

# KANSAS FARMER

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## BREEDERS' DIRECTORY.

Cards of four lines or less will be inserted in the Breeder's Directory for \$15 per year or \$2.00 for six months; each additional line, \$2.50 per year. A copy of the paper will be sent to the advertiser during the continuance of the card.

### HORSES.

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

### CATTLE.

**PEDIGREED** Holstein—M. H. Alberty, Cherokee, Kansas.

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

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

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

**FOR SALE**—Three Red Polled bulls; two 2 years old past and one aged. Imported. Price of latter \$75; the young ones \$50 per head. Can spare some heifers. D. Stainbrook, LaCygne, Linn Co., Kas.

### SWINE.

**FANCY** Poland-China. J. H. TAYLOR, Pearl, Boars and Glits.

**V. B. HOWEY**, Box 105, Topeka, Kas., breeder and shipper of thoroughbred Poland-China and English Berkshire swine and Silver-Laced Wyandotte chickens.

**OHIO IMPROVED CHESTER SWINE**—Pure-bred and registered. One hundred spring pigs at hard times prices. Also a few boars ready for service. H. S. DAY, Dwight, Morris Co., Kas.

**FOR SALE**—Duroc-Jersey pigs; also Poland-China. Bronze turkeys, Toulouse geese, Pekin ducks, Barred Plymouth Rock and Brown Leghorn chickens. Ready to ship out. J. M. Young, Liberty, Kas.

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

When writing advertisers mention FARMER.

### SWINE.

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

**FOR SALE CHEAP**—Choice Poland-China boars, pigs, Cotswold and Merino bucks, fifteen varieties of pure-bred poultry. Prize-winners. No catalogue. Address with stamp, H. H. Hague & Son, Walton, Kas.

**POLAND-CHINAS.**—Dietrich & Gentry, Richmond, Kas., have a fine lot of fall boars and sows and two very fine young sows bred that they will sell cheap. Breeding choice. Quality guaranteed. Write or come and see us.

**PIGS AND EGGS.** WILL SELL TWO POUNDS. Poland-China sow and one boar pigs, bred from Wren's Medium 12387, whose sire has a large list to his credit that have sold for \$500 as any boar, living or dead. Eggs, 50 cents per thirteen. Zachary Taylor, Marion, Kas.

### CATTLE AND SWINE.

**ASHLAND STOCK FARM HERD OF THOR-**oughbred Poland-China hogs, Short-horn cattle and Plymouth Rock chickens. Boars in service, Admiral Chip No. 7919 and Abbottsford No. 2351, full brother to second-prize yearling at World's Fair. Individual merit and gilt-edged pedigree my motto. Inspection of herd and correspondence solicited. M. C. Vansell, Muscotah, Atchison Co., Kas.

### POULTRY.

**FIRE BURNED MY HOME**—And all my grain January 24, so I will sell eggs from Knapp strain S. C. White Leghorns, \$1 per dozen, \$2 per thirty. J. R. Cotton, Stark, Neosho Co., Kas.

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

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

### SWINE.

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

### SELECT HERD OF BERKSHIRES

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

### 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.

### BERKSHIRES.

We offer choice selections from our grand herd, headed by a great imported boar. New blood for Kansas breeders.

**WM. B. SUTTON & SON, Russell, Kansas.**

### J. W. BABBITT, HIAWATHA, KAS.

BREEDER OF **Regist'd Berkshire Swine** 45 in herd, headed by Lord Majestic 34708, a son of Imp. Lord Windsor 30461; dam, Imp. Majestic 30459. 6 boars, 12 glits, by Model Duke II. 22467, and 9 fall of 1894 farrows, both sexes, for sale. Write or come.

### THE WOOD DALE BERKSHIRES

Champions of Two World's Fairs. New Orleans, 1885, best herd, largest hog any breed. At Columbian, Chicago, won ten out of eighteen first prizes, the other eight being bred at or by descendants of Wood Dale. New blood by an 1894 importation of 21 head from England. For catalogue Address **N. H. GENTRY, SEDALIA, MO.**

### GEORGE TOPPING,

Cedar Point, Kas. (CHASE CO.) Importer, breeder and shipper of

### LARGE ENGLISH BERKSHIRE SWINE

of best families and breeding. Choice pigs for sale at low prices. Also Single-combed Brown Leghorns and Mammoth Bronze turkeys. Eggs in season. Farm 6 miles south of Cedar Point. Mention K. F.

### BOURBON COUNTY HERD,

English o Berkshire o Swine.

**J. S. MAGERS, Prop., Arcadia, Kas.** Imported and prize-winning American sows headed by Imp. Western Prince 32202. All selected and bred to head herds and to supply those wanting none but the best. Fall litters now can't be beat. Write or come visit me and see the herd.

### SWINE.

## BERKSHIRES

H. B. COWLES, TOPEKA, KAS.

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

### DONIPHAN COUNTY HERD

Recorded Poland-China Swine.

**A. W. Themanson, Wathena, Kas.**

Herd boars Graceful F. Sanders 13095 S., sire and dam prize-winners World's Fair, and Early Sisson 11993 S., that has one thousand descendants in a radius of fifteen miles. Fall and winter glits bred for sale. Booking orders now. Write or come.

### JAMES QUORLO, MOSCOW, MO.

Breeder and shipper of prize-winning **Large Berkshire Swine.**

S. C. Brown Leghorns and Bronze Turkeys. Headed by King Lee II. 29801, Mephistopheles 32412.

### D. W. EVANS' HERD

REGISTERED POLAND-CHINAS. FAIRVIEW, BROWN CO., KAS.

