899.

Geo. Groenmiller & Son,

Centropolis, Franklin Co., Kas., Breeders of Red Polled Cattle and Cotswold Sheep, Buff and Partridge Cochins, Light Brahmas, Brown S. C. Leghorns and Golden Wyandottes. A few seven-eighths Red Polled bulls for sale.

CLOVER CLIFF FARM.

Registered Galloway Cattle. Also German Coach, Saddle and Trotting-bred horses. World's Fair prize Oldenburg Coach stallion, Habbo, and the saddle stallion, Rosewood, a 16-hand, 1,100-pound son of Montrose, in service. Visitors always welcome. Address BLACKSHERE BROS., Elmdale, Chase Co., Kas.

SILVER CREEK HERD

SHORT-HORN CATTLE.

Scotch and Scotch-topped, with the richly-bred Crickshank bulls, Champion's Best 114671 and Gwendolene's Prince 130913, in service. Also high-class DUROC-JERSEY SWINE. Can ship on Santa Fe, Frisco and Missouri Pacific railroads. J. F. STODDER, Burden, Cowley Co., Kas.

D. P. NORTON,

Breeder of Registered Shorthorns, COUNCIL GROVE, KANSAS.

Imp. British Lion 1 1862 and Imp. Lord Lieutenant 120019 in serv. Sixty breeding cows in herd. Lord Lieutenant sired the second prize yearling bull at Texas State Fair, 1898, that also headed the second prize herd of bull and four females, u. age, and first prize young herd of bull and four females.

JACKS FOR SALE.

I have for sale twelve Jacks, aged 3 and 4 years next spring. Their breeding is from Spanish Kentucky and Tennessee bred Jacks and Jennies, black with white points. S. O. HINGSTON, Richmond, Okla.

Agricultural Matters.

THE ECONOMY OF CUTTING CORN AND FEEDING THE FODDER.

(Continued from last week.)

Handling corn fodder in cold weather will never be fascinating work, but as usually handled it is downright drudgery. I will now show how this severe labor can be avoided, and how one man, alone on the farm, can handle fodder easily, quickly, and without waste, even in the driest and windiest weather. I have stated that the green shocks should not be tied up tight as many authorities argue, but one should endeavor to cure out the fodder all he can, and when well cured the shocks should be tied up under a great pressure, so the whole shock can be handled whole without dropping apart. While it is possible to handle a 14 by 14 shock whole, a 10 by 10 shock is the most suitable size.

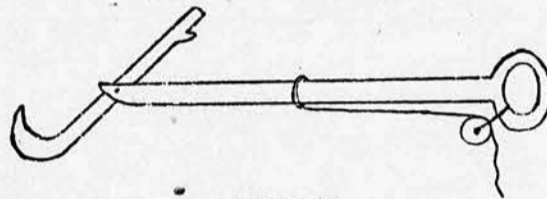
In my opinion our State Board of Agriculture is the peer of any similar body in the world, and its secretary is largely responsible for this enviable record, and when its secretary advocates a thing it always passes as true without question. In volume 15 for 1895-6 Biennial Report of the State Board of Agriculture, and on page 97, Secretary Coburn pictures the "Farmer's Handy Wagon." Our Secretary recognized at a glance the superior usefulness of this wagon to handle fodder with.

Now the Appleton Company, who advertise the "Goodhue Windmills" in this paper, make the strongest, neatest, and best back-gear windlass that I know of, and this implement and this wagon will enable one man alone to do as much work in corn fodder as four men can do in the old way with common wagons, and this is the reason that I make these remarks so personal and pointed. One should have the factory-made frame, truss-rods and stake-irons that go with this truck, and the windlass should be firmly bolted on the left-hand front end of the wagon, where it will take up a floor space of about 2 by 3 feet. Procure some No. 12 galvanized wire, bolt a 2 by 4, 4 feet long, under the frame of the right-hand side and just abreast of the front wheel. Drive up to a shock and stop with the right fore wheel just abreast of it, hitch a chain around the reach that extends forward of the front axle and loop it around the shock. Loop a new 1-inch Manila rope around the shock below this chain and use a ring and pulley on the loop, extend the rope back under the truss-rod and frame, up through a hole in the floor, and around a hay pulley at left side rear end of wagon, and end the rope in a ring. In this ring hook the upper block of a 6-rope tackle, the lower block being fastened at front end of wagon frame near the windlass, draw these blocks toward each other by the aid of the windlass, and just as the shock is about to be cut in two, stop and tie the wire ball around, loosen ropes and pass on to next shock. One hand on the windlass will put all the strain the shock will stand, or about 6,000 pounds, the breaking strain of the rope being 6,700 pounds. One man can thus bale 6 to 8 acres of shocks per day, and when everything is favorable he can bale a shock per minute for a short time. The corn-cutters should be made to understand that you will not pay for any shocks that do not stand up nicely in two weeks from cutting, and the baling should be done as soon after this as possible. These baled shocks can be slung around in the roughest manner and in the driest weather without waste, in fact, the drier the weather the better, yet I well know all the authorities agree that fodder does not handle well except when damp, and can be threshed to advantage only when damp. I know just what I am talking about, from experience, and I say this is a mistake; that if they use the tools I do to handle the fodder with they will see it cannot be too dry to handle it.

I have shown how to apply a great pressure to a corn shock while it was standing in the field and have intimated that the baled fodder should be hauled up early and stored in the barn. But many farmers have no barn room to spare for this purpose, at least I have not until late in the winter, when the clover in the mows is exhausted, and I only put the baled fodder in the mows after the hay is out, or about March 15. I do not think it a good plan to store away in the barn fodder that is bleached out by the winter storms, so I reserve some large shocks till the last and haul away the outside stalks, bale the bright inside and put this away in the barn for spring and summer use, as I have no corn-crib, and I enjoy the reputation of having a farm in the corn belt, upon which no corn is husked, no cobs are ever seen, no stalks in the manure, and no crib stands, in fact, I might write an article on the "Passing of

the corn-crib," and claim the distinction of being one of the first to adopt this plan. The time is rapidly coming when this will surely happen and I have only got a little ahead of some others.

That baled corn fodder can be handled with ease in the driest and windiest weather without any waste, and that the baled article can be handled and stored in a barn as easily as hay, and will also keep just as well and as long in the mow, has practically made the use of wild hay on the farm unnecessary, and has the additional advantage that a large field of corn fodder can be cleared off and stored away early, so that the field can be fall-plowed, or put to some other use. The old way of handling corn fodder in the snow or mud is done away with, and when bad weather comes along the farmer who owns a small shredder or corn thresher can thresh out all the corn in the barn, no matter what the weather may be outside. This manner of handling the corn crop saves all haying in the summer when the teams are needed so much at other work, such as cultivating and harvesting, and as there is no fall husking in the frost and snow all fall work can be pushed along rapidly.



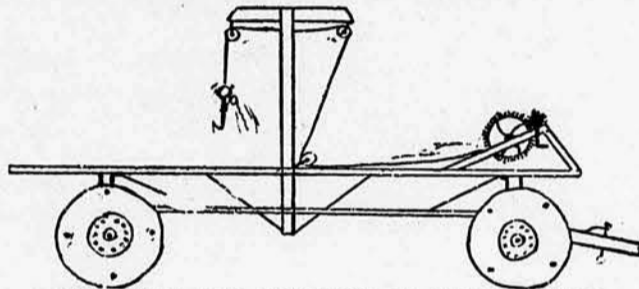
TRIP-HOOK.

If we allow 40 bushels of shelled corn per acre, and 2 tons of corn stover, then a 14 by 14 hill shock will weigh when cured about one-sixteenth of this, or 425 pounds, which is rather large to handle whole, although it can be done. As there

are just twice as many shocks per acre when cut 10 by 10 hills square, then one of this size will weigh 180 to 210 pounds, when perfectly dry, and these sizes handle whole to the best advantage. When one buys a "Handy" wagon, he should get the frame, truss-rods, and stake-irons (20 of them) with the trucks—the floor, doubletrees and neckyoke can be supplied here. An outfit weighs about 850 pounds, and the freight to points in Kansas is about \$1 per hundred. The "Handy" can be easily rigged up so as to be a self-loader, or act as a loading machine for other wagons, just as one needs. When it is to act as a self-loader, the windlass spoken of must be left bolted on the floor of the wagon at the left side, forward end of the wagon, and middle ways of the wagon and at the left side a 10-foot 4 by 6 timber should be bolted in an upright position, passing inside the frame, through a hole in the floor, to a distance of two feet below the top of the frame. This will leave the bottom of this stick about one foot from the ground, or about the same distance as the axle. A strong bolt bolts this stick to the frame, 2 wagon-tire braces stay it forward and backward underneath the frame, and another wagon-tire brace stays the bottom of stick from the coupling-pole, making a strong combination that is not easily broken or tipped over. At the top of this stick a 2 by 6 piece, 4 feet long, is bolted on, extending out 2 feet forward and backward, making the rig look like a huge "T" mounted on wheels. At each end of this crosspiece, hay pulleys are bolted and another near the bottom of the upright on the wagon floor, and the hoisting rope runs through all three of these pulleys to the back-gear windlass. A simple hook can be used to fasten into the bale of the shock. This can be done without getting off the wagon, the windlass turned by the crank, the shock hoisted to the top of the mast, when, if the ratchet of the windlass is thrown off, the shock will slowly descend and by the aid of a hay-hook one can jerk the shock over on to the wagon. A 4-foot fence should be set up in the stake irons on three sides of the wagon and the shock can be dragged forward and backward and laid down crosswise of the wagon. A simple trip-hook can also be used, the hook tripped and the shock jerked on to the wagon. That is the way I like best. The "Handy Wagon Company" have sprocket wheels, chains, shafting and gear clutches that they use on their wagons to compress air in a

tank to spray with, and if one has a set of these gears, the windlass can be run and the shock elevated by the movement of the wagon wheels passing to the next shock. I have a set of these gears and I expect to use them not only in loading corn shocks, but I can set my Buckeye mower on the wagon, extend the 5-foot cutter-bar out to one side and run the mower from the wagon wheels, thus enabling me to cut my hedge off as fast as the team can travel. A trip-hook is made as follows: Make a straight shank 18 inches long with a ring at one end. This ring must be drawn out from the shank, turned into a ring, and while at a welding heat, a small cast-iron pulley must be slipped over it and then the weld completed. The hook part should have a shank about 9 inches long with a tooth or teeth cut at the upper end to keep the ring that locks the two shanks together from falling down too far, this ring to be jerked up off of the short shank of the trip part of the hook by a small rope that passes through the little pulley.

If our editor is in a position to make a simple sketch, the trip-hook will look something like this:



TRIP-HOOK AND WINDLASS ON HANDY WAGON

This hoisting rig enables one to jerk up and load on the wagon, a half mile of fence posts without getting off the wagon; simply wrap a chain around them and turn crank of windlass. The loose ring at the bottom of the trip part

of the hook enables one to unload three shocks at a time when the hay-carrier tools are used, as will be described later on.

CLARENCE J. NORTON.
Morantown, Kans.

(To be continued.)

Successful Wheat Farming.

Paper read by Hon. C. B. Daughters before the Lincoln County Agricultural Society, February 14, 1899.

Lincoln County is located in what is known as the "Golden Belt" of Kansas. This is an area of indefinite width, extending across the State north and south. In it Wichita, McPherson and Salina are supposed to be near the center. The width may be considered to be from 100 to 150 miles. The conditions for wheat raising are about the same throughout this belt. The same conditions are necessary for success and the same causes may be assigned for failures. Perhaps the most marked feature of wheat raising in this section is the complete failure of one farmer during a certain year, and the abundant success of his neighbor the same season. The failure of the one cannot be attributed to the season, for the reason that we are taught that Providence is no respecter of persons. The wheat grower will usually tell you that it is not his fault, because he took better care in seeding than his neighbor who has the good crop. One thing that you will notice, however, is that the failures are generally in the same fields. The farmer must consequently bear the blame. But as there is never an effect without due cause, where shall we look for the cause? If you ask the successful wheat grower for his secret of success he will likely have no scientific plan to unfold to you. He prepared his ground in the ordinary way, without any thought of scientific methods. He seeded at the usual time, and that is all he can tell you about it. Notwithstanding the fact that he knew nothing of scientific methods of wheat growing, you will find the ordinary way of the successful wheat grower to be entirely scientific without his being aware of the fact. There was system in his ignorance which brought him an abundant harvest each year. The fact, then, that some farmers do succeed generally in raising wheat is a sufficient ground for the perseverance of all. Those who fail must closely study the elements of success. They must learn the obstacles to success and how they may overcome them.

What, then, stands most in the way of

Two Wagons at One Price.

It is a matter of great convenience and a saving of labor for a farmer to have a low, handy wagon. They save more than half the labor of loading in hauling manure, hay, grain, corn fodder, wood, stones, etc. The man who already has a wagon may have one of these low handy wagons at the small additional cost for a set of wheels. These Electric Steel Wheels, with either direct or stagger spokes, with broad-faced tire, are made to fit any axle. You can convert your old wagon to a low, handy wagon in a few moments' time. You thus virtually have two wagons at one price. Write to the Electric Wheel Co., Box 46, Quincy, Ill., for their catalogue, which fully explains about these and their Electric Handy Wagons, Electric Feed Cookers, etc.



the wheat raiser in this section of Kansas? The soil is all that one could ask. Insects are rarely responsible for failure. Then it must be admitted that climate is responsible for nearly all our failures. In what way, then, does the climate damage or destroy the crop? I suppose it will be generally conceded that drought, freezing and high winds are responsible for most of our failures. Can these obstacles be overcome by the farmer? The fact that some farmers do raise crops in spite of these obstacles is a sufficient answer. Here, then, are the questions to be wrestled with by the wheat raiser. They cannot be answered by hit and miss methods.

In the first place, then, how can we contend with the drought? It has been proven by trial, that, with proper care and cultivation, the soil never gets too dry to sprout wheat and bring it up during the month of September. If the ground is plowed soon after the wheat is harvested and thoroughly dragged each day after the plow the moisture will be conserved sufficiently to bring the wheat up in September. A disk harrow run over the stubble as soon as the crop is removed will keep the ground in good condition for the plow. A stubble field in July and August is a veritable bake-oven and will bake the surface and remove every particle of moisture so that early sowing is out of the question without good summer and fall rains, but we are considering how to overcome conditions of extreme drought. If light rains fall after the ground has been plowed and pulverized and before seeding, a harrow should be at once run over the ground to break the crust and prevent evaporation. A rain in August sufficiently soaking the ground will usually insure enough moisture to bring up the wheat without the precautions I have named.

The ground being in proper condition, the seeding should be done during the last half of September. This will give a good growth of root and blade before cold weather.

Now we come to the next obstacle, that of winter-killing. Can we provide against this? I believe we can. Wheat does not freeze out here as in the Mississippi Valley States. It is seldom killed by hard freezing. It is more often killed by high cold winds when the ground is very dry. It has been observed that in such cases the wheat that survived was in low places made by the farm implements or by tramping of horses and other stock. There are two reasons why the roots in low places survive. The moisture is better retained here and the surrounding earth protects the plant.

Here, then, is a lesson to the wheat grower. The method of seeding becomes a most important factor. And, I may say here, that the wheat drill for this part of Kansas has never yet been invented. With a long sharp-toothed harrow we can pack the ground, but no drill so far made will put the grain down where it ought to be and in good condition. We have the hoe drill, the shoe drill, the disk drill, and the lister drill, but none of them will do the work. The Kansas wheat drill should be an instrument that will make a furrow clean and definite that will occupy a space of 10 to 12 inches in width. It must be made to scour in finely pulverized soil. It must have a broad and liberal press wheel to follow. It should be a six- or seven-row drill, the rows 12 inches apart. The maker of such a drill, in my opinion, will be a benefactor to the wheat grower of Kansas. The drill furrows should be east and west.

If it is thought that the ground is too rough in the spring, a harrow run lengthwise of the row will do no harm to the wheat after it has a good start and will do much toward leveling the land. It will also help the wheat by conserving the moisture should the spring be dry.

We still have the last destructive element to consider and that is the high dry winds of the early spring. We often hear the farmer say that his wheat has been blown out by the high winds. It is not so often blown out as it is blown to death. A high dry wind laden with dust and sand will kill large areas in a single

day. The wheat field that yields up particles of sand and earth most easily suffers most. These simoons of the month of April that come sweeping over the State from the south work more destruction to the wheat crop than all other malevolent enemies or elements combined. Their power seems irresistible and the wonder is that any green things survive. Yet after one of these most destructive storms, when the winds had obeyed the voice of the Master, "Peace, be still," and the bright sun had spread his rays over the almost barren landscape, you and I have looked out over the desert to discover if a single oasis was left to tell of the bright hopes of the farmer only a few hours ago, but now blasted. Yes, here and there in the gray waste may be seen a green field but slightly dimmed by the fearful blasts from the southern desert. Now, if all the wheat fields had been in the same condition as those that survived the storm, would not all of the fields have survived? What was the peculiar virtue that saved any field of wheat from destruction? It has been demonstrated that ground thoroughly pulverized after plowing will not drift so badly in a high wind. It will also retain moisture and make the plant more vigorous. Seeding after the manner I have indicated will protect the plant from the wind. Early sowing will give a good growth which will early cover the ground, and the soil will be held around the plant and serve as the very best protection. On the principle of the deacon's wonderful one hoss shay, the weakest field must be made just as strong as the rest, and then the storms may come and beat upon your fields of wheat and they will not die, because you have planted upon the rock of wisdom.

The Stock Interest.

They Die Anyway--We Call It Cholera--What Can We Do to Prevent or Cure?

By J. E. Hoagland, of Holton, Kans., read before the Kansas Improved Stock Breeders' Association.

In the first place, there is very little hog cholera or swine plague in this section of Kansas. In my twenty years in the State, I have only met with two cases. "But they die anyway," and everything goes for cholera, and if it is not cholera what is it? I claim that more than 50 per cent of deaths by disease are caused by measles. The next largest per cent is from constipation and worms, or perhaps better stated as constipation caused by worms. Worms and lice are the cause directly or indirectly of more deaths in the swine family than all other causes combined. Now, that is no contradiction to my first assertion that 50 per cent die with measles, for were it not for worms or lice measles would not nearly so often become epidemic. I have never known a sick hog that was not lousy or wormy. For hog cholera or swine plague, I do not believe there is a cure, and yet I have seen cases that looked marvelously like cures. Measles can be cured, and with little loss, if taken in its earlier stages and before it has become epidemic. How are you to tell the difference when the symptoms are often nearly identical—often severe and fetid diarrhea, again the bowels very much constipated, the excrement hard and black? But there is this difference in cholera: The flank or belly will be cold and blue; in measles, red and hot and more or less pimply. No pimples in cholera. In cholera the hog seems cold, and refuses to eat or drink. In measles, he has a desire to wallow, and is often very thirsty.