250 head headed by Swi. Tecumseh 11929 S., by L's Tecumseh 11413 S., and Billy Wilkes 9309 S., by George Wilkes 5950 S. A public clearance sale on Thursday, February 14, 1895, of 75 sows bred to these and other noted boars. Inspection invited.

**JOHN KEMP, North Topeka, Kas.,** breeder of improved **Chester White Swine.** Stock of both sexes for sale. Correspondence invited.

### MAINS' HERD OF POLAND-CHINAS.

**JAS. MAINS, Oskaloosa, Kas.** (Jefferson County.)

A grand lot of sows bred to Monroe's Model, Excel, McWilkes Jr. and Storm Cloud 2d. Also all other classes and ages of stock for sale. I guarantee safe arrival and stock as represented or money refunded. Breeding stock recorded in Ohio P. C. R.

### J. T. LAWTON, North Topeka, Kas.,

breeder of improved **Chester White Swine.** Stock for sale. Pairs or trios not akin shipped. Correspondence invited.

### ROCK QUARRY HERD.

**N. E. MOSHER & SON, SALISBURY, MO.**

Fifteen choice Poland-China sows bred to Mosher's Black U. S. and Faultless Wilkes for sale; ten choice young boars ready to go; six young Hereford bulls. Also eggs for sale from Black Langshans scoring 94 to 96% and from a choice lot of Light Brahmas and Mammoth Bronze turkeys.

### BERKSHIRE, Chester White, Jersey Red and Poland China

**P. W. SMITH, Cochranville, Chester Co., Penna.**

### Poland-China Hogs, Holstein Cattle

and B. P. Rock chickens of the choicest strains. Butler's Darkness No. 6846 S. and Ideal U. S. Nemo at head of swine herd. Only choice stock shipped on order. Sows bred and a few extra good young boars for sale. Write your wants. Satisfaction guaranteed. Sixth Annual Clearance Sale, Sept. 17, 1895.

**BERT WISE, Reserve, Brown Co., Kas.**

### A. E. STALEY,

Ottawa, Kansas. **CHESTER WHITES** and **POLAND-CHINAS.** Light Brahma eggs \$1.50 for 15.

### JOHN A. DOWELL'S HERD

REGISTERED POLAND-CHINA SWINE. Robinson, Brown Co., Kas.

130 head, all ages, headed by Onward 8987 S., sired by George Wilkes. He is assisted by Tecumseh Wilkes, sired by General Wilkes 71977. The females belong to the best strains. Come or write.

### W. S. ATTEBURY,

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

### "WILDWOOD" POLAND-CHINAS.

**WILKES, FREE TRADE AND U. S. BLOOD.** Everything reserved for Public Sale, October 30, 1895. Catalogues ready in September.

**L. N. KENNEDY, Nevada, Mo.**

### CATTLE.

## SUNNY SLOPE FARM,

C. S. CROSS, Proprietor, Emporia, Kas.

Breeder of **PURE-BRED HEREFORD CATTLE.** Herd headed by Wild Tom 51592, a son of Bean Real 11055 and assisted by sons of Cherry Boy 26475, Archibald 1st 39258 and Washington 22615. 200 head, all ages, in herd. Strong in the blood of Lord Wilton, Anxiety and Horace. A choice lot of young heifers, fit for any company. Bulls all sold. Correspondence solicited, or, better still, a personal inspection invited.

## SHANNON HILL STOCK FARM.

**G. W. GLICK, ATCHISON, KAS.**

Breeds and has for sale Bates and Bates-topped **SHORT-HORNS.** Waterloo, Kirklevington, Philbert, Cragg, Princess, Gwynne, Lady Jane and other fashionable families. The grand Bates bulls **Winsome Duke 11th 115137** and **Grand Duke of North Oaks 11th 115735** at head of the herd. Choice young bulls for sale now. Visitors welcome. Address **W. L. CHAFFEE, Manager.**

### SWINE.

## TOWER HILL HERD

**PEDIGREED POLAND-CHINAS.**

**B. R. ADAMSON, Prop., Ft. Scott, Kas.**

25 highly-bred brood sows of best strains, headed by **Black Dandy 8809 S.**, **Black Stop 10550 S.** and **Joker Wilkes 12682 S.** About 100 selected individuals sold this season. 25 youngsters coming on now for choice. Write or come and visit my herd.

## Quality Herd Poland-Chinas.

For first choice pigs from stock producing winners of seven prizes **World's Fair.** Darkness Quality 2d and Ideal U. S. World's Fair. U. S. head the herd. Both first-prize winners Kansas State fair 1894. Come or write your wants. **Willis E. Gresham, Burton, Kas.** Secretary Kansas Swine Breeders' Association

## PLEASANT VIEW STOCK FARM.

**J. A. WORLEY, Sabetha, Kansas.**

**Poland-China Swine, Short-horn Cattle, Light Brahmas and G. L. Wyandottes.** Herd headed by Anxiety 20251 A., assisted by Combination U. S. 13408 and America's Equal 12279. Have some choice fall pigs, both sexes, for sale, and a few Light Brahma cockerels. Eggs \$1 and \$1.50 per setting. Write. [Mention KANSAS FARMER.]

## Evergreen Herd Poland-Chinas.

**Winterscheidt Bros., Prop'r., Horton, Kas.** Headquarters for Admiral Chip pigs. The great \$250 boar, Admiral Chip 7919, heads the herd, assisted by Kansas Chief 13574, Winterscheidt's Victor 13294, Geo. Wilkes Jr. 11893. Also pigs from Orient's Success 2729 and Banner Chief 12714. Sows of following strains: Tecumseh, None Such, Wilkes Admiral Chip, etc. Prices reasonable. Write or come

## J. R. KILLOUGH & SONS,

Richmond, Franklin Co., Kansas,

## POLAND-CHINA SWINE.

Headed by Upright Wilkes 13246 and assisted by J. H. Sanders Jr. 13739. Our brood sows are all richly bred and high-class individuals. A fine lot of fall pigs, both sexes, ready to go at reasonable prices.

## HILLHURST STOCK FARM

**GARNETT, KAS.,** (Anderson Co.)

**Walter Latimer, Prop'r.**

## POLAND-CHINA SWINE

of the Tom Corwin and I. X. L. strain. None better. Public sale, Friday, Sept. 6, 10 a.m. Send and have your name recorded for a catalogue at once. Stock grown by Latimer are sure winners. Col. Sawyer, auc.

## STANDARD POLAND-CHINA HERD.

**CHAS. A. CANNON, Proprietor, HARRISONVILLE, CASS COUNTY, MISSOURI**

Breeder and shipper of registered Poland-China swine of the best strains. Herd headed by Chow Chow 5933 S., assisted by a Black U. S. son of Imitation 27185 O., also a son of Tecumseh Jr. 10207 O. 220 head in herd. Young boars and glits yet on farm. Write or come and visit me.

## SUNNY SLOPE FARM, EMPORIA, KANSAS.

200 head of Poland-China hogs, headed by Long-fellow 29985 O. (who has the best Columbian record west of the Mississippi), J. H. Sanders Jr., Hadley Jr. 27505, Sir Charles Corwin. We also combine the blood of Black U. S., Ideal U. S. and Wilkes. 100 head of brood sows. Also 100 head of

Berkshires, headed by the well-known boar, Major Lee 31139. We have 25 glits bred by him to General Lee of Gentry breeding and Royal Peerless the Great. We have one of the largest herds of hogs in the United States. Why not come to the fountain head for brood sows? 200 head of fashionable bred Herefords. **H. L. LEIBFRIED, Manager.**

(Breeder's Directory continued on page 18.)



## The Stock Interest.

### THOROUGHbred STOCK SALES.

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

SEPTEMBER 6—Walter Latimer, Garnett, Kas., Poland-China swine.  
SEPTEMBER 13—Martin Melsenheimer, Hiawatha, Kas., Poland-China swine.  
OCTOBER 4—Winterscheidt Bros., Horton, Kas., Poland-China swine.  
OCTOBER 9—Geo. W. Null, Odessa, Mo., Poland-China swine.  
OCTOBER 10—J. R. Killough & Sons, Richmond, Kas., Poland-China swine.  
OCTOBER 22—F. M. Lall, Marshall, Mo., Poland-China swine.  
OCTOBER 23—C. G. Sparks, Mt. Leonard, Mo., and G. L. Davis, Elmwood, Mo., Poland-China swine.  
OCTOBER 29—Chas. Cannon, Harrisonville, Mo., Poland-China swine.  
OCTOBER 30—L. N. Kennedy, Nevada, Mo., Poland-China swine.

### TROUBLE FROM KAFFIR CORN.

In a recent communication to the *Breeder's Gazette*, Frank E. Barnhart, of Wabaunsee county, Kansas, gives his experience with sorghum cane and Kaffir corn. He says:

"I sowed two hog lots in cane last spring. In one I let the hogs and two bull calves run and pasture. The calves did well on the pasture. When they had eaten the pasture down I mowed the other lot and fed them all they would eat. I cut it just as I fed it. By the time I got over the patch which I first mowed the cane was about fourteen inches high and I mowed it again, and continued to recut and feed it till the frost entirely killed it. I think I cut it four times during the summer. I fed it green. I fed it wet with dew, I fed it when there was no dew, and I fed it when wet with rain—always fresh cut and all they would eat with no other feed. The calves were weaned when three months old, and all they had all summer was green sorghum and good spring water to run to, and I never had calves to grow any faster and do any better.

"After I read Secretary Coburn's article on the death of those cattle in Sedgwick county, this State, I cut the cane once more after it had had a light frost, with no bad results, and I was of the belief that it was only a case of bloat with the other fellow's cattle, and I thought that such articles regarding sorghum and Kaffir corn would do an injury to what I still believe to be the greatest feeds for this Western country or any other country—sorghum and Kaffir corn, either green or cured for fodder; and I intended to write my opinion to the *Gazette* then, but now I am glad I did not.

"Now for my experience feeding Kaffir corn. I sowed in drills last spring one-quarter of an acre of white Kaffir corn. I never raised any before. I cut it after a light frost—not enough to damage it—let it stand in shock about a month, then put in the barn, and am feeding it now with the best results. When I removed the Kaffir corn to the barn the second growth was about four to six inches high and was killed by a frost a night or two before. The next morning after hauling the Kaffir corn I turned in two cows heavy with calf and the two calves that had lived on sorghum all summer, like the other fellows did, to eat the aftermath. In less than twenty minutes I went to see if eating the second growth was killing my cattle, and to my surprise one of the calves was down and the other calf was reeling like a drunken man. The two cows showed no effects of eating it. I drove out the cows and calf that could walk and got the other calf on his feet, but after two or three steps he fell like he was shot and would not try to get up any more at that time. One of my neighbors, who is a great hand to bleed calves for 'black-leg,' happened along at that time and suggested bleeding the one that was still on his feet, as he thought the other could not be saved, so I told him to bleed him. By that time the other could hardly stand and did fall before we could get the cord around his neck. We made the string as tight as we both could draw it, but could not raise the vein, but the neighbor lanced him six or seven times where the vein should be, but failed to get one drop of blood. We then tried to bleed the other calf, but could not, which I think proved that there was not much circulation.