Before I tackle the cure or preventive, I wish to go on record here and now as saying that all the so-called sure-cure hog cholera remedies and preventives that are being peddled over this State are an unmitigated curse—not because there is absolutely no good in them, but because there are so many "goods" in them that there is not enough of one "good" to do any "good," and the greater curse lies in the fact that the farmer puts his faith in the medicine, and it always fails when the disease strikes the herd. I wish I could get the ear of every hog raiser in Kansas, and I wish this association (if they agree with me) would emphasize the assertion, that all patent hog cholera medicines sold over the State by road agents and hawkers are a curse. We live in a day and age when any medicine of merit should be procurable through the regular channels of trade, and the fact that it requires hawking around the country by the smooth-tongued orator, who is here to-day and yonder to-morrow, should be the best reason why it should be let alone, for it is the best proof of its worthlessness. If they are honest when they assert its infallibility, and that they will guarantee a cure, then let them put the remedy in the hands of a reputable druggist, who will make the guarantee good. I firmly

believe that the money thus expended by the farmers and stockmen of Kansas each year would buy ten times as many hogs as it saves.

I said I had seen cases that looked marvelously like cures of cholera. I will give my own experience. I had lost 130 head of hogs in less than eight days, when, one evening, looking through a Philadelphia paper, I saw this item. A lady writing of her recent visit to Illinois, told of the great loss of hogs by cholera, and said: "When I was a girl I remember my father used to lose hogs the same way, and he claimed he could cure and prevent by using the following medicine: One pound of dry sulphur, 1 peck air-slacked lime thoroughly mixed, then 1 pound of copperas dissolved. Then he put the lime, sulphur and copperas together, with 10 gallons of boiling water, and thoroughly stirred for twenty-four hours, and of the settled liquor fed 1 tablespoonful to each hog twice a day at first, then once a day, and later once or twice a week." It struck me (I was in condition to be struck) that here is one of the most sensible things I have seen for a long while. For air-slacked lime is a disinfectant and anti-acid to correct acidity of stomach and bowels, preventing excessive fermentation. Fermentation is not digestion, but is a potent cause for irregularities of the bowels and a great promoter of worms. As long as the bowels are free from undue acidity or fermentation (almost synonymous terms in these cases), a hog cannot have the cholera. Sulphur is a gentle cathartic, acting on liver and sweat glands, causing the heat of the body to set free sulphuric acid, which is a germicide and very largely destroys all microbe life. It is also one of the best remedies to allay internal fever. Copperas, a sulphate of iron, increasing the amount of red blood and removes and destroys any worms that may be located in the intestines; and, taking the three in conjunction, each working in harmony with the other, forms a medicine that I believe will come nearer being a cure than anything I have ever tried, both for cholera and measles. I prepared the medicine carefully. I had three very valuable brood sows that had not tasted food for three days, could not get up at all—if they had stopped breathing they would have been dead. I drenched them through a horn. Two strangled and died, the other swallowed. These two were the only ones I lost, although I had a number that were very sick. I have told a good many of my success. This fall a number have tried it and some have failed, which proves it is not infallible.

In the treatment of measles, I would have a close-sided, tight-floored pen, up off the ground. In this I would put all ailing and give them plenty of cold water—no feed until they call for it, and let them call pretty loud. As a preventive of cholera or measles, I would always keep in a dry place where young and old can get at it at will, air-slacked lime and salt in equal parts. Keep your hogs free from lice. Twice a week put half a pint of air-slacked lime in a barrel of slop, and twice a week put half a pint of kerosene oil in a barrel of slop. Do not feed both at once, but feed lime Monday and Thursday and kerosene Wednesday and Saturday. Feed all your wood ashes in your slop, or at least to tune of 4 quarts to a barrel of slop, and you will find your herd very free from coughs and worms and in grand appetite. I have never had a case of thumps since I have regularly used kerosene oil. The use of kerosene is a great preventive to accumulation of lice; they do not seem to like the flavor. Air-slacked lime and sulphur, in proportion of 5 per cent sulphur, scattered in the dust beds of your hogs will be a great help.

As a rule, we feed too strong. The fashions are for a sleek, fat, mellow hog, often too fat to be a good progenitor, but they look nice. I believe it would be conducive to health if once a week you let your herd lose a feed. Let them get good and hungry. Let this be at night, but do not increase the feed next morning. The boar in good condition will prove more sure and more prolific, and the same with the sows. They will not look quite so nice, but will be healthier and more prolific. This has been my practice the past two years, and my averages have been: In 1897, 9%, and in 1898, 9%, on aged sows; and gilts, in 1897, 7 1/2-5, and in 1898, 7 1/2. And while my averages in weight may be a little light, my averages of weight by litters will be on top. So now, to sum up the whole thing, while "they die anyway," and while we call it cholera, the greatest preventive is good horse sense in our sanitary conditions and feeding. Do not be all the time drugging your hogs, but give such simple, common-sense remedies that are really not so much medicine as balanced rations, and, for one, I believe we will have less disease. And in conclusion, if I have suc-

ceeded in proving how little I know of hogology, I have then filled the program, as I promised our secretary when he invited me to prepare this paper.

DISCUSSION.

Mr. Maguire: I endorse that prescription. I have not used it, but if I did use anything, I would add a little sulphur, and as to the prescription there, I would add about 3 ounces of blood root. That is all I would add to it.

Mr. Clark: I endorse his theory on the cause. I think he said nine-tenths of the disease comes from worms, and my experience has taught me that that is a fact. I think that he is on the right road. I also think that the most of the cholera is not on the creeks. I have a creek running right past the yard, and the hydrant right in the yard, where the hogs can get all the water they want, and I have only once had hog cholera at my place. And my neighbor, Mr. Foster, who lives right above there on the creek, has never had it at all, and some of my other neighbors who live on top of the hill, have had it amongst their swine very badly. I have never had it but once, and I have never discovered that it was any worse on a creek than any other place. Brother Hoagland advocates the idea of slacked lime fed with the slop. I have never fed it that way, never have had occasion to do so, but I keep it before my hogs all the time, in the shape of slacked lime, salt and wood ashes. I have these mixed but never feed it in the slop. Now, Brother Hoagland, do you think that answers the purpose as well as feeding it in the slop? I notice that they always eat it up, it is not lost, but I would like to know what your opinion is about it.

Mr. Hoagland: That idea is quite as good, just so they have it all the time. I do not believe in sour feed for hogs. I have thoroughly satisfied myself that it is detrimental to their health, and by using air-slacked lime in the barrel, they are sweetened. I feed this solution in their slop. I had the case of a neighbor a few days ago whose hogs were coughing a great deal, and I told him to give them two feeds of oil, and it stopped their coughing.

Mr. Updegraff: My idea is that if you keep it before them, where they can get at it as they want it, it is a very good thing. I do not believe in mixtures very much for either man, horse or hog.

Mr. Hoagland: It is not a mixture; it is a ration. Now, any of us young fellows who have raised a family, have had occasion to use a bottle and nipple, and we have always used lime water to keep the bottle clean and to keep the milk from fermenting. That is why I advocate the use of slack lime in slop barrels—to keep them from getting sour, to keep down that acidity, which is nearly always attending upon a slop barrel, and by keeping your barrels clean with this slacked lime, you will find that your hogs do a great deal better.

Experiences of the Auctioneer.

By S. A. Sawyer, read before the Kansas Improved Stock Breeders' Association.

Mr. President and Gentlemen, Breeders and Politicians: I am always flattered when asked to read a paper at this meeting, but after I have heard a lot of the other papers read, I begin to wish, very much indeed, that I had been overlooked.

From my boyhood I aspired to be an auctioneer, not on account of the title that follows the occupation, because, in New England, auctioneers never acquire military titles which indicate high rank, but I was raised on a farm and always liked fine stock and enjoyed the surroundings of the sale ring when they were being sold.

Notwithstanding what I may hereafter say in this paper, I want now to thank the breeders of Kansas and the adjoining States for the very liberal patronage I have received at their hands.

Speaking of titles, reminds me of an occurrence in southern Kansas, eight or ten years ago. A lad old enough to pilot the average livery team was detailed to drive me ten miles in the country. I presume that I was not very sociable, for, during the trip, I was ransacking the garret of my brain to find something bright, if possible, to say in opening the following day's sale. Finally, he broke the long silence, and, looking me squarely in the eye, he asked: "Why do they call the auctioneers Colonel?" This was too much, and I quietly replied that I did not know. "Well," said he, with his eye beaming as only a boy's eye can, "we have got a damn fool of an auctioneer down here, and they have got to calling him Colonel lately."

Twenty years' experience as a stock auctioneer has given me an acquaintance from Chicago to California, Texas, New Mexico, Wyoming, and Colorado, that I very much prize. I believe that no better men live than those engaged in breeding fine stock.

Since 1884, I have made a great many

Swollen Neck

Also Had Great Difficulty With Her Heart—How Cured.

"My daughter had a swollen neck and also heart trouble. After the least exertion she would breathe so hard she could be heard all over the room. She could not sweep the floor or even move her arms without affecting her heart. Her limbs were badly bloated. Her father insisted that she must take Hood's Sarsaparilla, and we gave her about six bottles, when she was cured, and there has been no return of her ailments." MRS. EMMA THOMAS, North Solon, Ohio.

Hood's Sarsaparilla

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

Hood's Pills easy to buy, easy to take easy to operate. 25c.

sales in Denver, during which time I have made the acquaintance of four or five of the Governors of Colorado and very many of the wealthy citizens of the State, who have been liberal buyers of fine stock. Almost without exception they have been especially pleasant men to meet. I have a Kansas breeders' acquaintance that I prize very highly. No better men live in the State.

The duties of the sale ring, in the main, are pleasant. The occupation is not, however, without its hardships, exposures, labors and criticisms. We meet conditions when it is impossible to make good sales. Inferior stock, small attendance, and bad weather will cause sales to be unsatisfactory, and the auctioneer can not help it. I believe selling fine stock or any valuable property at auction an honorable occupation and I have never denied my calling.

There are very many instructive papers to be read at this meeting and the time should be given to them.

A Cream Separator Factory.

Within the last month Mr. A. A. Lister, head of the great manufacturing house of R. A. Lister & Co., Glasgow, Scotland, has been visiting the manufacturing plants of America. Among other places he spent some time at the cream separator manufactory in West Chester, Pa., where the Sharples separators are made.

Mr. Lister is an extensive traveler, and man of information on mechanical lines, his house being one of the largest manufacturers of cream separators in Europe. It was therefore a matter of great satisfaction to the Sharples people to have him pronounce the Sharples the finest and most extensive cream separator manufactory he had ever been in.

The tools in this factory are a marvel of ingenuity, and were a revelation to him, expert as he is. He stood for a long time watching the machine which was making taper steel-threaded sleeves. There was no workman at the machine; it did not seem to need an attendant, but apparently had a brain of its own, so precisely did it go through a train of entirely different and disconnected movements necessary to the turning out of its work. A long bar of steel had been given to the machine out of which to form its work. The machine, automatically, as though with a thought of its own, measured off sufficient length of the steel bar out of which to form its first piece. When this had been done and the measuring tool put away, a drill advanced quickly to the end of the piece to be worked on, and then pausing, slowly bored its way through five inches of metal. The instant it had finished its work, it retired, and another tool, which had been perfectly motionless, quickly advanced and performed another operation. And so followed on one tool after another until eight distinctly different operations had been performed, and the finished piece, more accurately finished than any workman could have done it, dropped into the box where it belonged, and a fresh piece was measured off by the machine to repeat its work on.

Twelve other machines similar to this one were at work on as many different pieces, apparently with very little expense for skilled help or labor, but producing unremittingly a stream of parts, each one an exact duplicate of its mate and of perfect form and finish.

In different parts of the establishment were other series of nearly automatic machines doing very rapidly such work as turning or truing the rims of gear wheels and other parts such as would ordinarily be fashioned by a machinist on a lathe.

Notwithstanding the automatic machinery at work, more than 150 skilled mechanics were kept busy in making

Make Cows Pay.



Twenty cows and one LITTLE GIANT SEPARATOR will make more butter than 25 cows and no separator. Five cows will sell from \$200 to \$300, and one separator will cost \$100. Five cows will eat a lot of feed in a year, but a separator will eat nothing. Moral: Make the cow business pay by using a Sharples Separator. Handsome

illustrated circulars and testimonials free.

P. M. SHARPLES,
 Toledo, O. Omaha, Neb. West Chester, Pa.
 Elgin, Ill. St. Paul, Minn.
 Dubuque, Ia. San Francisco, Cal.

tools and adjusting the automatic machinery, erecting or assembling the separators, testing them and otherwise preparing them for market.

The bowls of the Sharples separators are made from a single piece of imported steel without seam or weld, and though bowls which look just like them could be made from material costing one-tenth of the money, yet the Sharples people will not sacrifice the durability and economy of their goods or endanger the lives of their customers for the sake of saving a few dollars in first cost.

It is claimed for the Sharples machines that though the first separators put out have been in constant use for fifteen years, yet they are in good serviceable working order still.—Country Gentleman.

The Missouri Hereford Sale.

The writer takes pleasure in calling the attention of those interested in good Herefords to the public sale announcement elsewhere in this issue by Messrs. N. E. Mosher & Son, Salisbury Mo., H. C. Taylor & Son, Roanoke, Mo., and J. E. Summers & Sons, Huntsville, Mo. All three of these firms have been engaged in breeding improved and registered live stock for more than ten years and they take pride in announcing that they will each consign 20 head of bulls, cows and heifers, making an aggregation of 60 as well bred animals as can be found in all the West. The writer paid a late visit at the three several farms and found the sale offerings, while not up in show yard dress, were in that condition that insures future usefulness. There will be several imported cows. On an inspection of the tabulated pedigrees found in the sale catalogue, one finds that The Grove 3d, Lord Wilton and Anxiety blood largely predominates and is commingled in the way that makes the breeding of the sale animals very desirable. A major portion of the females in expectancy have been bred to either of the herd bulls, Venture 54351, Earl of Walnut Hill 58997, Prince Grove 2d 50067 or Norwood Chief 70814. The bull, Venture 54351, headed the young herd shown by Mr. Van Natta at the World's Fair and won second prize. The champion cow, Anibel 49161, at the World's Fair, is a half sister of Venture. Venture has not been out for show ring honors in recent years, but some of his sons and daughters, grandsons and granddaughters have made him interesting white-face history. Among them is the great show and breeding bull, Climax 60942, that did so much good at the noted Sunny Slope farm and was sold last December at the Cross sale for \$900. Climax 4th 71031, the champion bull calf in 1897—a show bull in 1898—was purchased by Mr. K. B. Armour to use in his great herd at a cost of \$1,025. Here, then, is both son and grandson of Venture that have achieved a national reputation. There are others, but space forbids their mention at this time. The Earl of Walnut Hill 58997, is a grandson of Cherry Boy 26495, and Roscoe 16509, he a son of Anxiety 4th 99041, a combination of blood the equal of any in Hereford lore. In Prince Grove 2d 50067 one finds both an individuality and breeding hard to be had at this time. His two grandsires were The Grove 3d 2490 and Anxiety 5th 2948. The two granddams, Clover 2115 and Brown Fairy 4043, are daughters of Sir Richard 2d 970 and Remus 3757. His individuality at a glance confirms him an up-to-date beef animal. His style and carriage, too, cannot well be excelled, and, best of all, his sons and daughters are sure extra good ones that confirm him a very excellent breeder. This sale will be held at Salisbury, Chariton County, Missouri, under cover, so that inclement weather will not interfere with the progress of the sale. Salisbury is on the main line of the Wabash railway and parties can easily reach it from all points. On reference to the sale catalogue, a railway time table gives the arrival and departure of all trains. Write either of the parties for a free copy of the sale catalogue.

Gossip About Stook.

The famous Kentucky gaited saddle horse, Eagleite, has been sold by Burton & Burton, of Topeka, to G. W. Evans, of Winston, Mo.

The Ash Grove Herd of Duroc-Jerseys and Poland-Chinas, property of D. Trott, Abilene, Kans., is enjoying the best of health. Nothing suffered during the very severe weather. Sales are keeping up. Several shipments are made every week to all parts of Kansas and other States. A lot of good pigs are looked for the coming farrowing season from choicely selected boars and sows. Care has been used in mating for best results, etc.

Irwin & Duncan, of Elm Beach Farm, Wichita, in sending in change of copy for their advertisement, write: "Our herd is doing very fine and the youngsters are coming on nicely. We have some extra fine young bred and unbred gilts that we are pricing right down to bed-rock to make room for the spring crop of pigs. Sir Charles Corwin and Graceful Chief are both in fine form. Anyone desiring young boars or gilts can make it to their advantage by corresponding with us, or better, making our farm a visit. We will gladly meet anyone at the train."

E. M. Barton, president of the Western Electric Company, Chicago, has bought at Oakawn Farm, Wayne, Ill., the imported chestnut French Coach stallion, Regent, 4 years old, one of the best horses of the breed the late M. W. Dunham ever imported to his farm. Regent was never raced in France but he was in hard training when Mr. Dunham bought him and when tried out for his first race went 2 1/2 miles, with 157 pounds on his back, at the rate of 2:40 to the mile. Mr. Dunham bought Regent on the Thursday before the Sunday on which the horse was to make his first start in a public race. Regent is by Levraut, one of the best of the stallions in the French National stables. His dam, Norma, by Colporteur, 6:56 for 2 1/2 miles, won prizes of honor both as a filly and as a brood mare and was later bought for the government stud on account of her marvelous excellence as a producer. The granddam, Grenadiere, by Noville, 7:01 for 2 1/2 miles, was also a winner of prizes of honor as a filly and as a brood mare. Regent's sire, Levraut, has a record of 5:33 for 2 miles, and his grandsire, Phaeton, sire of Indre, that won so many championships in the show ring on both sides of the ocean, is accounted one of the grandest of all the sires of trotters they have ever had in France. Regent is a superb individual, as well as being fast, and will surely get coach and carriage horses of the true type.