"As I found they could not be bled

I went to the house and fixed up two separate doses of tincture of aconite, one teaspoonful in a pint of warm water to each calf; gave it to them in drenching bottle, and they got all of it. In less than twenty minutes after giving the aconite both calves were on their feet and we drove them about forty rods to the barn, where I also gave them a physic of lard and molasses. To-day both calves are running in stalk field, fat and well and apparently none the worse for their illness, but I will never pasture second-growth sorghum or Kaffir corn again. The calves never showed any signs of bloating; they laid flat on their sides with their eyes rolled up, a little froth at the mouth and breathing short.

"In looking over the stubble I noticed on the ends of each stalk a sap, and also noticed that the cattle had eaten the ends off of the same, and I thought that there was the poison, if it is poison (and I believe it is), instead of the second growth. But I think some of our professors will be able to locate it this year, and I also believe that tincture of aconite will save such cases."

### Values of Feeding Stuffs.

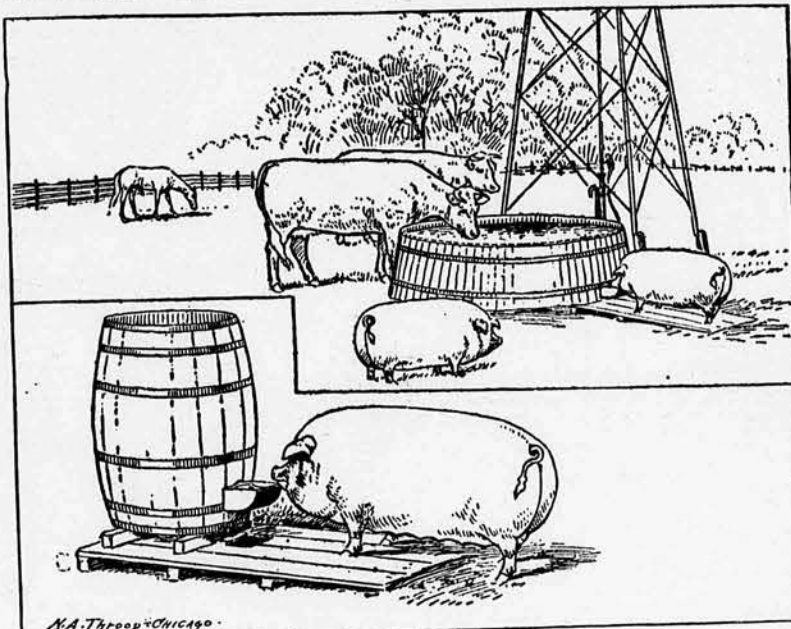
EDITOR KANSAS FARMER:—In looking over the table of feed stuffs, copied in the *KANSAS FARMER*, from United States Bulletin No. 22, I find much of interest. Many of us farmers know nothing about it without more figures added. For instance, skimmed milk yields about one-ninth the calories of corn. Corn is about one-

of all animals and it is the nutrient which is least abundant and for which we have to pay the most money. Nevertheless, it has no more heat units than the carbohydrates. Protein and all carbohydrates are alike estimated to contain 1,860 heat units per pound, while fat is estimated to yield 4,220 heat units per pound; but it should be borne in mind that carbohydrates and fat perform practically the same function in the body, namely, that of supplying fuel from which animal heat and energy is developed, while the protein has not only the same function but it supplies the material from which the muscular fibers are built up, which either of the others cannot do for the reason that they contain no nitrogen. To show that it is a fallacy to base the feeding value of a food stuff on its fuel value, we need only to compare corn meal with linseed meal. Everybody knows that linseed meal is not only the more costly but the more valuable food material, and yet the digestible nutrients in a hundred pounds of corn meal will develop 148,028 heat units, while the same nutrients in one hundred pounds of linseed meal will develop only 144,313 heat units. In general, that feed is the most valuable which contains the highest per cent. of digestible protein.

C. C. GEORGESON.

### Iowa Swine Breeders.

Secretary Prine has favored us with a detailed account of the annual meet-



LAKE CITY AUTOMATIC STOCK FOUNTAIN.

fifteenth more value than linseed meal, as far as units of heat are concerned. We now draw our conclusion. Counting corn 50 cents per bushel, we find skimmed milk worth about 5 1/4 cents per fifty-six pounds, making it worth about 1 cent per gallon; linseed meal, the same as corn by the pound. We see feeding alone some feeds would be expensive, so much so that it would make a loss to the feeder, but in connection with corn or any of our cheap grains we get gains that we know are of profit to us, especially with young stock. Calves, where pasture is poor, can be fed corn and skimmed milk and become large-boned, healthy animals. The same is true of pigs; probably more marked in the last.

Our age is an age of progress and a table as above cited should be cut out and consulted frequently. ELMER LAUGHLIN, Foster, Mo.

This letter was referred to Prof. C. C. Georgeson, who furnishes the following elucidation of the subject:

This letter was written before the remaining portion of Bulletin 22, to which it refers, was published, and probably the correspondent by this time understands the case fully. The fuel value (heat units or calories) have but little to do with the feeding value of the feeding stuffs mentioned in the table. Apparently the correspondent attempted to judge of the value of a feed by its fuel value. While it is true that a high fuel value may, in a sense, indicate the value of a food stuff, inasmuch as it may indicate that the food contains a large amount of digestible nutrients, it does not by any means indicate that it contains the nutrients that are of the most importance. Digestible protein, the substance which contains nitrogen, is the most important nutrient. It is required to be present in a certain ratio in the food

ing of the Iowa Swine Breeders' Association, held at Des Moines, recently. There was a good attendance and several interesting papers and discussions relative to swine husbandry were presented.

It will be remembered that the National Association of Expert Judges also held a meeting in connection with the other association and conducted an instructive examination of applicants for certificates as expert judges and awarded certificates to the following gentlemen: W. A. Jones, Van Meter, Iowa, on Duroc-Jerseys, Chester Whites and Berkshires. George Heyl, Washington, Ill., on Poland-Chinas. Harvey Hurd, Petersburg, Ill., on Poland-Chinas. Clarence Dunn, Van Meter, Iowa, on Chester Whites. Elmer Swallow, Booneville, Iowa, on Duroc-Jerseys, Chester Whites and Berkshires. Considerable score practice was had by the applicants for expert judges with a specimen of each of the principal breeds of swine.

The Iowa Homestead tendered a banquet to the breeders present which was enjoyed to the utmost.

Not many business houses in these United States can boast of fifty years' standing. The business of Dr. J. C. Ayer & Co., Lowell, Mass., whose incomparable Sarsaparilla is known and used everywhere, has passed its half-centennial and was never so vigorous as at present.

If the farmers of the Northwest knew the truth about Alabama's climate and the possibilities of her soil, there would not be enough land to go 'round. Write D. H. ROGAN, Colonization Agent, Q. & C. R. R., Birmingham, Ala.

### Lake City Automatic Stock Fountain.

We have requested the Stock Fountain Company to present more forcibly the merits of their automatic stock fountain, and have obtained from them the above illustration, that with it they might present the following, which they consider practically as well as scientifically true. However, they especially wish to call attention to the mechanism, simplicity, strength and convenience of the Lake City Automatic Stock Fountain. It has a weight valve, governed by gravity, and is not in any way governed by floats or springs. A float must be arranged so that water governs the valve, and as it floats about in its receptacle, it will permit small particles to get in between float and pan, and in a wet spring especially, mud getting under float will hold same up, and the valve will open, thereby wasting the entire amount of water in tank or barrel, and no way of controlling. Springs soon rust and lose their control of valve. They advise that before purchasing a fountain one should understand whether it is governed by a gravity valve; also if it has the right sized drinking cup. You never want to buy a fountain that has large, double drinking trough governed by a float, for the reason that a lot of hot, filthy water must be consumed before a fresh supply is furnished. The large double trough is but slightly removed from the old, dirty wooden trough. It is a fact you would prefer drinking water from a glass filled from a cool body of water in preference to drinking from a bucketful that has been standing in the sun. The Lake City, with the desired size drinking cup represents the glass; the large double float kind represents the bucket.

The fountain, it is claimed, has the only downward gravity valve; every point is perfectly governed and strong; it cannot become loose nor leak around the nipple, as it is held solid by elbow (which is valve seat) acting as a lock-nut. It is arranged for barrels, two-inch tank and three-inch tank. Their tank fountain can be used on a barrel by placing block of wood to take up extra space between pan and barrel. It has now been on the market for three years and so far the highest praise has been given it. The company now has 70,000 of the fountains on the market and over 1,200 dealers and agents making a decided success. The directions by the company should be closely followed when given in their correspondence.

The Lake City Automatic Stock Fountain claim that in theirs you buy the best, that you will not become discouraged with the stock fountain. They suggest that the greatest detriment to the growth of stock and increase of cholera is principally due to impure and improperly supplied water. Pig-raisers must commence to pay as much attention to furnishing pure water as feed. Reasonable laws of health demand it. With corn alone, and one of these fountains, they claim pigs will gain from two and one-half to three pounds a day, and keep healthy. It is surprising how much more pigs will drink on being supplied by one of these fountains, and as water is healthful and makes fat, give it to pigs clean, and a bountiful supply.

Regarding hog cholera, which is often due to impure water: Commence early in the spring to furnish pure water, and plenty of it, and keep little pigs from drinking the running water that contains all the contagion of the winter accumulation, and as they grow continually furnish water to prevent further infection. The manager states that he has yet to find a single herd of pigs having cholera or any disease called cholera that has used one of these fountains, and they now have over 600 dealers and 200 canvassing agents selling them, and have in use over 70,000 fountains.

The price of their fountain is \$3, and they claim it will pay for itself each week in watering only ten pigs. Notice their advertisement on page 414, where the company offers to prepay the express and send one on trial to any address, same to be paid for if found satisfactory; if not satisfactory you are only required to return fountain to express office. For reason they only charge \$3 and pay the express and do not ask for money until satisfied, we advise every hog-raiser to order one on trial; or, if satisfied with above advice, forward money with order or consult your hardware or implement dealer. The company promises to refund money if you are not satisfied, whether you order by their trial offer or forward money.

The company wish, when ordering that the nearest express station and company be noted. Address all communications to Stock Fountain Co., Lake City, Iowa.

### He Wants Your Address.

If you're going east, Brunner, 509 Chestnut street, St. Louis, can be of service to you. He represents the Vandalia-Pennsylvania lines. Daily trains to Pittsburgh, Harrisburg, Baltimore, Washington, Philadelphia and New York leave St. Louis over this route at 8:12 a. m., 8:40 a. m., 1 p. m. and 10:30 p. m. Ask him about the first-class service.



## Agricultural Matters.

### COW PEAS IN THE NORTH.

My experience is on the parallel of latitude of Cincinnati, and covers several years, growing, as I do, twelve to eighteen acres a year. There is yet much to learn in regard to the usefulness of peas in this latitude, and I, of course, will try to give only what facts I have gotten in my experience with them.