Messrs. W. A. Colt, of Clinton, Mo., and W. W. Gray, of Norris, Mo., held their first public sale of registered Herefords at the Kansas City stock yards sale barn last Thursday. Representative breeders and buyers were out from Missouri, Kansas and Nebraska. The dropping of the mercury 62 degrees within twenty-four hours preceding the sale doubtless kept prospective buyers away and militated to some extent against the sale. The offerings were well bred but had not had care other than ordinary farm handling, hence were not up in the usual sale ring dress. All the 45 head sold were, except 2, under 2 years of age. The 19 bulls averaged 11 months, the females 17 months, and 18 head being under 1 year old. The highest price realized was \$200 each on catalogue Nos. 3 and 12, both going to N. Kirtley, of Savannah, Mo., who secured 9 head to add to his very excellent herd. All things considered, the average, \$101.11, demonstrates that there is a fair remuneration in breeding registered beef cattle. The following fell to Kansas breeders: Lot 1—Heifer, Queen of Diamonds 3d (Vol. 19), T. C. Hall, Farmington, \$65. Lot 8—Heifer, Silver Shade, 75714, O. H. Stewart, Humboldt, \$100. Lot 13—Heifer, Shady Diamond (Vol. 19), T. C. Hall, Farmington, \$110. Lot 34—Bull, Sunlight 2d (Vol. 19), John Holden, Humboldt, \$50. Lot 35—Bull, Schley (Vol. 19), T. S. McCracken, Medicine Lodge, \$80. Lot 38—Bull, Good Times (Vol. 19), W. W. Taylor, Medicine Lodge, \$70. Lot 39—Bull, Alondyke (Vol. 19), T. L. McCracken, Medicine Lodge, \$90. Lot 40—Bull, Ace Trumps 3d (Vol. 19), T. L. McCracken, Medicine Lodge, \$120. Lot 44—Bull, Kadiz 81524, O. H. Stewart, Humboldt, \$160. Lot 45—Bull, Dick Turpin 81521, L. F. Johnson, Winfield, \$135. Lot 46—Bull, Koenig 81525, L. F. Johnson, Winfield, \$125. Lot 47—Bull, Fitz Hugh 81523, Leonard Nelson, Hackberry, \$125. Lot 48—Bull, Commodore (Vol. 20), T. L. McCracken, Medicine Lodge, \$100. Lot 49—Bull, Eddie (Vol. 20), T. L. McCracken, Medicine Lodge, \$100.

Every reader will not fail to notice the big advertisement this week of Acme harrows, by Duane H. Nash, of Millington, N. J. The slanting, slicing cut of the Acme harrow makes its draft much lighter than the old vertical-tooth affair. It packs, crushes, levels, crumbles, drags,

smashes, turns and twists the earth till it is thoroughly mellowed and just right for the seed-bed. Two horses can pull the harrow with a man in the seat with as much apparent ease as they pulled an old-style harrow without a weight, and the ease with which it is moved about from field to field is a great convenience. The uses of the Acme are so numerous that it is hardly fair to call it simply a harrow, and the full title, Acme Harrow, Clod Crusher and Leveler, describes its manifold benefits. It is capital for pulverizing inverted sod to prepare for planting corn. It is well adapted for covering small seeds, and it has taken the place of the roller to a great extent in covering potatoes and corn. The fact that its depth may be accurately fixed makes it the safest implement known for cultivating apple, peach and pear orchards, where it does no injury to the roots.

Publishers' Paragraphs.

"Biography of a Yankee Hinge." This is the title of a neat and very instructive little booklet being sent out by the Stanley Works, of New Britain, Conn. In addition to other things of value, it treats on the Stanley corrugated steel hinges, something which every owner of buildings should know about. It will more than likely pay you to read it. Send to these people as above and they will send you a copy free.

GROWERS OF GOOD SEEDS.—A seed catalogue that stands alone is the 1899 announcement of J. J. H. Gregory & Son, Marblehead, Mass., which they are now sending free to their patrons and friends. It will pay anyone who cultivates the soil for pleasure or profit to send for this little book. It will guide them in getting the best vegetables and finest flowers. It contains, in addition to hundreds of the standard varieties, the famous specialties first introduced by this firm—squashes, cabbages, potatoes, melons, corn, onions, beets, peas and numerous other vegetables. Messrs. Gregory & Son were the first to give a broad-gauge warrant with seeds, and their goods have always been noted for their reliability.

One of the most remarkable mechanisms about the town of Pullman is the great Corliss engine of 2,500 horsepower, which once ran the Centennial Exposition at Philadelphia. It is a simple condensing engine with the Corliss valve gear and cut-off adapted to a vertical engine. It was built in Providence, R. I., by the late Mr. George H. Corliss, in 1876, and required seven months in building. General U. S. Grant started the engine at Philadelphia, the late Dom Pedro, Emperor of Brazil, being also present and deeply interested in the engine. After watching the revolutions of the great fly-wheel for a few moments, Dom Pedro quietly remarked: "This beats our South American revolutions."—Ainslee's Magazine for March.

When spring comes, almost everyone wants to get out and rake leaves and dip in the earth. There are dignified men and women who have admitted that they wanted to make mud pies. But what's the use of making flower beds, and weeding and watering, if your seeds fail to come up, or come up poor and spindling and never bloom? It is the "know how" that is necessary, together with reliable seeds, that will cause your garden spot to bloom perennially, and prove a constant source of health and pleasure. You must begin, of course, with your soil—its quality and preparation—and then the seeds best adapted to your climate. Miss C. H. Lippincott, 319 S. Sixth St., Minneapolis, Minn., is the pioneer seedsman of America. She will send you the daintiest catalogue published, devoted exclusively to flower seeds, from which you can select a choice collection for your garden at very reasonable prices, if you will write and ask for it. If it does not contain all you want to know, you can write to her and she will be very glad to give you further information. She grows her own seeds, and they are reliable, so you need never have the experience of learning that your spring gardening is all for naught, after it is too late to plant again.

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Cures Rheumatism

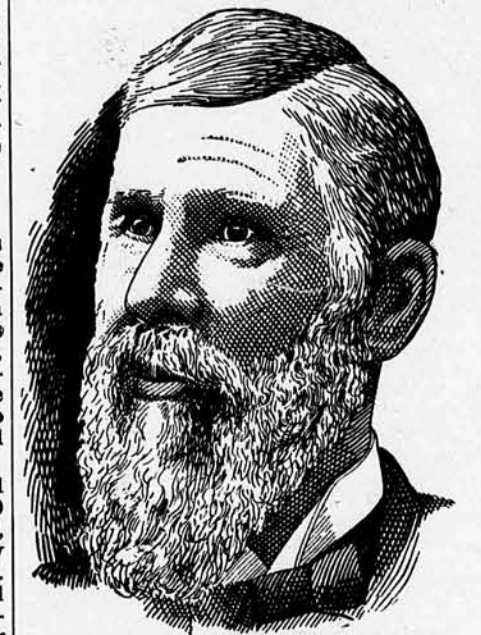
- " Neuralgia
- " Lumbago
- " Sciatica
- " Sprains
- " Bruises
- " Soreness
- " Stiffness
- " Backache
- " Muscular Aches

He Cures Rupture.

Amazing Success of a Plan Invented by Dr. Rice.

No Pain Nor Operation and a Perfect Home Cure.

Dr. W. S. Rice, of 359 B. Main St., Adams, N. Y., who has spent all his life in the study of abdominal rupture has perfected a system of treatment that permanently



MR. H. G. BROWN, Elkton, Ore.

and perfectly cures any rupture no matter how old or severe a case it may be. It would be good news if he only assured his patients of comfort but when he positively and absolutely guarantees that his system will cure, surely this is enough to instill enthusiasm into the hope of the most despairing sufferer.

The doctor has written a book on rupture that explains every detail of his method and this book he will mail free to everyone who writes for it. Dr. Rice is too modest to permit the publication of his portrait but one of his cured patients Mr. H. G. Brown, of Elkton, Ore., a fine old gentleman, consented to allow his picture to accompany his statement regarding the marvelous cure which Dr. Rice caused in his case.

Mr. Brown says: "I am very happy to acknowledge that Dr. Rice's method completely cured me of a dangerous rupture. I have since done all kinds of hard work on a farm and have been as strong and capable as in my younger days before being ruptured. If all ruptured people would try this method I am certain they would be cured as Dr. Rice has a system that is simple, cheap, comfortable, healing and satisfactory to such a degree that from the very first day a man becomes wonderfully relieved and satisfied. I cannot endorse the plan too strongly. It cured me and has cured many others who were encouraged by my success."

Do not be backward about writing for Dr. Rice's free book. It will interest you deeply and tells in a very convincing manner just why he cures rupture. Write to-day. Address Dr. W. S. Rice, 359 B. Main St., Adams, N. Y.

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The Veterinarian.

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the Kansas Farmer. 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 to the Veterinary Department, K. S. A. C., Manhattan, Kans. All such inquiries will receive prompt attention from Paul Fischer, B. Agr., M. V. D., Professor, and A. J. Burkholder, D. V. S., M. D., Assistant, Kansas State Agricultural College.

BLACKLEG.—Mr. F. H. informs me that the Veterinary department of the Kansas State Agricultural College is furnishing a protective vaccine for blackleg, free, to farmers of Kansas. I would like any information I can get in regard to the cause, symptoms and treatment of this disease. I have a dread of losing calves every spring. Please answer through the Kansas Farmer. A. R.

Answer.—Blackleg is one of the most prevalent and fatal diseases with which cattle are affected. It attacks principally animals of from 6 months to 2 years of age, but younger and older cattle are also susceptible to the disease. Blackleg is known by a variety of names, such as symptomatic anthrax, black quarter, quarter evil, carbuncular fever, etc. In France it is called Charbon-symptomatique; in Germany, Rauschbrand, etc. Until recent years blackleg and anthrax were thought to be one and the same disease. They differ, however, in many essential respects, and modern scientific research has proven them to be due to two distinct germs.

Causes.—Blackleg is a germ disease, the germs entering the body, usually with food, but sometimes through scratches or sores in the skin. The germs are very hardy and live in the soil for a number of years. They may be carried long distances and be deposited upon lands heretofore uninfected. The grave of an animal that has died of blackleg will keep a pasture infected for several years, and cattle grazing upon such a pasture are liable to contract the disease; a stream running near such a grave will carry the infection all along its course, and grass cut near the spot will communicate the disease to the animal fed upon it. Cattle driven through a district where the germs of blackleg exist are liable to, and frequently catch the disease. The germs multiply so rapidly and are so easily conveyed that an entire herd or neighborhood may become infected from a single case.

Symptoms.—The characteristic symptom of blackleg is the appearance of a swelling or tumor under the skin. This tumor is usually found on the thighs, though it may appear on the neck, shoulder, breast, flanks or rump. If the swelling is stroked or handled a peculiar crackling noise is heard under the skin, and when it is cut into, a frothy, dark, disagreeable-smelling fluid or a foul-smelling gas discharged. The same diseased condition that caused the tumor also causes a high fever and gives rise to dullness, debility, loss of appetite and rumination. Sometimes an animal lies down before any swelling is noticed, and the disease may develop so rapidly that it will not be able to rise again, and death result in eight or ten hours. Or it may be able to get up and walk about for a time, but the lameness, stiffness and general condition grow steadily worse until death occurs in two or three days.

Post-mortem examination discloses, in addition to the characteristic tumor, infiltration of the tissues under the skin with blood, and a yellowish, jelly-like material and gas bubbles. The muscular tissue beneath the swelling is soft and easily torn or broken up. The spleen is much enlarged and the blood tarry and coagulating feebly.

Treatment—Prevention.—Blackleg is an incurable disease; all remedies thus far tried have proved unavailing; nearly all animals attacked die. The only scientific, practical, economical and satisfactory way of contending with blackleg is to prevent it.

Prevention of Blackleg.—All kinds of remedies and methods have from time to time been tried, but invariably without permanent success. Among the drugs used may be mentioned, hellebore, asafoetida, salt, saltpeter and sulphur, and among the methods employed may be cited setoning, roweling, nerving, bleeding, driving, changing pasture, etc. It is well known that animals of good blood or in good condition are more susceptible to blackleg than inferior stock or cattle in bad condition. The idea, therefore, has been to impoverish the blood or reduce the condition. Cattle are raised and fed for profit, not for pleasure; anything, therefore, that interferes with their rapid growth is a source of loss. The less doctoring a healthy animal has the better; and it is essential for its well-being that it be allowed to graze tranquilly and re-

main always on full feed. All the above named so-called remedies are, therefore, directly opposed to the profitable conduct of the cattle business, as they retard the development and reduce the condition of the stock. Moreover, it is useless to resort to any means which will not actually protect against infection if infection should present itself. As to change of pasture—that is, removal of apparently healthy animals from a pasture infected with the germs of blackleg to a pasture not already infected—this is all very well in its way; but in case of small holdings it is not possible, and it is useless to own or rent pasture if it cannot be used with absolute safety for grazing purposes. Moreover, there would be no security in making such a change, for the new pasture might become infected at once. Bleeding an infected animal is certain to distribute blackleg germs over the pasture, thus spreading the disease, or if not already diseased, the germs may enter the cut or scarified places when traversing an infected pasture and the animal thereby be attacked with blackleg. This method is, therefore, not only useless but doubly dangerous.

It may, therefore, be safely said that none of the remedies or methods heretofore in use have proved of any practical or permanent value for preventing blackleg. It can only be done in one way, and that is by a timely and intelligent application of vaccination.

Vaccination.—Vaccination in general consists in introducing into the system an attenuated virus of the specific disease, which confers such immunity that the subject is for a certain time thoroughly protected against a subsequent attack by the ordinary means of infection or contagion. The virus used for this purpose is derived directly from the germs of the disease in question, and is called "vaccine"; and no substance derived from any other source can be properly called vaccine.

Vaccination was first applied over a century ago by Jenner in the case of smallpox. In 1881 Pasteur discovered the anthrax vaccine, which was shortly followed by the discovery of the vaccine for blackleg. As a direct result of Pasteur's pioneer work in this line, a number of diseases are now readily prevented or immunity conferred by "vaccination." Among others may be mentioned diphtheria, tetanus (lockjaw) and the bite of venomous snakes in the human subject, erysipelas in swine and lockjaw in horses and mules. These preventive remedies are already well known and have been successfully used throughout the civilized world for several years past. So far as blackleg vaccine is concerned, millions of cattle have during the last twelve years been treated and saved, and the vaccine is now extensively used in every land where the cattle industry flourishes and blackleg exists, and particularly in America.

The Veterinary department of the Kansas State Agricultural College has been preparing vaccine for some time, and has distributed, free, to Kansas farmers sufficient to vaccinate over 25,000 head. The demand is steadily increasing, and no doubt 50,000 head will be vaccinated this spring. Directions are furnished with every lot of vaccine sent out, and farmers have no trouble understanding just how to prepare the vaccine for use, and how to inject the prescribed quantity under the skin with a hypodermic syringe.

Health for ten cents. Cascarets make the bowels and kidneys act naturally, destroy microbes, cure headache, biliousness and constipation. All druggists.

TO CURE A COLD IN ONE DAY
Take Laxative Bromo Quinine Tablets. All druggists refund the money if it fails to cure. 25c. The genuine has L. B. Q. on each tablet.

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To take orders for STEVE'S STOVE SHINER. Agents make from \$2 to \$4 per day. Send 25 cents for canvasser's outfit and commence work at once. Address STEVE'S STOVE SHINER, 2262 Arapahoe St., Denver, Colo.

Farm Wagon for Only \$19.95.

In order to introduce their Low Metal Wheels with Wide Tires, the Empire Manufacturing Company, Quincy, Ill., have placed upon the market a Farmer's Handy Wagon, sold at the low price of \$19.95. The wagon is only 25 inches high, fitted with 24 and 30-inch wheels with 4 inch tire.



This wagon is made of best material throughout, and really costs but a trifle more than a set of new wheels and fully guaranteed for one year. Catalogue giving a full description will be mailed upon application by the Empire Manufacturing Co., Quincy, Ill., who also will furnish metal wheels at low prices made any size and width of tire to fit any axle.



The dread and foreboding which almost invariably comes over a young wife, just ere the advent of the first little darling who shall call her mother, is one of the unnatural burdens which civilization has imposed upon the privilege of motherhood. There ought not to be such an overwhelming sense of depression and weakness as a woman feels at this time and there would not be if she was in a perfectly strong and healthy condition. In thousands of cases motherhood has been divested of all its dangers and a large proportion of its pain by the use of Dr. Pierce's Favorite Prescription, which is the most marvelous remedy ever discovered for restoring complete organic health and strength to the delicate special structure involved in motherhood. Taken early during the prospective time it makes the mother strong, energetic and cheerful and carries her through the period of trial with comparative comfort and ease. It increases the baby's natural, constitutional vigor and adds to the joys of motherhood the supreme satisfaction of a strong, robust, lusty infant. "Favorite Prescription" is also the best supportive tonic for nursing mothers. Every expectant mother will appreciate what is said by Mrs. Fannie M. Harry, of Galesburg, Ill., (545 Churchill Ave.) In a letter to Dr. Pierce she writes: "I have used your medicines in my family for a long time, and find them to be all that is claimed. I cannot recommend them too highly. My confinement was made easy, as I experienced none of the pains such as others have at that period, and the first born the one that mothers fear so much. Besides, the medicine has helped me in many other ways. I would recommend all afflicted women to try Dr. Pierce's valuable medicines, and thus become well and strong."

DON'T SET HENS The Same Old Way. The NAT'L HEN INCUBATOR beats the old plan 3 to 1. 100-Egg Hatcher \$2. Cheap in price but a mighty money maker. Send for cat'g telling how to get one free. Agents wanted. Natural Hen Incubator Co., 153, Columbus Neb.

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Royal Blue Barred Plymouth Rocks, White Plymouth Rocks, Partridge Cochins, Buff Cochins, Silver Cochins, Light Brahms, Black Langshans, Silver Wyandottes, White Wyandottes, Brown Leghorns, White Leghorns, Silver Spangled Hamburgs, Black Javas, White Guineas, Pearl Guineas and Pekin Ducks. Pairs, trios and breeding pens. Prices low, considering quality. Circular free.

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Prof. Axtell heals all manner of diseases, and teaches this art to others.

He grants to all men the power he claims for himself. The reason why he can heal without medicine is because he knows how; he not only cures all manner of diseases in his office but HE CURES AT A DISTANCE WITH EQUAL EFFICACY. Circulars of many prominent people—who sign their names and recommend his treatment—mailed on application. Prof. Axtell is endorsed by the leading business men of this city. Address all communications to

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The cheapest source of Protein for a Balanced Ration.

Will produce richer milk and more of it; a more rapid growth and development of Cattle and Hogs, and better meat for market purposes than any other feed on the market. Highly recommended by Prof. H. M. Cottrell, of Manhattan Agricultural College. For information and prices address

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DO YOUR OWN... GRINDING
with one of our **FARMER'S FRIEND** Sweep Feed Mills. The farmer can save mill tolls and save cost of hauling. It has adjustable force feed, steel ball bearings, burrs 30 in. diameter and self-sharpening. Write for circulars and prices. **KELLY & TANEYHILL, Waterloo, Ia.**

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If you are going to pay for a carriage why not pay the least you can for the best vehicle? Get all you can in material and workmanship—pay as little as you can for handling and "extras."

You save the jobber's commission and the retailer's profit when you buy direct from the factory. You pay the cost of making with one moderate profit added. We are not agents, but manufacturers of buggies, carriages, surreys, phaetons, wagons, harness and horse accessories. Everything guaranteed. With our illustrated catalogue you can order easily and safely. If what you order does not suit, send it back and we will pay the freight both ways. First, get the catalogue. You are welcome to a copy.