In the first place, the cow pea is no rival of red clover in the North. This is a definite fact. Clover is the best plant for increasing the productiveness of the soil that we know of, and produces more good forage for stock than any other leguminous plant. [Mr. Agee evidently knows little about alfalfa.—EDITOR.] But there are circumstances under which we feel the need of some other manurial plant. Red clover requires about one and a half years for its development. There is general need of fertilizing crops of quicker growth, to be used as adjuncts of clover. Very often clover fails; sometimes there is too much filth in land to get clean growths of hay. Sometimes one does not wish to seed a field to wheat—and here wheat is the usual nurse crop for red clover. Often one has truck patches that need a cleansing crop. A score of things combine to make a quick-growing manurial crop desirable on many farms.

Cow peas cannot be depended upon in this latitude as a forage crop of great value. So far as I have found, their chief value as food would be in fattening hogs that were turned upon them in the fall to harvest the grain. I hand-picked forty-five bushels of peas for seed last fall, and here on good land I would regard ten bushels of peas per acre a big yield. Were they sown in drills and cultivated, the yield probably would be greater, but as I grow them for manure, broadcasting is best, I think. Unless one is fixed to harvest the peas with hogs, I doubt whether in this latitude there is much food value to be counted upon from peas. I grow them primarily to add humus and to add nitrogen to the soil, and to improve its mechanical condition.

The cow pea is wholly distinct from the Canada pea. The latter is often sown with oats in early spring, and hence the numerous queries in regard to the possibility of sowing cow peas with oats. The cow pea is really a bean. It is tender, and should not be sown until the ground is thoroughly warm. I now prefer to seed in the first ten days of June in this latitude. Probably there is no better way of seeding than with the grain drill, using five to six pecks per acre. While a cow pea will grow with half a chance, a well-pulverized seed-bed is preferable, as it holds moisture better in the severe droughts we often have in July. The pea will grow with little rain, if there is plenty of heat, but if a heavy body of rye or other vegetation is turned under immediately preceding the seeding to peas, drought retards the growth.

Bulletin No. 26, of the Georgia station, describes more than forty varieties of cow peas. Prof. Massey, to whom I owe my first acquaintance with this valuable plant, recommended the Black or Clay for this latitude. I observe that this bulletin rates both these varieties as late, and it would seem that earlier varieties might do better further north. The earlier varieties make lighter growths, and as the Black matures with me, I am inclined to think Prof. Massey's recommendation was just right for my latitude. Further north an earlier variety would do better. The Black Eye made a light growth with me last year, and I shall not sow it again.

It should be apparent from what has been said that the farmer of this latitude should not regard cow peas as a rival of clover, either in fertility or feeding value. If one has a good clover rotation, and clover does well, he has no place for peas. On the other hand, I know of thousands of acres of land in my latitude that would be placed on much better paying footing if they were given two heavy crops of vegetable matter in the year, now wasted growing a little clover, more plantain and most white-top. If the corn or

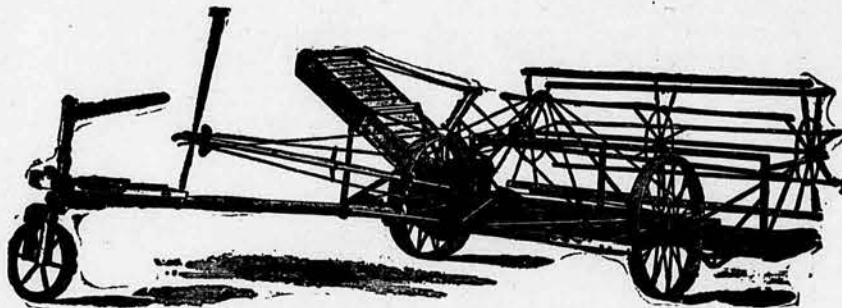
potato stubble were sown to rye, to be turned under in the latter part of May, and the land then seeded to peas, to be turned under after hogs have harvested the grain, the soil would be improved for years to come. Most unproductive soils are deficient in humus. When filled with it, the mineral matter in the soil becomes available. There may be—usually are—many tons of potash and phosphoric acid in an acre of land. When the soil is robbed of its humus this mass of mineral matter is prevented from feeding plants. A year given to the production of manurial crops may be found an exceedingly profitable one. The farmer who can get all the clover he wants is happily fixed. The one who cannot, if he be located where peas will thrive, can get equal results with rye, followed by peas. There is more expense, but the improvement of the soil is sufficiently great to make the method a paying one, and I believe it paves the way to successful clover growing in the end by furnishing vegetable matter to the soil, which appears to be requisite to the production of clover.

The usual price of peas early in the season is \$1 to \$1.10 a bushel. I now hand-pick my own seed, which costs me about 50 cents a bushel in cash, I losing the fertilizing value, which is quite an item. When gathering, I scatter a hundred bushel boxes in the field, pay 3½ cents per box of pods for picking. These are stored and the peas felled out in the winter. The method is quite a primitive one, but here in the North it would not pay to arrange at much expense for harvesting the few peas we save. I have no seed for sale, my neighbors wanting many more bushels for seed than I have to spare.—Alva Agee, Gallia Co., Ohio, in *Practical Farmer*.

this principally because for a short time the soil, in a degree, failed to perform its function.

Agriculture, then, being of such vital importance, the duty of the farmer is a grave one. The depression mentioned resulted principally from uncontrollable causes—those of nature; yet other evils exist, just as extensive and baneful, which are wholly preventable. The most glaring of these and the only one to which we shall refer is this—the continued cropping of land without making to it any corresponding return. An eminent writer says, that while our population is increasing and our lands being appropriated, the productive capacity of our soil is being steadily reduced, which is practically the same as reducing its quantity. Generally our agriculture is exhaustive agriculture. Each crop leaves the soil poorer, as that taken from it is not returned. Forests are felled but not replanted. Shipments abroad of farm products, or flushing through sewers into the sea, the elements of fertility which have been ages in being deposited in the soil, is our constant practice. Tillable land is limited. Mercantile ventures may be extended indefinitely; the activity of commerce may be such that the very sea itself is churned into foam by the steam propeller; the growth of other industries is without limit, but agriculture is of necessity restrained within the boundaries of the tillable domain.