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THE MIDDLEMAN'S MONEY

makes the fence no better. Then why pay him a lot of extra money? Why not save that amount by buying from us at wholesale prices? We do not impair the quality to make our fence cheap. In fact, we depend upon the quality to hold your trade. We could not sell the

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as cheaply as we do if we had to sell it through the dealer. When you buy from us you only pay one profit, when you buy from the dealer you pay two profits. Send postal card for circulars and prices.

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Gold medal awarded to Anchor Fence at the Trans-Mississippi Exposition, Omaha, 1898. The best wire fence on the market. Mention Kansas Farmer and write for full particulars.

The Home Circle.

OUR CASTLE IN SPAIN.

The street's bleak and long and the rain's blowing cold;
They eye me with pity, grown weary and old;
They fancy I'm out in the wind and rain;
Ah, no! I'm at home in our Castle in Spain.
In the glow of the firelight you stand by me there;
It flickers and plays on your shadowy hair.
Outside, in the city, I seek you in vain,
But still you are found in our Castle in Spain.

I hear not the roar of the traffic; I hear
Your accent, so low, and so strange and so clear;
The voice that could bid one forever remain
With you in our castle—our Castle in Spain.
That castle's so fair, so enchanted the ground,
The springtime abides in it all the year round;
There leaves never wither, as hopes never wane;
The lime-trees aye bloom by our Castle in Spain.

Yet the winds that blow o'er the whole earth renew,
And the stream 'neath its ramparts has flowed the world thro';
And I read in your eyes a love deeper than pain,
Love stronger than death, in our Castle in Spain!

Wherever you wander, ah, you I love best!
When you from our refuge realities wrest,
I wonder if you are as glad to regain
Our fortress, our haven, our Castle in Spain!
—New York Ledger.

A ROYAL ROMANCE.

As old King George the Second was taking the air in Kensington Gardens one fine summer morning in the middle of last century a little girl of some five years, who was walking with her sisters and the Swiss nurse, broke away from the party, skipped up to the King, dropped a courtesy and greeted him with the remark, "Comment vous portez-vous M. le roi? Vous avez ici une grande et belle maison, n'est-ce pas?" The old King, familiar and perhaps bored with the pomp and etiquette of his usual relations with his subjects, was pleased beyond measure at the originality of this introduction. He took notice of the child, often had her to visit him at the palace afterward, even romped with her and put her in a large china jar, where, instead of showing fright, she sang "Malbrouck, s'en va-t-en guerre" at him from under the lid. The little lady was Lady Sarah Lennox, and as daughter of the Duke of Richmond, a great officer of the court, she and her sisters had the privilege of being in the grounds to see the royal promenade. It was the pettiest entrance imaginable to the great world where this young lady was destined for a time to play a great part. Ten or a dozen years later all fashionable London was agog with excitement, wrote letters, reported every movement and every rumor of Lady Sarah, for it was the question of 1761 whether she was or was not to become Queen of England.

In 1758 Lady Sarah entered London society, and returned to the care of Harry Fox and his wife at Holland House, a tall, beautiful, shy girl of fourteen. Two years later the town was in raptures, in fact, all of the young men were making sheep's eyes at the beauty of sixteen. There was my Lord Carlisle; my Lord Errol, whom she refused; my Lord Newbottle, with whom she flirted desperately; Mr. Thomas Bunbury, whom she afterward married; and no doubt a score of others whose names are not recorded. Last of all, there was the Prince of Wales, now become George III of England, who was a willing victim. He saw Lady Sarah often. There was no flirtation here; the King was in deadly earnest. There was no stupid royal-marriage act in force; this the King, perhaps in the light of his own experience, thoughtfully provided for his relations when they began to marry into Harry Wolpole's family. But at present the King knew his own mind, and there is no doubt that, if Lady Sarah had known hers, she might have ascended the throne in 1761 as Queen of Great Britain and Ireland.

Shortly afterward Lady Sarah went into Somersetshire, rode out, fell with her horse and fractured her leg. The faithless Newbottle made some unfeeling remark when told of the accident. The faithful King was all solicitude for the suffering young beauty. The young girl at last, perhaps, knew her mind, but it was too late. There was more in the rumor of the Princess from Mecklenberg than Fox thought. It was all over; there was no doubt about it at all. The King summoned the council to announce the marriage, and Lord Harcourt went over for the Princess, and the little self-possessed lady came across the Channel to Harwich, and was not seasick for about half an hour, but sang and played on the harpsichord nearly all the way. Poor Lady Sarah!—and her troubles were not

over yet, either. The King selected her as one of the bridesmaids, "all beautiful figures," says Mr. Walpole, "but with neither features nor air; Lady Sarah was by far the chief angel." The marriage did not take place till 10 at night. There were the pretty bridesmaids, with Lady Sarah at their head, all in a row; and the King had more eyes for Lady Sarah than for his bride all through the ceremony. Westmoreland, the old Jacobite, who has hardly any eyes at all, mistakes Lady Sarah for the Queen, drops on one knee, and takes her hand to kiss it; Lady Sarah has to draw back, with a blush, and cry, "I am not the Queen, sir," and George Selwyn utters that bitter jest: "You know, he always loved pretenders." Did ever romance end in such embarrassment for a poor young girl of sixteen?—*Cornhill Magazine.*

The Dewey Medal.

By the courtesy of the sculptor, Daniel C. French, Harper's Weekly is able to publish the first authentic reproduction of his completed design for the Dewey medal. The Tiffany company will cut the dies and strike the medals in copper—1,635 in all.

Upon the obverse is a life-like presentation of the head of Commodore Dewey, with the following inscription: "The gift of the people of the United States to the officers and men of the Asiatic Squadron under the command of Commodore George Dewey." Upon the reverse, surrounded by the words, "In memory of the victory of Manila Bay, May 1, 1898," is the figure of a young sailor, stripped to the waist, who sits upon a gun, with the flag across his knees, and one foot resting upon a swinging loop of rope. In this beautiful figure Mr. French has admirably embodied the genius of the episode



The Dewey Medal.—After a drawing in Harper's Weekly. Copyright, 1899, by Harper & Brothers.

in its highest and purest aspect—the spirit of the fleet, such as one's imagination may picture it to have been on that memorable morning, and also the spirit of the country on whose behalf it was going into action. The chief characteristic of the face in youth—the beauty, confidence, and pure intention of youth. In the pose of the figure are alertness, fearless uprightness, and the unconscious grace and composure of assured strength. The very disposition of the flag is suggestive. The moment represented is not the one of victory, but of preparedness thereto. The flag is not a menace to the world, nor under the pretext of its name is a policy of aggrandizement foreshadowed. It is safe in the keeping of Young America, and when the cause is right it will be uplifted.

Its placing in the circle secures an admirable balance between the varied portions and the flat ones very enjoyable to the eye. The strong horizontal bar formed by the cannon, low down in the space, lifts up the lithe figure of the youth, and gives it a dignity and sense of size very difficult to obtain in so small a compass. Again, the poise of that foot upon the rope—observe how exquisitely sensitive it is!—brings into the narrow space

at the bottom an interest and distinction which make it contribute to the decoration of the whole. Lastly, the whole possesses that quality which is such a charm of low relief—"enveloppe" as the sculptors call it. Atmosphere is, perhaps, our nearest English word; the pattern of the decoration is not one merely of light and dark, but of several degrees of light and several degrees of dark, as if viewed through varying planes of atmosphere. The result is, though, not hard and gritty, but luminous, rich, and velvety.—*Harper's Weekly.*

Making Both Ends Meet.

When a woman has but slim means and no one to support her, there are two methods of making both ends meet. One is to add to her means by work, remembering that "a dollar saved is a dollar earned."

Learn to take care of what you have, to make use of everything, to turn everything to account, to make one article serve for many purposes. Try earnestly to be content with little, to have simple wants, and not to crave unnecessary things. There is a virtue once possessed in large measure by our grandmothers, the pride of New England women in olden days, now almost gone out of fashion, which we should do well to cultivate anew before it becomes quite extinct—the good old virtue of thrift.

For instance, never throw away your old stockings when you think them past darning. Cut them over, using the legs of two pairs to make one. Stitch closely a narrow seams; then fasten it open, flat, by cat-stitching. You think seams will hurt your feet, but you will find they will not. Oh, there are many things we can do, if we only think so.

When your black or colored dress skirts become worn and shabby about the bottom, make petticoats of them. There is no need to buy petticoats. Use what you have and save the buying. A partly worn challi makes a convenient short petticoat, to use instead of flannel, and so does nuns' veiling, or albatross. These are light and comfortable to wear, easily washed, quickly dried, and do not shrink. Cotton dress skirts make first-rate work aprons, and, if not faded, shirt waists.

If your under-flannels have shrunk, open the seam under the arm and set in a piece from the armhole down to the bottom, making one good vest, out of two useless ones. Worn-out flannels make good floor-cloths and window-cloths. Cut out the good bits from flannel skirts to use in mending, or in sickness, or for making bags (most useful in damp houses) for slipping over flat-irons, knives or silver, when not in use. Never throw away a square inch of flannel or woolen stockings or gloves. Chopped into little bits with scissors and collected in a box, they make the very nicest stuffing for pin-cushions.

Ragged towels can have the good parts used as wash-cloths or dish-cloths. Worn or faded aprons may be cut into squares and hemmed, for tying around the head in making fires and sweeping. A square is preferable for this purpose to a sweeping-cap, as it protects ears and neck. A square cut from an old challi or woolen dress is very nice to tie over your head if you have to wash your own windows or hang up your own clothes. Always keep one of these squares handy, with a safety-pin in it, ready for use.

A good dress or wrapper may be made out of a shawl. In summer, shawls are very nice instead of blankets. Sometimes they make nice table-covers, curtains, etc.

Save even worn-out handkerchiefs. Have them in rolls, ready for use in case of wounds.

Old silk and woolen gloves can be used to mend others, sometimes putting in a whole new thumb. They make most beautiful dolls' stockings. Old kid gloves make penwipers, or give them to some friend who wears a size smaller than you do. Then beg from the friend who wears a size larger than you do her cast-off ones, to protect your hands in making fires, dusting, sweeping, and handling flower-pots.—*Lella D. Collins, in Demorest's Magazine.*

Fame for Young Men.

The recent death of Hon. T. J. Byrnes, Premier of Queensland, at the early age of thirty-eight, draws attention to the remarkable number of young men who reach high places at an age when in more deliberate epochs a man had scarcely settled down to his career, says the London Mail.

Although William Pitt, the boy Premier, has no rival even in these days of rapid careers, there are hundreds who achieve fame and position within twenty years of leaving their books at school or college.

Mr. Cecil Rhodes was treasurer-general of Cape Colony at thirty-one and Pre-

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mier at thirty-seven, and Sir Alfred Milner was chairman of the board of inland revenue at thirty-eight, and at a few years over forty holds one of the most responsible posts in our empire.

The new Viceroy of 280,000,000 in India was a minister of the crown at thirty-two.

Lord Rosebery owes little to his rank that he was in the ministry at thirty-four, and prime minister at forty-seven; and Mr. Arnold Morley, still on the hopeful side of fifty, was chief liberal whip and secretary to the treasury at thirty-seven.

In music Pietro Mascagni was twenty-seven when he woke to find that his "Cavalleria" had made him famous; Mr. Hamish McCunn, the clever young Scotch composer of over one hundred songs and operas, overtures and cantatas without number, is still a young man of thirty; and Sir Arthur Sullivan did some of his best work while in the twenties.

Marconi, the inventor of wireless telegraphy, is only twenty-three; and Edison was little more than a boy when his name was known in two continents.

But it is in the field of letters that youth claims the richest harvest. It is the "Paradise of Youth," and a man who is not crowned before he enters the thirties is in danger of going uncrowned for the rest of his life.

Mr. Anstey was twenty-six when he wrote "Vice Versa;" Mr. Jerome was three years older when "Three Men in a Boat" appeared. Mr. Barrie was twenty-eight when "Auld Licht Idylls" pointed the way to fortune. Mr. Rider Haggard wrote "King Solomon's Mines" at thirty.

Mr. Rudyard Kipling was barely of age when he wrote "Departmental Ditties," and his "Plain Tales from the Hills" appeared at twenty-two. Mr. Israel Zangwill did his best work in the "Children of the Ghetto" when he was twenty-eight.—*Baltimore Sun.*

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An' ac' so slouchy an' all fagged out,
Danglin' their legs as they drone about
The hollyhawks 'at they can't climb in
'thout 'ist a tumble-un' out ag'in!
Wunst I watched one climb clean' way
In a Jimson blossom, I did, one day—
An' I 'est grabbed it—an' nen let go—
An' 'Oh-oooh! Honey, I told ye so!'
Says the Raggedy Man, an' don't laugh
none,
An' says, "They has b'en folks, I guess,
'At thought I wuz prejudst, more or less—
Yit I still muntain 'at a Bumblebee
Wears out his welcome too quick for me!"
—James Whitcomb Riley.

THE CORONATION CHAIR OF ENGLAND.

This chair, known as the chair of St. Edward, is of the utmost historical interest. It is an antique seat of hardwood, gaily painted, and was used in ancient times for the coronation of the Kings of Scotland. Edward I, known as Longshanks, brought it to England in 1296 after defeating the Scottish King, John Balliol, at Dunbar. Since then the chair has been kept in Westminster Abbey, and every ruler of England has been crowned on it. Under the seat, twenty-four centimeters from the floor, is a board supported by four lions. On this rests the famous Jacob's stone, or stone of destiny, on which Jacob's head is said to have rested when he dreamed of seeing the ladder which reached to heaven. This stone was originally the royal chair of Ireland. It was called Pfafal, or the stone of fate. There is a tradition that a descendant of the Scottish Kings will always reign in the country possessing this treasure. This stone is said to have been taken to Spain by Cathol, King of the Scots, but was brought back to Ireland by Simon Brech, leader of a band of Scots, about 700 before Christ. The gods themselves gave this stone to the Scottish people with the promise that a scion of their race should always reign over the land which retained possession of this relic of antiquity. Sir Walter Scott gives the following history of this stone: Fergus, son of Eric, probably a descendant of Simon Brech, was driven out of Ireland and landed in 503 B. C. on the coast of Argyleshire, in Scotland, bringing the stone with him. Later on it was brought by King Kenneth of Scotland to Scone Castle, and the Scottish Kings were crowned on it from that time till Edward I destroyed the royal residence of Scone and took the stone to London, where it has remained ever since.

The Scots formerly believed that it gave forth musical sounds when the rightful ruler seated himself upon it, but remained mute when a usurper was crowned. The conveying of this stone to England was regarded as a national humiliation by the Scots, and in the treaty concluded between England and Scotland in 1328, one of the conditions was the return of this ancient treasure. Edward III gave orders that it should be sent back, but for some unknown reason they were never obeyed. When James VI, of Scotland, ascended the throne of England under the name of James I the aforementioned prophecy seemed to have been fulfilled. The stone is undoubtedly a relic of remote antiquity. It is not, however, of meteoric origin, as many have maintained, but a block of red sandstone containing an unusual proportion of iron. It was once carved, gilded and painted, but these decorations have entirely disappeared. In modern coronations it is covered with cloth of gold.

The Ampulla, or vessel which contains the consecrated oil used to anoint the sovereign, is in the form of an eagle, which rests with outspread wings on a pedestal, the whole being of gold, exquisitely wrought. The oil flows from the beak of the eagle. In former times the King was anointed on the head, under the arms, on both shoulders, between the shoulders, on the breast and on both hands. In modern times there are only three anointments—on the head, breast and hands, typifying glory, holiness and strength. A strange legend attaches itself to this Ampulla. This is to the effect that King Henry IV was anointed with oil given in this sacred vessel to Thomas-a-Becket, Archbishop of Canterbury, by the Blessed Virgin. He received it while in exile, and the Blessed Virgin assured him that all rulers of England who were anointed with this oil should be mild in their rule and staunch defenders of the faith. This eagle-shaped vase was lost for a long time, but was at length brought to light in a most remarkable way. When Henry, Duke of Lancaster, was in foreign parts on a warlike cam-

paign, the vase was unexpectedly presented to him by a holy man to whom its hiding place had been miraculously revealed. The Duke gave the vessel to Edward, the Black Prince, who placed it in the Tower of London. It was deposited with the utmost care in a carefully locked casket, but casket and oil both disappeared, so that it could not be used in the coronation of Richard II. It was again found in 1399, together with a manuscript of Thomas-a-Becket's, promising all manner of blessings to those Kings of England who should be anointed with this oil. This made so deep an impression on Richard II that he applied to the Archbishop of Canterbury to anoint him again. The Archbishop, however, persisted in refusing, on the ground that the sacrament of unction, like that of baptism, could not be renewed. Richard took the chalice with him on his unlucky journey to Ireland, and on his return to Chester delivered it to the Archbishop, saying: "It is evidently the will of God that I shall not be anointed with this oil. That blessing is reserved for a more fortunate monarch." The Archbishop kept the oil till the coronation of the usurper, Henry IV who was the first English King anointed with it. The original Ampulla which Thomas-a-Becket received from the Blessed Virgin was destroyed with the rest of the royal insignia in the time of the republic and new regalia provided for the coronation of Charles II.—Roman Bibliothek.

An Invincible Horse-Tamer.

His name was John S. Rarey. Early in the century his father, a Pennsylvania Dutch farmer, cleared a tract of forest land on the outskirts of Ohio's capital. On this virgin spot was built a log cabin, in which the future horse-tamer was born. The cabin in time became the beginning of the village of Groveport, known half a century ago to lovers of horses throughout the civilized world.

While a babe in his mother's arms it was young Rarey's delight to watch the animal life on the farm. To pet the horses and cows was ever to the boy a keen pleasure. When he could make his way alone to the farmyard it was observed that the friskiest colts were docile under the caressing strokes of the child's hand. John was the youngest of seven children. At this period he was the only child at home. The Rarey farm was isolated. Many miles lay between neighbors. Having no youthful playmates, his warm little heart made friends of the chickens, the cows and the colts. At the age of 3 years it was his delight to ride astride the plow horses.

One significant incident in the childhood of the "invincible horse-tamer" was frequently related by his mother. It occurred in his fourth year. The family being at the dinner table, one day, it was discovered that the chair of the youngest was vacant. A servant was sent in quest of the truant. The fields, the barns, the hay-mows were searched in vain. A terrific scramble was heard, at length, in the gravel roadway near-by. To the horror of the distracted household, Johnny Rarey was discovered upon the back of the wildest colt on the farm.

Expecting to see the child fall to the ground every moment, the father started to his rescue, but, to the relief of the household, colt and rider soon reined up in safety at the barn door. When reproved for his conduct the infant replied that he and the colt were the best of friends. To convince his father of his mastery of the colt he mounted and dismounted, bridled and unbridled the animal, who, to the astonishment of the spectators, submitted to his young master's directions. His control of the colt was much talked of in the neighborhood. From that time the young horseman was in great demand to carry messages between the scattered farm-houses. Before his ninth year his reputation for horsemanship in that part of the country was unrivaled.—St. Nicholas.

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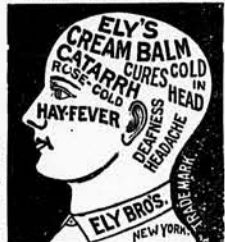
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KANSAS EDITORS IN SESSION.

The Kansas Editorial Association met in annual session in the new library room in the State House, last Tuesday and Wednesday. The wide-awake crowd got together first on Tuesday evening and listened to a few well-prepared papers by members of the craft. On Wednesday morning the all-important and perennial question of the county printing came on for discussion. This, to the publisher of a county paper, is a question of vital interest. Like other business men competing for patronage, the publishers are frequently led to bid against each other to the extent that the work is done at less than cost. The discussion showed that those interested are far from unity of opinion as to the best plan of remedying the evil.

The morning session wore quickly away, and the excursion of the afternoon easily got the attention of the members. The jolly, round-faced advertising manager of the Santa Fe Route had established himself in a corner of the room and provided each editor and one member of his family with the necessary authority to ride to Kansas City. The Kansas City Commercial Club had invited the members of the association to be its guests at a 5 o'clock dinner at the Midland Hotel and at the grand concert by Sousa's famous band opening the new convention hall upon which the city so much prides itself.

This building has a seating capacity of nearly 15,000. Of this number between 4,000 and 5,000 can be accommodated on the arena floor. The floor has an area of 60,000 square feet. Three thousand can find seats in the arena balcony and boxes. In the colonnade and the roof garden are about 6,000 or 7,000 seats. Every seat is within plain hearing distance of the stage. The great sounding-board over the stage sends the sound to the farthest point in the hall and a strong voice can be plainly understood from any place in the building. After all the seats are placed in position, the seats and standing room would be sufficient, it is estimated, for 30,000 people. The outside dimensions of the hall are 198 by 314 feet.

In this great hall Sousa's band had a rare opportunity to display its matchless powers. The writer does not claim to be a judge of music, but is of the opinion that until one has heard Sousa's band he has missed hearing the perfection of music.

The editors enjoyed the music and afterwards watched the animated scene in the arena where some 1,500 dancers kept time to Sousa's band music on the new waxed floor. The wealth and fashion of Kansas City was there with liberal reinforcements by their friends from other cities.

Kansas editors are a hard-working lot of people. The great majority of them both edit and own the papers under their charge. In this respect the newspapers of Kansas are in their best estate. The work done by them is the result of direct contact with the people. Their political relations make them the best exponents of the trend of political thought, while their sense of obligation to the right is the best check upon unscrupulous political methods. It will be well for Kansas if her papers shall always be controlled as now, and shall always, as now, represent the best in their several communities.

THE NEXT FINANCIAL PANIC.

There are persons, besides those who believe that all wisdom emanates from Boston, who like to know what Boston has to offer in the way of prophecy. That "general prosperity" and "panics" are instruments in the hands of the crafty whereby accumulated wealth is made to change hands with considerable periodicity has been observed by others than the beneficiaries of such change. Now comes the American Cotton and Wool Reporter, of Boston, with a foreboding and warning prophecy, from which the following is taken:
 "This country is unquestionably entering one of the most prosperous periods in its history, and a discussion of the next financial panic may seem very much out of place. It will not, of course, be a great many years before another crash takes place similar to that of 1893. Panics occur on an average about once in ten years, quite in accordance with Mr. Herbert Spencer's undulatory theory. Eighteen hundred and seventy-three was followed by 1884, and after that came 1893. According, therefore, to the law of averages another catastrophe should be due in 1903 or 1904. Special circumstances—such as the unexpected openings for foreign trade by this country—may delay the crash somewhat, but the only result of postponing the inevitable will be to increase the hardship when the end comes.

The subject is a ghastly one; and we should not refer to it at this juncture, were it not that the links out of which the next panic is to be constructed are

being forged before our very eyes. To put the case very plainly, a state of affairs is being evolved which must inevitably produce a financial crash of the greatest magnitude.

"Trusts are the agency which will produce the next panic in this country, and we are of the opinion that the wreck will equal any that have preceded it.

"In one way or another, panics are always the result of inflation. Early crises in this country were produced by inflating land values, or bank note issues. That of 1873 was occasioned by an inflation of general prices. The panic of 1893 was produced by silver inflation. The next occurrence will unquestionably be traced back to the present inflation of corporation capitalizations; in other words, to the appalling stock watering of to-day. Trusts were, so to speak, in their infancy in 1893, but they nevertheless contributed powerfully to the disturbances of that year. The rubber trust and the leather trust had not been under way sufficiently long to be brought into the vortex; but those who care to refresh their memory will recall the part played by some of the older combinations, such as the cordage trust and the General Electric Company.

"The manner in which the shares of these concerns dropped when the panic struck the market was calculated to astonish the oldest habitues of Wall street. During the week ending May 4, 1893, National Cordage stock dropped from 61 1/4 to 18 1/4; in August it was down to 7. In the first week of the panic, General Electric fell from 100 to 80, and in the following week it touched 60; in July it was at 32. Such was the rapidity with which the prices of the shares of two trusts sought their proper level when the cataclysm of 1893 engulfed the financial interests of the United States. The process of squeezing the water out of National Cordage and General Electric was almost instantaneous.

"Where there was one trust in 1893, there are now a dozen. Since January 1, 1898, at least \$1,700,000,000 of securities have been created by new trusts, and the movement seems to be gathering momentum every day. A very considerable portion of this new capitalization is 'water,' pure and simple, and no demonstration is required to convince a rational mind that such inflation must necessarily occasion a crash that will shake the very pillars of American industry some day. The world has witnessed many insane movements in the pursuit of gain, but nothing that exceeded in folly the present trust mania. Trusts are established for the avowed purpose of diminishing competition, but it is obvious that, under the procedure adopted, they are bound in the nature of things to intensify competition. The cost of starting any particular industry is certain to be diminished each year; and the inevitable result will be a crop of new competitors to the present trusts, which by taking advantage of all the new economies and by keeping their capitalizations down to legitimate figures, will force the water-logged concerns of to-day to the wall. The end will not come without a tremendous crash."

March Notes.

- Push the grass and clover seeding.
- Sow oats at the very first opportunity.
- Make a little early garden as soon as possible.
- Set out the raspberry plants at the first opportunity.
- Rolling the ground often benefits the fall-sown wheat.
- Even sheep will be better if sheltered until settled weather.
- Do not let up on the feeding until grass has made a good start.
- All dam that have young offspring should have special attention.
- Put rings in the hogs' noses before giving them the run of the pastures.
- Dock and castrate the lambs before turning the sheep into the pastures.
- Oats can be made a good part of the horses' grain rations now with profit.
- Washing twice daily with salt water is a good way to harden the horses' shoulders.
- Put in a day thoroughly cleaning up and renovating the horses' stables, then whitewash.
- After the oats and clover are sown push the work of plowing so as to plant the corn early.
- If not done last fall, dehorn all of the cattle, young and old, before turning out in the pastures.
- When setting out trees or plants of any kind, be sure that the soil is filled in well around the roots.
- It is of little use to spend time attempting to spray unless thorough work can be done and the operation repeated as

needed in good season. Thoroughness is necessary for effectiveness.

Grow cultivated crops in the orchard until the trees come into bearing.

Keep well up with the work. To get behind now too often means keeping behind the whole season.

The peach can be pruned at any time now; cut back the new growth of wood from one-third to one-half.

In transplanting trees or plants, care should be taken never to allow the roots to become dry; it means death.

Usually it is a safe plan to sell out of a particular kind of stock when prices are very high and to buy in when prices are low.

If you have made a success of any particular crop, be a little slow about discarding it and taking up with something entirely new.

One advantage in breeding the mares early is that they will be able to do more and better work during the spring and the colts can be managed better.

Eldon, Mo. N. J. SHEPHERD.

PLANT BREEDING.

(Continued from last week.)

THE LAW OF CROSSING.

As soon as differentiation of plant forms had gone far enough for the development of sexual organs, laws governing the use of those organs must have been a necessity. It behooves the plant breeder to understand those laws if he can. As soon as we approach this subject of crossing we perceive another case where nature seems to contradict herself. Darwin says: "Flowers are constructed so as to gain two objects which are, to a certain extent, antagonistic, and this explains many apparent anomalies in their structure." I surmise that he means that one object is the production of seed at any cost, the other, cross-fertilization.

In 1793, C. K. Sprengel published a book entitled "Das Entdeckte Geheimniss der Natur" (The Disclosed Secret of Nature), in which he proved by many observations how essential is the part that visiting insects play in the fertilization of plants. However, he did not discover the use of such visits and such fertilization to the plants. Thomas Andrew Knight saw the truth much more early than Sprengel, for he remarked, in 1799, that "Nature intended that a sexual intercourse should take place between neighboring plants of the same species." It remained for Charles Darwin, however, by means of experiments and observations that lasted thirty-seven years, to demonstrate the importance of cross-fertilization in the vegetable kingdom. Hermann Mueller, by studying the adaptations which flowers have undergone to promote the visits of insects, has shown us, at least in part, in his famous work entitled "The Fertilization of Flowers," the extent of cross-fertilization in the plant world.

Why sexual organs should have been developed in plants is more than I can tell, unless the purpose was to secure the mingling of the qualities of two individuals in a new being. Why so many plants possess both kinds of organs in the same flower is still another puzzling question to me. This circumstance seems to contradict the purpose of sexuality. We know that sexual reproduction is an expensive process; and we believe that nature is usually not given to extravagance, hence the purpose must have been of enough importance to justify the outlay.

When we come to the consideration of the law of the struggle for existence, we shall find that variation gives a plant an opportunity to utilize conditions prejudicial if not positively injurious to its ancestors. Professor L. H. Bailey says: "The struggle for existence forces plants into new and strange conditions." Variation tends to remove the plant from the fiercest center of that struggle. Plants are crowded into new conditions by the struggle for existence, and the inward tendency of organisms to fit themselves to environment causes them to vary to fit the conditions of a new environment. The process of crossing introduces variability into the seedling, thus giving it an opportunity to start out in life surrounded by a less fierce struggle than were its parents. Darwin says: "The more diversified the descendants from any one species become in structure, constitution, and habits, by so much will they be better enabled to seize on many and widely diversified places in the polity of nature, and so be enabled to increase in numbers." Crossing insures to the new being a tendency somewhat intermediate between the tendencies of the two parents. After the process has been repeated for a great many generations, the plant will have just twice as many progenitors from which to inherit variations as it would have had were it descended from a single line of self-fertilized ancestors. Its variability will be increased enormously because of the in-

production of a very large number of initial varying points. When a plant is descended from a single line of ancestry its inherited tendency will be to propagate itself in a straight line. It can only vary as outward circumstances compel it to vary, and it will manifest a constant tendency to return to the path of development coinciding with the straight line of its ancestry produced, or elongated. On the contrary, when a plant is descended from a composite, or broken line of ancestry, in which each generation is the product of two parents having an inherited tendency to variation, it will tend to vary and will propagate itself in a zigzag line. It seems to me, consequently, that the chief purpose of crossing is to introduce the element of variability.

If crossing is a good thing, because it unites the different tendencies of two beings into one, we are apt to reason that the greater the difference in tendency of parents, the more beneficial will be the cross. When we observe nature, however, we find that there is a limit where crossing is beneficial or even possible. This limit is usually within the range of the species. Thomas Andrew Knight, nearly a century ago, observed the fact that hybrids are generally sterile, and stated it as follows: "I have never yet seen a hybrid plant, capable of affording offspring, which had been proved by anything like satisfactory evidence to have sprung from two originally distinct species." Consequently, hybridization is a very uncertain method for the improvement of plants. It is true that some excellent results have been obtained from hybridizing species which, owing to similar environments, have developed great likenesses to each other in different parts of the world, without having had any very recent genetic relationship. Such species are called representative species. Excellent results have been obtained by Mr. Rogers in hybridizing two representative species of American and European grapes. We may expect other good results to come from hybridizing some of the fruits of Japan with those of eastern North America and western Europe. The field for profitable work of this sort is very limited. Hybrids, besides having the tendency to be sterile are also characterized by instability of qualities. Focke has discussed the subject very fully and his following statement from "Die Pflanzen-Mischlinge" expresses the truth in a nut-shell: "Hybrids produce a less amount of pollen and fewer seeds than their parents, and they often produce none. In cross-breeds this weakening of the reproductive powers does not occur. Malformation and odd forms are apt to appear in hybrids, especially in the flowers." As a summary of the law of crossing, let me again quote Professor Bailey: "Encourage in every way crosses within the limits of the variety, and in connection with change of stock, expecting increase in vigor and productiveness; hybridize if you wish to experiment, but do it carefully, systematically, thoroughly, and do not expect too much. Extend Darwin's famous proposition to read: Nature abhors both perpetual self-fertilization and hybridization."

THE LAW OF CLOSE-FERTILIZATION.

Although the majority of the plants in the vegetable kingdom are manifestly adapted to cross-fertilization, yet close-fertilization is possible in the great majority of cases, and it is the rule with many plants such as our cultivated cereals. Whether cultivation is responsible for the habit of close-fertilization in wheat, oats, and barley is not known. It is certain that some wild plants which have never been subdued by cultivation are just as closely fertilized as the grains. Darwin has shown that many plants normally almost self-sterile can be bred to produce fruit readily by means of self-fertilization. With such plants, the injurious effects of self-fertilization gradually decrease as the number of generations increase. Close breeding is the only means we have of "fixing a type." It is practiced in the animal kingdom with apparently no harmful results. It reduces the tendency to variation and thus deprives either a plant or an animal of its ability to adapt itself to the conditions brought about by the struggle for existence. However, this is of little importance to the improver of animals or plants; for all the arts of the breeder tend to remove any improved type from this struggle. The first step in the improvement of plants is isolation or a removal of the plant from the necessity to struggle with its fellows or with other species. Self-fertilization, then, is a means which the breeder may employ for the perpetuation of any desirable characteristic which he may discover in plants.

THE LAW OF STRUGGLE FOR EXISTENCE.

The struggle for existence is against physical nature and against other organisms having similar desires to those of the struggler. The necessity for the

struggle is founded in nutrition. It is the demand of the hungry being for food. This necessity is something to move an organism—a motive. Henry Drummond says: "The very act of living contains within it the principles of progress. An animal cannot be without becoming." This statement is just as true for a plant. The struggle for existence has been nature's refining process by which the erratic, the weak, and the unfit have been refined out of existence.

A very prevalent popular fallacy is that the struggle for existence strengthens the survivor. If this were true, the farmer would not need to cut the weeds out of the corn crop; for the more the weeds would be allowed to compete with the corn, so they did not kill it, the stronger and more thrifty the corn would become. The effect of competition upon the survivors is well illustrated in the growth of thickly sown wheat. Mr. Geo. Wilkins, in the "Gardener's Chronicle" for 1868, on page 905, advises sowing a peck of wheat per acre in England where the practice of his neighbors was to sow three bushels. By sowing a peck of seed, he was enabled to harvest an average annual crop of 44 bushels of wheat per acre for fourteen successive years from one field. During these years the crops of his neighbors were miserably poor.

The struggle for existence compels plants and animals to vary in certain directions to suit their environment. Its reactions is manifestly to fill a diversified world with living beings. By the means of this struggle, plants are compelled to appropriate new territory whether the environments of such new territory are congenial to them or not. Henry Drummond says: "If the land had been all the same, the struggle for life had been all the same, and if the struggle for life had been all the same, life itself had been all the same." Again he says: "The end of the struggle for life is not battle; it is not even victory, it is evolution."

THE STRUGGLE FOR THE LIFE OF OTHERS.

This is a side to evolution that few evolutionists have noticed. That plants manifest the spirit of self-sacrifice, will appear, no doubt, to some of my readers, to be a very wild statement. The law exists, however, and has existed from the time that the first germ of life made its appearance upon the globe. It is founded in reproduction and is the only law that insures the propagation of the species. Ask the apple tree what is the purpose of the myriads of blossoms that perfume the air in spring. It will answer: "These are my sacrifice that other apple trees may grow in the future. For the one supreme purpose of producing fruit, I live." Man makes use of the reproductive functions of plants, when he cultivates them, oftener than any other of their qualities. The grains store up food in their seeds for their countless offspring, and man eats both the food stored up and the offspring. The plant breeder must understand that the most supreme effort of any plant will be to reproduce its kind. If you plant a weed seed upon the poorest soil that you can find, you will observe that the resulting plant will develop seeds, which have stored within them, as food for the offspring, all the nourishment that the starved, poor little deauperate mother plant could gather together. J. C. Arthur, in Agricultural Science for 1893, on page 342, shows that the poorer the soil, the greater will be the weight of the seed in proportion to the whole weight of the plant.

NATURAL SELECTION.

In the struggle for existence which must necessarily occur because the world is already full of living beings, only those organisms can survive which have varied so as to fit themselves most perfectly to their environments. This law causes the struggle to be a selecting process by which only the fittest are allowed to survive and reproduce themselves. The "fittest" may not in any sense represent those forms which man would consider fittest for his purposes. In fact, if man were to cease cultivating the earth for a few years, it is very probable that the great majority of domesticated plants would be swept out of existence, because of unfitness to compete in the struggle with the wild plants. Consequently we must keep in mind the fact that natural selection may not help us in our efforts at plant breeding.

THE SURVIVAL OF THE UNFIT.

This law seems to contradict the law of natural selection, yet both laws are true. To discover that the unfit survive a great deal longer and more persistently than might be supposed, we need only to look around us and see how many imperfect plants we find, how many imperfect animals, how many imperfect men! It is probable that among the plants and animals nature meant the unfit individuals to survive as food for the better fitted. The reproductive function is responsible, principally, for the survival of the unfit.

Forty years ago the advertising of the American Waltham Watch Co. made the fame of *Waltham* watches world-wide. A generation has passed—Forty years of progress and improvement—Seven million *Waltham* watches made and sold. Now the company propose to advertise *Waltham* watches to the people of to-day. Watches more perfect than ever and far cheaper. This trade-mark specially recommended—the "*Riverside*" will last a lifetime and is within the means of every one. All retail jewelers have or can get this movement together with any priced case in sizes for both ladies and gentlemen.

The mother lavishes just as much food, care and love upon her most worthless offspring as upon her best. Heredity and atavism tend to reproduce bad qualities in plants just as well as good ones.

EVOLUTION.

Evolution is the crowning law that regulates the activities of living beings. All the other laws that I have discussed simply lead up to this one supreme law. Evolution is not creation, but creative nature responding to the sensitive inner power called life. It is simply expressive of a process which nature has used in developing the world. When man comes to understand that the law of evolution admits him as a partner with the Creator in the work of creation, he will begin to comprehend the grandeur of the law. The study of the evolution of the cultivated plants is a most fascinating and profitable field of work; for it shows what man has done in changing plant forms, and it gives a key to what may be done in the future. The plant breeder is a practical evolutionist because he is engaged in the art of evolution.