Then let the possessor of land discard the idea that its fertility is inexhaustible. It lies within his power to improve, sustain as he found it, or do it irreparable injury. We trust he will adopt the first course. By so doing, not only will he increase his own prosperity, and that of his fellow workmen in other occupations, but it will enable



HODGES CHAIN-DRIVE HEADER.

### The Duty of the Agriculturist, and Is He Living Up to It?

Abstract of graduating thesis of E. J. Abell, of Riley, at Agricultural college commencement, 1895

That agriculture is the most important of all industries is universally recognized. This opinion is based upon most substantial reasons. Man's subsistence being derived from the soil, its cultivation becomes imperative. Modern agriculture makes possible the existence of man in countless numbers. North America, formerly supporting only comparatively few Indians, now, with modern methods, sustains with ease nearly one hundred millions of people with wants much more varied than were those of their predecessors.

The entire fabric of our civilization hinges upon this science. Therefore, whatever tends to promote or retard agricultural advancement similarly affects advancement in civilization. Agricultural prosperity means general prosperity; agricultural depression betokens a similar condition in other industries. And as the industries total constitute the foundation of civilization, and their healthy perpetuity makes it possible to sustain civilization, the proposition setting forth the importance of agriculture is of undeniable truth. In proof of the close dependence of other industries upon agriculture, attention is called to some results of the late agricultural depression: A decrease of nearly one-half in applications for patents; the diminished output and fall in price of many manufactured products; the idleness of much capital rather than its investment in manufacturing, etc., thus depriving many needy men of employment. Industry generally has been unbalanced—checked at its greatest activity in history, and so injured that years will elapse ere it will regain its former strength and activity. And all

him to hand down to posterity a heritage unimpaired by the blessings he derived from it.

### Corn Harvester and Binder.

EDITOR KANSAS FARMER:—I am one of your subscribers, and I think that some time back I read in the *FARMER* something (editorially) about a corn harvester—something that cut and bound the corn in bundles. I have searched the *FARMER* for the note spoken of but can't find it. My impression is that the machine was new, was a success, and at a small price. If you can recall the matter or know of such a harvester or harvesters, please tell me where I can learn more of it.

Altoona, Kas. M. L. SOMERS.

—A letter addressed to the Deering Harvester Co., or to the McCormick Harvester Co., Chicago, mentioning the *KANSAS FARMER*, will bring full information as to the valuable machine referred to.—EDITOR.

### More Chores and Less Farming.

EDITOR KANSAS FARMER:—Inclosed find \$1 for which please send me the *KANSAS FARMER* one year. In looking over a *FARMER* issued six years ago I read this in it: "Do more chores and not so much farming," and as we look over this Western country, we cannot help but see what we have missed by not taking that advice. If we had paid more attention to the cows, the pigs and chickens, and farmed on a smaller scale, no one would have ever had to leave this country. If we had done more chores and not run ourselves in debt trying to farm a whole county, so many would not feel that life is not worth the living in western Kansas. Irrigation is a good thing when you are rightly situated. Farming is well in the right year, but don't neglect the cows, the pigs and the chickens, and you are sure of a good living and the

## Over Thirty Years Without Sickness.

Mr. H. WETTSTEIN, a well-known, enterprising citizen of Byron, Ill., writes: "Before I paid much attention to regulating the bowels, I hardly knew a well day; but since I learned the evil results of constipation, and the efficacy of



### AYER'S

Pills, I have not had one day's sickness for over thirty years—not one attack that did not readily yield to this remedy. My wife had been, previous to our marriage, an invalid for years. She had a prejudice against cathartics, but as soon as she began to use Ayer's Pills her health was restored."

## AYER'S Cathartic Pills

Medal and Diploma at World's Fair.

To Restore Strength, take Ayer's Sarsaparilla.

pleasure of enjoying life in as good a country as there is in God's world. Do more chores and read the *KANSAS FARMER* and you will succeed in western Kansas. JEFF.

Graham Co., Kas.

The Sioux City (Ia.) *Journal* says: A good many farmers in Woodbury county who have been experimenting in the line of deep plowing and subsoiling during the last two or three seasons are no less gratified than astonished at the results. Farms that were all run down and considered worn out have been made, in spite of droughts, to yield from twenty-five to fifty bushels per acre of wheat, oats and corn, which is double that raised previously, with favorable seasons and the old methods of shallow plowing. Lands plowed eight and ten inches deep last season and subsoiled have suffered but very little this spring from the dry hot winds and weather, the quantity of moisture retained being amply sufficient to keep all crops in a vigorous growing condition.

### Hodges Chain-Drive Header.

We take pleasure in presenting to our readers a cut of the old reliable Hodges header, which for thirty-five years past has been unrivaled in this class of grain-cutting machinery. The Acme Harvester Co., of Pekin, Ill., who manufacture this machine, report unprecedented activity at this time in the sales of same, and attribute the unusual demand, from unusual quarters, to the fact that farmers are this year, more than ever, making diligent search for the cheapest and best mode of harvesting their grain. When wheat was selling for a dollar a bushel the expense of binding twine cut but little figure with the average farmer, but under existing conditions, demanding the closest economy, every cent of expenditure must be carefully scrutinized and every possible saving must be made.