REVERSION.

The law of reversion means that evolved types have a tendency to go back to some pre-existing form. The plant breeder must be on the alert constantly to prevent his plants from degenerating. This is prevented by rigid selection. Here is where the farmer too often fails in his practice. He is not careful in the selection of his seed, and consequently, he reaps an inferior product. He then purchases new seed at a high price, at the same time running the risk of getting degenerate seed from as careless a grower as himself. Every farmer should grow, breed and select his own seed, and thus save a heavy outlay for new seed that frequently is no better than the old seed displaced.

In my next article, I shall mention the fixedness and the flexibility of plant forms, and follow these subjects with a discussion of plant variants and methods of utilizing them for the improvement of plants.

GEO. L. CLOTHIER.

Cornell University, Feb. 23, 1899.

(To be continued.)

In a letter to the Kansas Farmer Jay Hague, of Cherokee, Oklahoma, inquires how to keep grasshoppers from working in and ruining alfalfa. This is an important question, which may well be discussed through the columns of the Kansas Farmer.

PAINT TALKS XIV.

PAINT FOR SLEEPING ROOMS.

The modern dwelling is generally furnished as if the chief object were to gather and conceal dirt. With lace curtains at the windows, "fuzzy" paper on the walls and "fuzzy" carpet on the floors, about everything possible has been done to encourage dirt. When to these are added a deleterious crumbling paint on the wood-work, the way not to do it is perfectly illustrated.

Windows of sleeping rooms should be protected preferably with fixed blinds, but lacking these, nothing but good, easily removable shades on spring rollers should be tolerated. Wall paper should be eschewed and the walls should be painted, in some light, cheerful tint, with a paint containing no poisonous materials. For this use the only fit pigment is zinc-white, the tints being obtained by adding ultramarine for blue tones, earth colors for yellow, brown and red tints, lamp black for the grays, and combinations of these pigments for the other desired tints.

The wood work, unless of light-colored wood finished in the natural state and varnished, should be painted exclusively with the same pigments, varnish being added if an enamel effect is desired. The floor, if too old or too open for filling and "waxing," or varnishing, should be smoothed off, and after putting all seams, cracks and nail-holes, should be painted with a good oil paint containing no lead; zinc-white or a combination based on zinc-white, colored with iron oxides or earth colors (ochre, sienna, umbers, metallic brown, etc.) being used exclusively as pigments. Over this should be laid a removable rug, which can be taken up, aired and shaken at frequent intervals, the floor being well wiped with a wet cloth while the rug is up. The painted walls should also be washed at the periodical "cleaning" times.

Wall paper, curtains, carpets and deleterious paints are probably responsible, either directly or indirectly, for the introduction and propagation of many ailments, especially in children. White lead, which is among the least durable of pigments, is, like all lead compounds, an active poison, and it is notable among paints for its tendency to crumble off the painted surface in the form of dust. Furthermore, as it blackens in the presence of the gases always found in dwelling houses, it is undesirable on aesthetic grounds. Zinc-white, on the other hand, is absolutely non-poisonous, has a brilliant clear white color, which produces remarkably pure and brilliant tints with other colors, and is the most permanent of pigments, both as regards color and material.

A great deal of attention is usually paid to the food and clothing of children. It would be wise to extend this attention to the hygienic conditions of their ordinary surroundings. STANTON DUDLEY.

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Horticulture.

THE FARMER'S FRUIT GARDEN.

By B. F. Smith, Lawrence, Kans.

Small fruit culture on the stock or grain farm is not estimated in the light and value that it deserves. There are but few farmers in our State who grow any kind of small fruit. They do not realize the value and healthfulness of these fruits as an auxiliary to the home supply of food. Every farm home should have a two- or three-acre fruit garden for small fruit, interspersed with a few cherry, plum, and pear trees. One-half acre of this plot should be used for strawberries, half acre for raspberries, and an acre for blackberries, grapes and currants. This fruit garden should be fenced by itself to keep intruding stock out.

The fruit garden should have a roadway around it, inside the fence, and through the center for convenience of hauling in manure and straw for winter protection. In the center of the garden there should be a shed or neat tasty pavilion built for keeping the garden tools. Before planting this garden, it should be well pulverized with the plow, harrow, and roller. The planting should be done systematically. Each fruit department should be measured off into rows and calculation made as to number of plants of the different kinds wanted.

The farmer's fruit garden may be square, or almost any shape that will make the general surroundings of the home complete. The work in the fruit garden should always be done in season, to keep the fruit growing. In fact it should be the cleanest spot around the farm.

In the commencement of the fruit garden only half of the portion set apart for strawberries should be planted the first season and the other half the following year. By planting this way there will be a fresh new berry patch every season. After the old one has borne two crops it should be plowed under and planted to Irish or sweet potatoes or cabbage, which crops should be thoroughly cultivated and manured before or while these crops are growing. Then the next year it will be in good condition for planting to strawberries again. By this time the second planting of strawberries will have borne its second crop, when it should be treated like the first planting. By this rotation the fruit garden will be renewed from time to time, as nature requires it for successful berry culture. The balance of the fruit garden—blackberries, raspberries, and grapes—should be treated in the same manner about every six or seven years. The roadways in the fruit garden should be kept clean by hoeing, the same as the fruit-bearing plants.

Most farmers look upon garden work as a side issue, in which there are no returns for labor bestowed. Let any active farmer try his hand and take the same interest in the fruit garden that he does in his grain, stock, or hay fields, and he will soon discover that his fruit garden is a source of profit. Probably not so much in the dollar value as in the pleasure he will enjoy in noting the growth of his trees and plants and the great variety he may have therein being so different from ordinary farming, that the contemplation of the fruit garden, with the beauty of its fruits, will be rest for the body and growth for the soul. There are real pleasures and enjoyment in beholding a well-grown pear, cherry, or plum tree well filled with luscious fruits, or the strawberry garden red with crimson berries, or the blackberry patch with bushes bending with black, juicy fruit.

Now, turn aside from this garden to the hog yard, or the pasture, where the cattle are grazing, or to the weedy corn field. Do they compare in attractiveness to the fruit garden? No.

The berry season continues about eight weeks, from the beginning of strawberries to the close of blackberries. While they last the farmer will have no occasion to call in a physician to see the children, for berries are more easily swallowed than the doctor's pills.

A well-kept fruit garden will be known throughout the neighborhood. Your neighbors will be more neighborly and more ready to exchange work with you. Should the farmer want to sell the farm to go to a warmer climate or remove to the city, the fruit garden will attract a better class of purchasers than would a farm without the garden.

The farmer will find after a five years' trial, that the fruit garden is the most profitable part of the farm. It will pay to have a fruit garden for the canned fruit and preserves the good wife will put up for winter use, and for the children to take to school for the noon lunch instead of the usual ration of fat pork and corn bread. The boy and girl who fill up on fat pork will not progress in their stud-

ies with those whose diet is made up largely of fruits and bread.

Now, I have not gone into any details about the culture of the fruit garden or varieties to plant, as it would require more time than I have to read this paper.

However, I would say to those who contemplate planting small fruits or a complete fruit garden, and who desire further information, it can be had by corresponding with almost any of the well-known reliable fruit growers.

In conclusion, I would say, that I have only touched the points that might be elaborated into a book of two or three hundred pages proving the facts. It is the desire of the writer that Kansas farmers will consider the matter of the fruit garden, and not only to think about it, but go to work and plant it, and thus begin that part of farm life that is rest to the body and growth to the soul.

Early Vegetables.

Editor Kansas Farmer:—Cauliflower should be in as general use as is cabbage. Its good qualities merit its general use. Would you be without cabbage from year to year? Then why be without cauliflower?

Do you grow and use salsify, the oyster plant? Try it. If you have good success and are as fond of it as some are, you will not let a spring pass without planting it.

If you like celery, try to grow it. Splendid celery can be grown in Kansas but it requires thoughtful work.

For raising early vegetables, now is the time to begin work. Make a hot-bed and have good-sized hardy plants ready for the open ground as soon as the weather will admit of their being put out. Place several loads of horse manure in a flat-topped pile and give it a good wetting. After several days it will be steaming vigorously and should be forked over into a similar pile and wet again. After this process has been repeated two or three times, make the manure into a solid bed two feet deep, place a frame on the bed and fill in with four inches of good soil well pulverized. Sow your seeds, cover lightly and keep the soil moist. Cover the frames during nights and cold days with glass sashes if you have them, but if not, use the best covering you have, such as old carpet or wagon sheet. With this little care you may have an early supply of vegetables. They grow better during early summer before it gets hot and dry, and tomatoes will continue to bear till frost if irrigated, or if the drought is not severe.

C. P. HARTLEY.

Kansas Experiment Station.

The Grape for Fruit and Shade.

Editor Kansas Farmer:—The probable loss of our peach crop at home and the great destruction of the southern semi-tropical fruits, leaves in the hearts and minds of all lovers of horticultural products an anxious desire to replace or substitute something to fill the aching void or satisfy the innocent pleasure of eating the unforbidden, health-giving fruit. We have been greatly alarmed and perhaps frightened when we hear of the discovery, by scientific investigation and research, of the infinite infinitesimals, the microbes, bacilli spores, that inhabit the dust, the air, the water, the milk, the meat, and everything we touch or see. I say we are amazed and wonder that we have stood it so long in this hazardous and unfriendly world. But when we find that a good healthy stomach will destroy these little enemies of ours we feel like exclaiming with the medicine man and say the way to cure disease is to establish health. With my observation and experience I find that fruit gives cheer, strength, and sustenance to the body. It is to the body what religion is to the soul, the one thing needful. It should take the place of, and is away ahead of all sumptuary frauds and counterfeits of to-day in eating and drinking, namely, steer butter, vitriol syrup, prussic acid, fusil oil mixtures that are so eagerly sought after and are becoming so extensively used here in Kansas. Why don't those who have influence and authority do something to protect the unthinking and unfortunate of our own land? I think our government permitting the manufacture, the wholesale and retail sale for mere pay and receiving a revenue of \$1.10 a gallon ought most assuredly to see that old drunkards have a pure and genuine article, and we that have felt and seen the dangers of the use of it ought to do something to keep it away from boys until they get their second growth of brains.

I started to ask of the vine growers of Kansas what kinds of grapes would do best for the purpose of shade, giving a high trellis, with beauty of foliage, and will yield, with good care and kind attention, the delectable grapes. Also in setting the vines close to a building how large a hole should be dug and what

would be advisable to fill it with? How close to each other? Which side of a building would be best? How handled and the best way to make the frame to run on? I would like it to stand above the windows and doors of the house. Has anyone tried the Poughkeepsie Red? I would like different kinds, early, late, etc. If some one will kindly answer I will feel under obligations.
Dwight, Kans. C. H. TITUS.

Peaches on the South Line.

Editor Kansas Farmer:—Seeing it reported that the peach crop of Missouri and Kansas was killed by the late severe cold spell, I have made a careful examination of about one-third of my budded kinds, and note as follows: On Elberta, Stump, Bishop, Reed's Early, Golden Yellow, St. John, and Mountain Rose I found no live buds. Hynes' Surprise and Early Rivers are nearly all alive. Alexander, Old Mixon Cling, Henrietta, Marcella, Cream, and No. 2 plenty for a good crop. These two last are seedlings of the Marcella. The Cream ripens the middle of October and No. 2 the last of that month. Both are large yellow free-stones of good quality. I know of no peaches that ripen at the same season that are their equal. Plums and apricots are damaged very little.
Klowa, Kans. E. T. DANIELS.

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In the Dairy.

Conducted by D. H. Otis, Assistant in Dairying, Kansas Experiment Station, Manhattan, Kans., to whom all correspondence with this department should be addressed.

Students' Farmers' Club, Kansas Agricultural College.

One of the most interesting and instructive organizations connected with the Kansas Agricultural College is a farmers' club composed of students interested along agricultural lines. This club meets weekly, has a membership of about seventy-five names. Subjects pertaining to the farm, as soil, grain, stock, dairy, horticulture, landscape gardening, veterinary science, botany, entomology, chemistry and even domestic science are discussed. These discussions bring out points of great value to the young man who expects to return to the farm, and not only that, but the experience he gets by being placed on the program enables him to express to others his own thoughts and give them the benefit of his knowledge and experience. At times the club secures the services of some veteran farmer or agriculturist outside of the college to discuss some special subject. During the present school term the programs have been arranged with a view of devoting one evening to certain phases of farm work. For instance, one evening will be devoted to grain-growing, another to beef cattle, others to horticulture, domestic science, chemistry, botany, bacteriology, dairy, etc. This arrangement of subjects is proving very satisfactory and instructive, and the young man who attends these meetings with eyes and ears open, cannot fail to learn much that will be of lasting benefit to him in after years. D. H. O.

Dairy Evening at Farmers' Club, Kansas Agricultural College.

The following program was presented February 16, 1899:

DAIRY EVENING.

"Echoes from Calf-Raisers Near Manhattan," Geo. E. Williams.
 "Preservatives," J. A. Conover.
 "The Skimming Station Manager," Wm. Williams.
 Solo, Jeanette Perry.
 Debate: "Special vs. General-Purpose Cow for the Dairy Farmer," R. E. Eastman, Geo. E. Williams, J. G. Haney, E. L. Cottrell.
 Music, J. A. Conover.
 "Dairying in Europe," Miss Josephine Harper.
 "Testing of Milk," Ed. H. Webster.
 Question Box and general discussion.
 A lively time is expected. Speakers' time will be limited so program will not be over two hours long.

"A Calf Study."—In this paper, Mr. Geo. C. Williams gave the results of an investigation that he made among ten different farmers in the vicinity of Manhattan. Notes were taken upon the way in which the calves were fed, handled and care for. He found that the most successful changed gradually from whole milk to skim-milk and added a small amount of corn meal or similar grain to the ration. Other farmers allowed two calves to run with one cow and then milked the other half of the herd.

"Preservatives."—Under this heading, Mr. J. A. Conover told of the different ways in which milk was preserved for testing with the Babcock test. He also spoke of how sometimes milk for consumption or manufacture was preserved with borax, boracic acid, salicylic acid, soda and prescaline, and maintained that these should not be used, for the reason that they are injurious and decrease the digestibility of milk. This is especially noticeable with infants, invalids and people of weak digestion. He then cited experiments to prove that both milk and butter could be kept for a sufficiently long time without resorting to the above adulteration.

"The Skimming Station Manager."—This paper was prepared by Mr. Wm. Williams, a special dairy student of the Agricultural College, and a young man who has had charge of one of the principal skimming stations of the Meriden Creamery Company. He brought out the fact that the skimming station manager must be thoroughly conversant with machinery, and illustrated his point by showing that a separator under normal conditions would leave only a trace of butter fat in the skim-milk, but when allowed to get out of balance or to run unsteady would leave at least one-tenth of 1 per cent butter fat in the skim-milk. With a five thousand pound daily run this would amount to five pounds of butter fat daily, which would mean a loss of about \$310.75 per year. The general appearance of the skimming station must be neat and the utensils clean. Furthermore, the manager must be posted upon feeds and feeding, so as to instruct the patron how to get the most out of his cows and how to utilize his skim-milk to best advantage. The skimming station

should be a school where knowledge is dispensed and experiences exchanged.

"Special vs. General-Purpose Cow for the Farmer."—The special-purpose cow was upheld by R. E. Eastman and Geo. E. Williams, who maintained that the conditions in Kansas were favorable for special-purpose cows, and if a farmer had a special-purpose cow he would supply the surroundings necessary for her care, just as a man with a new bicycle will see that it has better care than an old one. They stated that where pure blood or special-purpose stock have been tried the owners met with success. As to the calf, it was claimed that the special-purpose calf was worth more than the general-purpose. The negative or general-purpose side of the question was discussed by J. G. Haney and E. L. Cottrell. They said the farmers of Kansas are not yet educated to do special work. The special-purpose cow requires special conditions and special care, and when a farmer can realize from \$40 to \$48 from a general-purpose cow he is pretty well satisfied. The general-purpose cow was said to have raised more mortgages from Kansas farms than any other animal. As the English coach horse was developed to meet a demand for draft and a moderate degree of speed in the same animal, so will the general-purpose cow be developed to meet the demand for milk and beef in the same animal.

"Dairying in Europe."—Miss Josephine Harper, who was in Europe a few years ago, told the club some of the things she saw along dairy lines in Sweden and Denmark. The agricultural colleges of those countries admit only men to their courses and are especially adapted to the turning out of creamery managers. However, there are private schools in which the women may receive a dairy education. The cows are usually of a dun color, small in stature, and are tested for tuberculosis before their admittance to the dairy herd. Animals affected with tuberculosis are sent to a special farm, where they receive special treatment and at the same time are prevented from communicating the disease to healthy animals. In certain sections of the country there is what is known as Seaters, who take their herds to the mountains in summer and return to the village in winter. During cold weather the cows are given warm feed and water from which the chill has been removed. The Danes, especially, take pride in the quality of their products, which command the highest prices on the London market. In order to do this, every effort is made to keep the dairy buildings and dairy utensils scrupulously clean. In some places butter and cheese are made from goat's milk, but to the American taste it is rather inferior.

"Testing Milk with the Lactometer and the Babcock Test."—Mr. E. B. Webster, special student in dairying, Kansas Agricultural College, stated that nine years ago there was no accurate way of determining the butter fat in milk. Since then Dr. Babcock, with his famous test, has revolutionized the dairy business. By using the lactometer, an instrument for determining the specific gravity of milk in connection with this test, it is possible to determine whether milk has been skimmed, watered, or both skimmed and watered.

With the above program, in connection with good music, the large audience present pronounced this meeting of the club one of its very best. D. H. O.

Throttle the Fraud.

By W. F. Jensen, in "Jensen's Dairyman."
 The packers of oleomargarine have cast away all pretensions of obeying the law that in nearly every State restricts the sale of oleomargarine. They find it more to their profit to violate the law and pay the fines from their and the retailers' enormous profits than to obey the law and sell oleo for what it is in its uncolored state. Sell oleo for what it is, and it does not compete with butter. Take away all restrictions, and we predict the doom of the dairy industry, for surely we cannot milk cows in competition with cottonseed oil and tallow. Sell oleo uncolored, and the purchaser will know what he buys, and will buy it cheaper.

In our national legislature has been introduced a measure that, if enacted into law, places a tax of 10 cents on colored oleomargarine, and leaves the present 2 cents per pound tax on uncolored oleomargarine. Furthermore, it puts its enforcement in charge of the revenue department, which assures its being done. Friends and fellow citizens, it is your duty to write your Congressman and Senators, that they do all in their power to enact this bill into law. We cannot allow a dozen men, just because they are powerful, to trample on our rights. What would the ruin of the dairy industry in America mean? Twenty million people are engaged therein. It yields a yearly revenue of \$500,000,000. And where

would it all stop? Would it not mean a complete revolution in farming, if we allow substitutes to take the place of pure food products? We consider this question of greater importance at the present day than we do other issues receiving so much of your attention.

The Milk Hauler.

Paper by G. R. Garrett, read before Farmers' Institute, McLouth, Kans.

There is a good deal to be said in regard to hauling milk, if the right man had been put on the program for this paper; but, as it falls to me, I will try to say something in regard to hauling milk. In the first place, the man that hauls milk should be prompt both winter and summer. If he is not on time in summer, there is danger of the milk getting sour and then it is rejected and has to be taken back without any pay, and the hauler gets a jawing because the milk was sour. They say: "If you had come in time the milk would have been all right." In the winter, the milk freezes and then you catch it at headquarters. It is enough to haul milk without an extra scolding, especially in zero weather or in mud axle-deep.

Next, the patrons all should have convenient stands to set the milk, in place of the hauler having to get out in the mud and snow to get it. Some think it all fun to haul milk, but if some of them would try it they would think differently and would try to make it more convenient for the hauler. I think the patrons would get better testings from their milk if they would fill their cans full in place of half full, and the hauler would like it better. I think all haulers should have springs under their wagons, provided they get enough for hauling so that they can afford to buy them. I think a good way would be to have a tank on the wagon and let the hauler do the testing and weighing, so that when he got to the creamery they might put a pump in the tank and pump out the milk instead of lifting cans about.

The hauler should have a cover to protect his cans from the hot sun in the summer and from cold in the winter. I think there would be less sour milk if the patron was a little more particular about his cans being well cleaned and aired, and not set them out on the milk stand in the hot sun an hour or so before the wagon comes. If they want to set them out so early, they should fix a shade for them, so if the hauler was a little late it would not make so much difference. A better way, in cold, stormy weather, would be for the hauler to stay by a good fire and let the milk take care of itself, or somebody else rather than the hauler.

State of Ohio, City of Toledo, Lucas County, ss.

Frank J. Cheney makes oath that he is the senior partner of the firm of F. J. Cheney & Co., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of Catarrh that cannot be cured by the use of Hall's Catarrh Cure. FRANK J. CHENEY.

Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1886. A. W. GLEASON, Notary Public.

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- 1 " Long Light'n'g Cucumber, 10c
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- 1 " Early Dinner Onion, 10c
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WILLIAMSBURG, IOWA, July 28, 1898. The Improved U. S. Separator is giving splendid satisfaction. It skims perfectly clean and is very easy to operate. We would not think of hauling any milk without the Improved U. S., which I consider the best separator on the market. J. W. THOMAS, Steward Iowa Co. Poor Farm.

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A MINIE-BALL

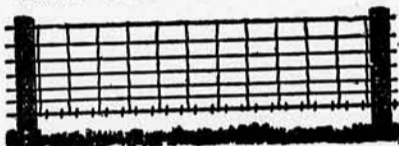
won't "sweep an avenue," but its screech will call attention. These little ads. may remind you we have larger ammunition for the asking. Write us. PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.



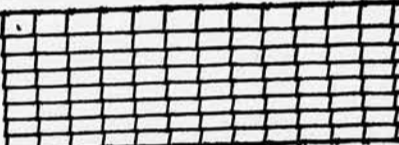
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MARKET REPORTS.

Kansas City Live Stock.
 Kansas City, Feb. 27.—Cattle—Receipts since Saturday, 4,995; calves, 69; shipped Saturday, 768 cattle; 20 calves. The market was steady, but slow on fat grades and active and strong on stockers. The following are representative sales:

| DRESSED BEEF AND SHIPPING STEERS. | | WESTERN STEERS. | |
|-----------------------------------|---------------|------------------|--------------|
| No. | Ave. Price. | No. | Ave. Price. |
| 55..... | 1,363 \$5.25 | 20..... | 1,440 \$5.20 |
| 20..... | 1,278 5.00 | 20..... | 1,327 4.95 |
| 2..... | 1,165 4.40 | | |
| 50..... | 1,195 4.60 | 2..... | 1,180 \$4.60 |
| 75 stk..... | 553 4.60 | 55..... | 1,014 4.45 |
| 59..... | 1,038 4.40 | 1..... | 620 4.40 |
| 1..... | 1,250 4.25 | | |
| NATIVE HEIFERS. | | NATIVE COWS. | |
| No. | Ave. Price. | No. | Ave. Price. |
| 20..... | 850 \$4.20 | 5..... | 1,052 \$4.15 |
| 31..... | 856 4.00 | 2..... | 850 4.00 |
| 1..... | 590 3.90 | 1..... | 470 3.90 |
| 1..... | 1,040 3.85 | 1..... | 760 3.75 |
| NATIVE FEEDERS. | | NATIVE STOCKERS. | |
| No. | Ave. Price. | No. | Ave. Price. |
| 5..... | 1,128 \$4.67½ | 8..... | 941 \$4.65 |
| 1..... | 1,155 4.61 | 5..... | 1,152 4.55 |
| 8..... | 1,142 4.45 | 12..... | 1,019 4.35 |
| 1..... | 1,050 4.10 | 1..... | 920 4.00 |
| 24..... | 501 \$5.00 | 61..... | 680 \$4.90 |
| 31..... | 612 4.75 | 11..... | 836 4.70 |
| 2..... | 593 4.50 | 1..... | 720 4.25 |
| 3..... | 710 4.00 | 1..... | 780 3.75 |

Hogs—Receipts since Saturday, 4,952; shipped Saturday, 532. The market was steady to 50 lower, closing weak. The following are representative sales:

| | | | | | |
|----------|-------------|----------|------------|----------|------------|
| 88..... | 310 \$3.77½ | 54..... | 249 \$3.75 | 56..... | 250 \$3.75 |
| 67..... | 285 3.75 | 88..... | 242 3.70 | 81..... | 270 3.70 |
| 81..... | 234 3.70 | 84..... | 270 3.70 | 70..... | 228 3.70 |
| 85..... | 233 3.65 | 140..... | 223 3.65 | 92..... | 245 3.61 |
| 89..... | 236 3.65 | 71..... | 181 3.62½ | 77..... | 203 3.62½ |
| 89..... | 191 3.60 | 77..... | 229 3.60 | 54..... | 217 3.60 |
| 89..... | 243 3.60 | 85..... | 193 3.57½ | 9..... | 212 3.57½ |
| 82..... | 162 3.55 | 63..... | 189 3.55 | 53..... | 212 3.55 |
| 80..... | 213 3.55 | 96..... | 203 3.52½ | 114..... | 203 3.52½ |
| 67..... | 221 3.52½ | 63..... | 183 3.52½ | 62..... | 204 3.50 |
| 74..... | 214 3.50 | 93..... | 184 3.50 | 53..... | 156 3.45 |
| 44..... | 172 3.45 | 63..... | 100 3.42½ | 60..... | 159 3.42½ |
| 100..... | 161 3.42½ | 46..... | 160 3.40 | 32..... | 136 3.30 |
| 2..... | 395 3.25 | 116..... | 139 3.25 | 15..... | 127 3.25 |
| 18..... | 116 3.15 | 9..... | 111 3.15 | 18..... | 123 3.15 |
| 10..... | 120 3.10 | 7..... | 135 3.10 | 37..... | 105 3.10 |
| 21..... | 91 3.05 | 3..... | 103 3.05 | 1..... | 300 3.00 |
| 27..... | 90 3.00 | 2..... | 195 3.00 | 8..... | 115 3.00 |

Sheep—Receipts since Saturday, 5,688; shipped Saturday, none. The market was steady and fairly active. The following are representative sales:

| | | | |
|-----------------|-----------|---------------|-----------|
| 897 Col. lbs. | 85 \$4.70 | 524 Col. lbs. | 82 \$4.70 |
| 1,086 Col. lbs. | 72 4.65 | 490 Col. lbs. | 71 4.60 |
| 96 N.M.yrl. | 93 4.50 | 126 Texas.. | 93 3.95 |
| 1,290 Texas.. | 98 3.75 | 18 W.ewes | 83 3.25 |

St. Louis Live Stock.
 St. Louis, Feb. 27.—Cattle—Receipts, 3,000; market steady to strong; native shipping steers, \$4.50@5.75; butchers and dressed beef grades, \$3.00@5.20; stockers and feeders, \$2.50@4.35; cows and heifers, \$2.00@4.50. Texas and Indian steers, \$2.50@4.85; cows and heifers, \$2.25@3.75.
 Hogs—Receipts, 7,500; market 50 lower; pigs and lights, 3.60@3.75; packers, \$3.80@3.90; butchers, \$3.80@3.97½.
 Sheep—Receipts, 700; market steady; native, \$3.00@4.41; lambs, \$4.00@5.00; Texas sheep, \$3.70@4.00.

Chicago Live Stock.
 Chicago, Feb. 27.—Cattle—Receipts, 13,000; market steady to strong, beefs, 3.75@5.90; cows and heifers, \$1.75@4.75. Texas steers, \$3.50@4.91; stockers and feeders, \$3.50@4.60.
 Hogs—Receipts, 37,000; market fairly active, 50 lower; mixed and butchers, \$3.62½@3.90; heavy, \$3.60@3.90; light, 3.60@3.87½.
 Sheep—Receipts, 14,000; market steady; natives, \$2.95@4.41; lambs, \$4.00@5.03.

Chicago Grain and Provisions.

| Feb. 27. | Opened | High'st | Low'st | Closing |
|--------------|--------|---------|--------|---------|
| Wh't—May.... | 73½ | 73½ | 73 | 73½ |
| July.... | 71¾ | 71¾ | 71¾ | 71¾ |
| Corn—Feb.... | 36½ | 36½ | 36½ | 36½ |
| May.... | 36½ | 36½ | 36½ | 36½ |
| July.... | 37 | 37¾ | 36¾ | 37 |
| Oats—Feb.... | 27½ | 27½ | 27½ | 27½ |
| May.... | 28½ | 28½ | 27½ | 28½ |
| July.... | 28½ | 28½ | 26 | 28½ |
| Pork—Feb.... | 9 20 | 9 20 | 9 20 | 9 20 |
| May.... | 9 57½ | 9 17½ | 9 37½ | 9 41 |
| July.... | 9 57½ | 9 65 | 9 55 | 9 57½ |
| Lard—Feb.... | 5 22½ | 5 22½ | 5 22½ | 5 22½ |
| May.... | 5 42½ | 5 42½ | 5 37½ | 5 40 |
| July.... | 5 55 | 5 55 | 5 50 | 5 50 |
| Ribs—Feb.... | 4 65 | 4 65 | 4 65 | 4 65 |
| May.... | 4 82½ | 4 82½ | 4 77½ | 4 80 |
| July.... | 4 95 | 4 95 | 4 90 | 4 92½ |

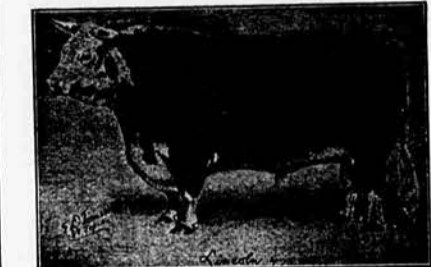
Chicago Cash Grain.
 Chicago, Feb. 27.—Wheat—Cash, No. 2 red, 73@73½c; No. 3, 65@72c; No. 2 hard, 67@68c; No. 3, 64@67c; No. 1 northern spring, 70½@72½c; No. 2, 68@71c; No. 3 spring, 65@71c.
 Corn—Cash, No. 2, 35½@35¾c; No. 3, 33@33½c.
 Oats—Cash, No. 2, 27½c; No. 3, 27½c.

St. Louis Cash Grain.
 St. Louis, Feb. 27.—Wheat—Cash, No. 2 red, elevator, 74c; track, 75c; No. 2 hard, 68@69c.
 Corn—Cash, No. 2, 33¾c; track, 34@34½c.
 Oats—Cash, No. 2, 28¾c; track, 29½@29½c; No. 2 white, 30¾@31c.

Kansas City Grain.
 Kansas City, Feb. 27.—Wheat—Receipts here to-day were 168 cars; a week ago, 105 cars; a year ago, 324 cars. Sales by sample on track: Hard, No. 2, 65½@67c; No. 3 hard, 63@65½c; No. 4 hard, 61½@63½c; rejected hard, 59@62c. Soft, No. 2 red, nominally 73@74c; No. 3 red, nominally 68@71c; No. 4 red, nominally 74@77c. Spring, No. 2, 65c; No. 3 spring, 62@63½c.
 Corn—Receipts here to-day were 49 cars; a week ago, 27 cars; a year ago, 240 cars. Sales by sample on track: Mixed, No. 2, 31¾@32½c; No. 3 mixed, 31¼; No. 4 mixed, nominally 31c; no grade, nominally 30¾@31c. White, No. 2, 33¾c; No. 3 white, 33c; No. 4 white, nominally 32c.
 Oats—Receipts here to-day were 23 cars; a week ago, 19 cars; a year ago, 21 cars. Sales by sample on track: Mixed, No. 2, 27½c; No. 3 mixed, nominally 27c; No. 4 mixed, nominally 26c. White, No. 2, 29@30c; No. 3 white, 28@28½c; No. 4 white, nominally 27c.

Rye—No. 2, 56c; No. 3, 55c; No. 4, nominally 53c.
 Hay—Receipts here to-day were 38 cars; a week ago, 73 cars; a year ago, 61 cars. Quotations are: Choice prairie, \$6.75@7.00; No. 1, \$6.00@6.50. Timothy, choice, \$7.00@7.50. Clover, pure, \$6.50@7.00. Alfalfa, \$7.00@7.50.

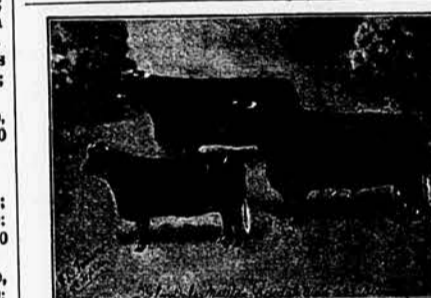
Kansas City Produce.
 Kansas City, Feb. 27.—Eggs—Strictly fresh, 20c per doz.
 Butter—Extra fancy separator, 20c; firsts, 18¼c; seconds, 16c; dairy fancy, 17c; country roll, 11@13c; store packed, 10c; packing stock, 9c.
 Poultry—Hens, 7c; springs, 8½c; old roosters, 15c each; young roosters, 20c; ducks, 7c; geese, 5c; turkeys, hens, 8½c; young toms, 7½c; old toms, 7½c; pigeons, 50c per doz.
 Vegetables—Navy beans, \$1.35 per bu. Lima beans, 1½c per lb. Onions, red globe, 90c@1.00 per bu.; white globe, \$1.00 per bu. Beets, home grown, 30c per bu. Turnips, home grown, 15@25c per bu.
 Potatoes—Mixed varieties, 50@55c.



SPRING VALLEY HEREFORDS.
 Lincoln 47095 by Bean Real and Klondyke 42001, at the head of the herd. Young stock of fine quality and extra breeding for sale. Personal inspection invited. ALBERT DILLON, Hope, Kas.



CEDAR HILL FARM.
 Golden Knight 108086 by Craven Knight, out of Norton's Gold Drop, and Baron Ury 2d by Godoy, out of Mysie 50th, head the herd, which is composed of the leading families. Young bulls of fine quality for sale; also offer a choice lot of grade bull and heifer Shorthorn spring calves. C. W. TAYLOR, Pearl, Dickinson Co., Kas.



GLENDALE SHORT-HORNS, Ottawa, Kas.
 Leading Scotch and Scotch-topped American families compose the herd, headed by the Cruickshank bulls, Glendon 119370, by Ambassador, dam Galan thus, and Scotland's Charm 127264, by Imp. Lavender Lad, dam by Imp. Baron Cruickshank. Young bulls for sale. C. F. WOLF & SON, Proprietors.



ELDER LAWN HERD SHORT-HORNS.
 The Harris bred bull, GALLANT KNIGHT 124466, a son of Gallahad, out of 8th Linwood Golden Drop, heads the herd. Females by the Cruickshank bulls, Imp. Thistle Top 33876, Earl of Gloster 74523, etc. Size, color, constitution and feeding qualities the standard. A few good cows for sale now bred to Gallant Knight. Address: T. K. TOMSON & SONS, DOVER, KANSAS.



SHORT-HORN CATTLE.
 I have combined with my herd the Chambers Short-horns and have the very best blood lines of the Bates and Cruickshank families. Herd headed by Baron Flower 114862 and Kirklevington Duke of Shannon E111 126104. The Cruickshank Ambassador 110811 lately in service. Best of shipping facilities on the A. T. & S. F. and two branches of Mo. Pac. Rys. Parties met by appointment. B. W. GOWDY, Garnett, Kas.

THE AMERICAN GALLOWAY BREEDERS' ASSOCIATION

Has just issued an interesting pamphlet containing some well-written articles, which will be of interest to every stockman. They are for free distribution and you can get a copy by writing to FRANK B. HEARNE, Secretary, Independence, Mo.

R. S. COOK, WICHITA, KAS., BREEDER OF Poland-China Swine

The Prize-winning Herd of the Great West. Seven prizes at the World's Fair; eleven firsts at the Kansas District fair, 1898; twelve firsts at Kansas State fair, 1894; ten first and seven second at Kansas State fair, 1895. The home of the greatest breeding and prize-winning boars in the West, such as Banner Boy 2841, Black Joe 2803, World Beater and King Hadley. For Sale, an extra choice lot of richly-bred, well-marked pigs by these noted sires and out of thirty-five extra large, highly-bred sows. Inspection or correspondence invited.

THIS SPACE RESERVED FOR...
J. W. HIGGINS, JR., The Poland-China Breeder of Hope, Kans., whose herd will hereafter be known as : : : : :
THE HIGGINS HOPE HERD.

PRICELESS 30169, The \$400 Son of One Price,

Here in Kansas, the One Price breeding prince that for five years gave prestige to the famed herds of Welch, Willson, Hadley & Hendrick. Fifteen yearling gilts (out of dams of Welch's Black U. S. and One Price blood), safe in pig to Priceless for March and April. Twenty spring of 1898 gilts (out of dams of above breeding, and Nettie U. S., Young Edith), safe in pig to the \$110 pig, Chief Fortune, by Klever's Chief Again. Up-to-date breeders, progressive farmers, see that you get some of these One Price and Black U. S. queens. Prices reasonable. Address: C. P. SHELTON, Paola, Kans.

VALLEY GROVE SHORT-HORNS.

THE SCOTCH BRED BULLS
 Lord Mayor 112727 and Laird of Linwood 127149
 HEAD OF THE HERD.

LORD MAYOR was by the Baron Victor bull Baron Lavender 2d, out of Imp. Lady of the Meadow and is one of the greatest breeding bulls of the age. Laird of Linwood was by Gallahad out of 11th Linwood Golden Drop. Lord Mayor heifers bred to Laird of Linwood for sale. Also breed Shetland ponies. Inspection invited. Correspondence solicited. A few young bulls sired by Lord Mayor for sale. Address: T. P. BABST, PROP., DOVER, SHAWNEE CO., KAS.

SUNNY SLOPE HEREFORDS

500 Head in Herd.
 50 Bulls and 50 Females
 at our next
PUBLIC SALE!
 April 26, 1899.
 Address.....
SUNNY SLOPE,
 Emporia, Kas.
C. A. STANNARD,
 Proprietor.

DON'T BE A— MIGHT HAVE BEEN,

But buy some Good Young Breeding Stock now—while prices are reasonable and opportunities great.
 For 25 Years the Leading Western Breeder of Percheron and Coach Horses.
 I have now the finest collection of young Home-Bred Stallions and Mares ever owned in the State.
 Correspondence solicited. Visitors welcome.
HENRY AVERY,
 WAKEFIELD, KANSAS.

Blackleg Vaccine
 Write for particulars, official indorsements and testimonials of thousands of American stockmen who have during the last three and a half years "vaccinated" their cattle with PASTEUR VACCINE and prevented losses from Blackleg.
PASTEUR VACCINE CO., 52 Fifth Ave., CHICAGO.
 N. B.—Each packet of our original and genuine Vaccine bears our trade-mark. Beware of imitations.

THE SHAWNEE FIRE INSURANCE COMPANY,
TOPEKA, KANSAS.....
 Insures Against Fire, Lightning, Windstorms, Cyclones and Tornadoes.
 The only company in Kansas with a paid-up capital of \$100,000. It writes more business in Kansas than any other company. It has paid losses amounting to \$493,266.63. Call on your home agent or write the company.

The Poultry Yard

Conducted by C. B. TUTTLE, Excelsior Farm, Topeka, Kans., to whom all inquiries should be addressed. We cordially invite our readers to consult us on any point pertaining to the poultry industry on which they may desire fuller information, especially as to the diseases and their symptoms which poultry is heir to, and thus assist in making this one of the most interesting and beneficial departments of the KANSAS FARMER. All replies through this column are free. In writing be as explicit as possible, and if in regard to diseases, give symptoms in full, treatment, if any, to date, manner of caring for the flock, etc. Full name and postoffice address must be given in each instance to secure recognition.

RAISING TURKEYS.

Now that the turkey question is up—and it is a very timely one, too, as the breeding season is just opening—it is the intention of the Kansas Farmer to give its readers all the information possible; and in connection with the excellent articles of the past two weeks, by Messrs. Clark and White, it presents this week the following from the American Cultivator:

"To be successful with turkeys there are three things necessary. These, in their order, are, wholesome food, freedom from lice, and dry, healthy quarters. With any one of these lacking or neglected, your success with poultry is doubtful. It is absolutely necessary says P. C. Reynolds, in the Ohio Farmer, that a growing turkey should be supplied with food suitable for the period through which it is passing. This food must be invigorating and of a nature to supply material for making bone and flesh. The lice problem is often difficult to solve, but is none the less important. Poults and lice do not harmonize; one or the other will get the worst of the bargain—invariably it is the former. Dryness is another thing that is very important. Too much moisture at the wrong time and in the wrong place has cost more than one promising poult its life.

"We had the most successful season with turkeys last spring and summer that we have ever had. Our methods were the simplest and most practical that we could adopt, and were principally embodied in the three thoughts given above.

WHAT SHALL WE FEED?

"The first question is, 'What shall we feed?' many writers recommend hard-boiled eggs. We wonder how many writers who advise eggs for poults have ever tried to raise a flock of 75 or 100 by such means. Hard-boiled eggs may do very well for some one who is raising poultry for fun, but will scarcely do for the practical person. In the second place, nature never designed such food for its feathered young. Curd made from sour milk, called by some Dutch cheese, or cottage cheese, is good. We have used it with varied success. This past season we started our poults on oatmeal, same as that used for table purposes, and prepared it much the same. The preparation was simple, consisting of a thorough scalding and a few minutes' steeping. The day's feed was prepared each morning, thus keeping it fresh. This was the principal feed for a week, then cracked wheat was kept before them to pick at during the day. Gradually they were worked from the oatmeal to the cracked wheat; later cracked corn was added. These two formed their principal diet until the poults were allowed to take the range.

"It may seem as though oatmeal would prove an expensive feed, but it is nothing of the kind. It can be purchased at almost any grocery store for 2 or 3 cents per pound. It is light and quite bulky, and when cooked fully doubles its former bulk. Again, it is surprising how little a young turkey will consume during the first week of its life. One-half teacupful a day of dry oatmeal, when cooked, will be quite sufficient for a flock of 20 fowls for the first seven or eight days.

DRINK.

"Drink is another feature that may properly come under feeding. Water, of course, must compose the main part of drink, but care must be taken that it is in sufficient quantities and in clean vessels. A drinking fountain that can be readily cleaned is an important adjunct; one that cannot be readily cleaned is to be abhorred. By means of a good fountain water is kept before the poults, cool, clean, and in such a way that they cannot become wetted, especially on a cold day. If the poults become dumpy and appear as though it was due to bowel trouble, a little lime water is often all that is necessary. Three or four tablespoonfuls to a quart of water is about the right proportion. Let lime settle to bottom and draining water off is the better way; by so doing one is not apt to overdo the matter.

SHELTER.

"The shelter for the night and during stormy weather is also very important. It is not essential what kind of shelter it is, so long as it accomplishes its purpose.

We always keep our poults closely confined during wet weather. We also shut them up every night with the mother hen, no matter how promising the weather is. In the morning we do not allow the young turks their liberty until the dew is entirely off. A heavy dew will often prove as disastrous to the poults as a shower.

"We allow our young turkeys their liberty in small pens, about twenty feet square. It is best to have the yards well sodded, but with grass closely cut. It is better for the poults, besides, dew will leave it quicker.

LICE.

"How to keep the young stock free from lice is a question that often assumes formidable proportions with the novice, and sometimes even with the old-timer. The principal secret is to keep the old birds free; it is then comparatively easy to manage the poults. We are careful to keep the plumage of the old hens well sifted with good insect powder during the laying season, and especially during the period of incubation. (This is generally sufficient. In case it isn't, a little lard about the head and under the wings of the poults will prove a simple remedy."

About Incubators.

"Will it pay me to buy an incubator?" is one of the leading questions asked now by all poultry raisers that have never used an incubator.

It all depends. If you mean to "go into" the business of raising large numbers of chicks, especially early chicks, it will undoubtedly be the only way in which you can have a number of chicks hatched early, for hens are contrary critters and won't sit until they are good and ready.

If you have a good, dry (comparatively) cellar or fruit house, or a reasonably warm room, and have upwards of fifty hens, by all means purchase an incubator at once; run it a few days until you get the hang of it; fill it with eggs and start on the broiler part of the poultry business. If you have but a few hens, and are where you can buy fresh eggs at reasonable prices and really wish to raise a large number of chicks, you cannot invest your money better than in a good incubator. Or, if you wish to raise ducks for the early market, and the early ones are the ones that pay, it will be the best on all sides to purchase a machine.

Now, as to buying eggs to fill your machine. The best plan would be to go to your neighbors, tell them what you wish the eggs for, and pay them a few cents a dozen more than the market price to have them fresh, and gathered before they are chilled. This last is especially true of duck's eggs, and unless an abundance of dry litter is provided for their roosting place, and gathered early, there is danger of their becoming chilled. Insist on their not washing the duck's eggs. It is best not to engage duck's eggs until you know they have been laying for a week, for the first nine or ten eggs a duck lays are not fertile.

One of the greatest advantages derived from using an incubator, is that the birds are all of an age and will supposedly be of the same size when market day arrives, and this is more noticeable with ducks. They grow so very fast that two or three days' difference in their age will make quite a difference the day of sale, enough so that when the older ones are of the right weight, the younger ones will have to go over or else hold the older ones and probably lose several cents on the pound.

There are incubator advocates who say they are so simple a child can run them. Now, while they are not difficult to operate, we are inclined to think it would be rather an old child that could run one successfully. We would much rather run an incubator than to attend as many hens as would be required to cover the same number of eggs. It is not so much trouble to us; then there is never any fear the hen will vacate her nest, or swap off with some other hen. The machine attends strictly to business. The cost is not great either. Two gallons of good coal oil will run the machine (a hundred-egg size) four weeks, and the cost of feeding six or seven sitting hens four weeks would exceed the 30 cents the oil costs. But at the best it is only a machine, and it requires regular attention, or, of course, there will be a disappointing result.

It is best to set a few hens at the same time the machine is filled, so when the infertile eggs are thrown out the fertile eggs from the hens can be put in, then the hens reset. You see it is as easy to have the machine full of eggs as partly full. Never put fresh eggs in with the eggs that have been incubated some days; it will derange the whole of them.

All things considered, it is best for the farm wives to get the small size incubators—the 50 and 100-egg size. While the cost of two 100-egg machines is greater than one 200-egg size, it is not always

A Farmer's Fortune.

The Remarkable Way in which Adam Salm Acquired Success and Happiness.

From the Vernon Times, Vernon, N. Y.

Every one in Vernon and for miles around knows honest, good natured Adam Salm, and not only in Vernon Center, N. Y., where he has resided for twenty-eight years and conducts his large and well-kept farm, but wherever he is known his word is respected.

His happiness, success in life and even life itself was due to a victory over disease.

"It was a wonderful victory" he says, "from the dreadful disease which threatened to vitiate my life and one that has made life miserable for thousands and filled innumerable premature graves. It is that form of disease known as rheumatism, and which held undisputed sway until its conquering enemy came in the form of Dr. Williams' Pink Pills for Pale People.

"For a long time I experienced untold sufferings from the ravages of this fearful ailment. All kinds of remedies were resorted to for relief, but it was the same experience that had come to countless victims of rheumatism—immunity from exercising pain for a time, but after temporary relief came suffering once more, as the insidious malady took a new grip on its distracted victim.

"I happened to learn of the wonderful power of Dr. Williams' Pink Pills for Pale People in conquering rheumatism, but long suffering had made me incredulous as I had spent many dollars for other remedies, without finding relief and this experience had embittered me against proprietary medicines. I finally concluded to try these pills and bought one box of them, and before they were all used I experienced a relief such as I had not enjoyed since my affliction began. With the depletion of the first box came another

and another until twelve boxes had been consumed.

"Just six months from the time the first box had been taken I was a cured man, and with the consumption of the last pill went out my blessing to Dr. Williams' Pink Pills for Pale People and to the management which is spreading its efficacy throughout the world relieving suffering humanity from the chains of disease. This is no fairy tale, but a true story prompted in the fullness of a grateful heart, and given for the benefit of those who may be similarly afflicted."

This is to certify that the article published in the Vernon Times of December 17, concerning my cure of rheumatism by the use of Dr. Williams' Pink Pills for Pale People is true and published with my sanction.

ADAM SALM.

Subscribed and sworn to before me.

GEO. L. BOWERS, Notary Public.

The blood is the vital element in our lives consequently it must be kept pure, rich and red in order to have perfect health. The cause of Mr. Salm's sickness was impure and impoverished blood. He had skilled medical treatment and used many remedies, but derived no benefit until he commenced to take Dr. Williams' Pink Pills for Pale People and these cured him.

This proves that this remedy is the best means of imparting those elements that purify, vitalize and enrich the blood, thus aiding bodily functions and arousing every organ into healthful action and in this way restoring the entire system.

That is the reason why Dr. Williams' Pink Pills for Pale People cure so many diseases, why doctors prescribe them, why druggists recommend them and why they are so universally used.

HATCH YOUR CHICKENS

in an Incubator, \$7.50. Raise them in a Brooder, \$6.00. Stamp for Circular.

NONE-SUCH INCUBATOR CO.,

TERRE HAUTE, IND.

THE IMPROVED VICTOR Incubator
Hatches Chickens by Steam. Absolutely self-regulating. The simplest, most reliable, and cheapest first-class hatcher in the market. Circulars FREE. GEO. ERTEL CO., QUINCY, ILL.

SHOEMAKER'S POULTRY BOOK
and Almanac for 1899. 100 pages, 100 illustrations of Poultry, Incubators, Brooders, Poultry Houses, etc. How to raise Chickens successfully, their care, diseases and remedies. Diagrams with full descriptions of Poultry houses. All about Incubators, Brooders and thoroughbred Poultry, with lowest prices. Price only 15 cents. C. C. SHOEMAKER, Box 852, Freeport, Ill.

HATCH CHICKENS BY STEAM—with the simple, perfect, self-regulating EXCELSIOR INCUBATOR. Thousands in successful operation. Lowest priced first-class hatcher made. GEO. H. STAHL, 114 to 122 S. 6th St., Quincy, Ill.

INCUBATOR SUCCESS depends upon the following named essentials—proper distribution of heat and moisture and perfect regulation and ventilation. These points attain perfection in the **PETALUMA INCUBATOR**. Beats 'em all. Add to these points superior construction and finish and you have a perfect machine. They deal only in high percentages of hatch. Sizes from 50 to 250 eggs. Prices \$10. up. We pay freight anywhere in the U. S. Catalogue free. Petaluma Incubator Co., Box 80, Petaluma, Cal.

A BUSINESS INCUBATOR.

The Sure Hatch is Business. Incubators and Brooders with the Over 500 in use. Thermastatic Heat Governors. Low in price and guaranteed. All sizes are what you need. Send 2-cent stamp for catalogue worth dollars if you run or want to run an incubator. It contains information not found in other catalogues or books. Address The Sure Hatch Incubator Co., Clay Center, Neb.

95% HATCHES

are often reported by those who use a **SUCCESSFUL INCUBATOR**

One reason for this record is absolute uniformity of temperature in egg chamber. Correct instructions for operating; has fire-proof lamp. Will hatch every egg that can be hatched. Send 6c. for new 148-page catalogue. Filled with hen information and plans of poultry houses. **DES MOINES INCUBATOR CO.** Box 88, Des Moines, Iowa.

FROM MAKER TO USER DIRECT AT WHOLESALE PRICES
Buggies \$35 and Up.
"WINNER" TOP BUGGY \$35.00
Thoroughly good. Fully guaranteed. No better one retails for \$60. Such a price with quality is only possible under our plan of business.
We sell you direct from our Factory At Wholesale Prices.
Surries, Phaetons, Buggies, Spring Wagons and Road Wagons. Our vehicles excel in quality of stock, material, workmanship, finish and style. We make every vehicle we advertise. In Single and Double Harness everything you could wish. An excellent single Harness as low as \$4.80. Illustrated catalogue sent free. All prices marked in plain figures. Write at once. Address, EDWARD W. WALKER CARRIAGE CO. 85 Eighth St. GOSHEN, INDIANA.

WE SELL DIRECT TO THE FARMER. Hardened Steel Landside Double Board Plow, hard as glass, 16-in. \$9. Sulky Plows, \$25. Riding Gang Plow, \$35. 8-in. Wagon, \$39. 1000 other articles. Big catalogue free. Write now and get ready for spring work. **HAPGOOD PLOW CO.,** Box 485, Alton, Ill. Only Plow factory in the United States selling direct to farmer.

LABEL
Dana's White Metallic Ear Labels. Stamped with any name or address and consecutive numbers. Adopted by more than forty recording associations and thousands of practical stockmen. Samples free. Agents wanted. Prices reduced.
C. H. DANA, 62 Main Street, WEST LEBANON, N. H.

NEWTON'S LATEST IMPROVED DEHORNERS
Save time and money by dehorning your cattle. Write us for special information on the subject.
H. H. BROWN MFG. CO. DECATUR, ILL.

YOUR BARN DOOR
or gate won't sag or drag on the bottom if hung with the **STANLEY CORRUGATED STEEL HINGES.** They are twice as strong as others and cost no more. Won't bind in the pin and can't break. Ask your dealer for them. Circulars FREE. **The Stanley Works,** Box 20 New Britain, Conn.

easy to get 200 reasonably fertile eggs to fill your machine.
The way the machines are constructed now there is scarcely any danger from fire, which seems to be so dreaded by some would-be purchasers.—Wisconsin Agriculturist.

Failures and Their Causes.

It is asserted that more failures occur in the poultry business, according to the number engaged in it, than in any other one line of business. Some one hearing of the grand success of another and thinking he would like to share his brother's good fortune, embarks his little skiff upon the untried waves of poultry keeping. At first he glides forth quite promisingly, until the shallow water is in his rear and he reaches the broadened deep of experience, when a brisk gale of disease sweeps over his unskillfully guided craft, and he is lost in despair.

These failures are on all sides and their familiarity makes it needless to comment upon them further. Let us look at some of the reasons for this. First, the greater number of failures are due to the inexperience of the party. He thinks all that is necessary is to have a small capital and success is bound to come. Who would think of setting up a doctor's office and practicing medicine without first having had a good training under successful tutors in that line; or who, having lived in a city ever since his birth, would think of starting out to manage a farm without first having had some experience as an apprentice on a farm whose owner was a successful man in his line? Would you consider a man fit for the position of engineer who did not even know the makeup of the machine he was intending to operate?

It is the same with the poultry business. In this business you have to deal with nature, and her laws are so intricate that the novice soon finds himself lost among them. Many embark in the poultry business who wouldn't know a louse if they should see one; let alone how to rid their flocks from the pests.

Another cause is that of mere carelessness on the part of the poultryman. He forgets that he has a flock of fowls to attend to until it is too late, and they are gone to roost, or he lets the little chicks run out in the wet and cold, causing them to die off in great numbers. Then he sits around, blaming it all to "bad luck," until another "box" is ordered and another would-be poultryman is laid away to rest beneath the clouds of despair.

Another class is one that never studies his fowls and of course never gains any new information by which to overcome the difficulties that arise.

Friendly reader, if you have been thinking of embarking upon this rough way, let me entreat you to go slow. Do not move until you are sure of your footing. If you can care for but a pair of birds at first, learn to do that well, before getting any more. A dozen hens well cared for are worth more than a hundred only half cared for. Increase your flock as your experience grows, and by careful watching you will soon gain experience that will be a source of profit and pleasure to you the remainder of your life.—Indiana Farmer.

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To clean the fowls of body lice: Use tight boxes and paint the inside bottom and part way up the sides, and put in as many fowls as the box will accommodate, cover up closely and leave the fowls in box for two or three hours, when the fumes of the paint will have destroyed all lice on them. To kill lice on an animal of any kind, paint an old blanket and bind it around the same. This is the best disinfectant and preventive of disease among stock generally, as well as poultry. Use it freely in the horse stable, cow stable, hogpen, and any place where filth accumulates. This recipe is not for sale, but free to every one, so please hand to your neighbor. A. H. DUFF.

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