The Acme Harvester Co., also manufacture a full line of sweep rakes and stackers, spring-tooth rakes of all kinds and sizes, stack cover chains and hay tools of all descriptions. "Maud Muller," their all-steel hand and horse-dump rake, is effective in action, substantial in construction, attractive in appearance and a great favorite with the trade in general. The "Monarch" is the only sweep rake built that will admit of the teeth being lifted clear of the ground for transportation when heavily loaded, and is the only rake that can be folded to pass through an ordinary farm gate. The Acme stacker is made of carefully-selected material and thoroughly braced at all points where there is any strain in operation.

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Connecting link between two great cities, putting the West and Southwest in touch with the East. Daily trains leave St. Louis union station, carrying passengers without change to Pittsburg, Harrisburg, Baltimore, Washington, Philadelphia and New York. Send to Brunner, 509 Chestnut street, St. Louis, for details of the fine service and fast time.



## Irrigation.

## HOW MUCH WORK CAN A WIND-MILL DO?

Efforts are in progress in Kansas to ascertain, as nearly as possible, the amount of work which may be safely expected of windmills in practical irrigation. This movement is very properly headed by Hon. M. B. Tomblin, of Goodland, member of the State Irrigation Commission, whose results will be promptly laid before the readers of the KANSAS FARMER. While this inquiry is in progress it is well to examine into investigations heretofore made by other experimenters. The most recent careful examination of the subject was made by Lieut. I. N. Lewis, in connection with his work of erecting electric lighting plants to be operated by wind-mill power. In the December number of the *Engineering Magazine*, New York, he says:

"The following table, showing the actual useful horse-power developed by windmills of different sizes, is the result of my own experiments, made with wooden wheels, driving differentially wound dynamos. It will be found to be a conservative, though fairly accurate one, for the best mills of this class. For best steel mills the figures should be increased 20 per cent."

for the best steel mills. Computing this we have:

TABLE II.—STEEL WINDMILLS.

Diameter of wheel in feet.	Horse-power computed from Table I.						
	5-mile wind.	10-mile wind.	12-mile wind.	15-mile wind.	20-mile wind.	25-mile wind.	30-mile wind.
12.	...	.15	.30	.60	1.20	2.00	2.40
14.	...	.30	.60	1.20	2.10	3.00	3.60
16.	...	.45	.90	1.80	2.70	4.00	4.80
18.	...	.60	.90	1.50	2.40	3.60	4.80
20.	...	.90	1.50	2.40	3.60	4.80	6.00
25.	...	1.50	2.10	3.60	5.40	7.20	8.40
30.	...	2.40	3.60	4.80	6.00	8.40	10.80
35.	...	3.60	4.80	6.00	8.10	9.90	12.10

Since most of the mills now being erected in Kansas are of steel of the best patterns, consideration will be given to table II. This is an exceedingly interesting table. Giving attention to the column for "eight-mile wind"—that is, wind blowing at the rate of eight miles per hour—it is seen that, for the twelve-foot and fourteen-foot mills, this light wind fails to yield measurable amounts of power, while the twenty-five-foot mill gives one and a half horse-power, and the thirty-five-foot mill gives over three and a half horse-power. A twelve foot wheel af-

The twelve-foot wheel in such a wind gives useful work, amounting to over half a horse-power.

If the power afforded by the various sizes of mills in a sixteen-mile wind were arranged in a series it would be found that the increase in power with increase in diameter of wheel is very rapid. Thus, for the mills specified, the relative powers are as 1, 2, 3, 4, 6, 9, 11, 13½. It is apparent that the power derived increases more rapidly than the squares of the diameters of the mills, but the exact law of increase is not easily determined. So also the increase in power with increasing velocity of wind is more rapid than the increase in squares of the velocities, but the law of increase is not apparent from these experiments. The fact that the larger sizes of mills give eight horse-power in an ordinary wind is sufficient to mark this as an important source of power.

The question of how much of the time the wind blows at the different velocities, as well as several other questions, has been studied by Prof. O. P. Hood, of our State Agricultural college, who has prepared the following tables, plates of which are loaned by Superintendent Thompson, of the printing department of the college.

any windmill will be useless. These percentages subtracted from 100 give the percentage of the time in each month during which useful work may be expected from a mill of best construction and suitable size. It is apparent from this table that the windmill rests more in August than in any other month, sometimes "laying off" nearly half of the hours during this month. March and April are the mill's most active months and it is fairly industrious during May and June.

But for irrigation, the question is not so much how much of the time the mill will do a little work as how much work will it do during each month. For this purpose, Prof. Hood has adopted the assumption that a ten-foot mill will give one-tenth horse-power in a fifteen-mile wind, and assuming that the power derived is as the third power of the velocity of the wind, has computed table V., showing the probable power expressed in horse-power hours which may be derived from a ten-foot mill at each wind velocity—shown in table III.—in each month from May, 1891, to May, 1895.

It will be thought by many that Prof. Hood places the power of the ten-foot mill too low. His figures are consistent with themselves, however, and may be multiplied by any constant factor which may hereafter be determined by experience. They may be made applicable to any other size of mill by comparison with table II.

The total amount of work which may be expected of a mill during any month will determine its value as a power to be used in irrigation. Table VI. gives computations, made by Prof. Hood, showing the number of hours per day the wind would have to blow fifteen miles per hour in order to give the total horse-power produced by the wind as it actually blows.

It is to be noted that the windy month of March produces so much power that it is equivalent to that which would be produced by a fifteen-mile wind blowing 9,858 hours, or 31.8 hours every one of the thirty-one days of the month. In August the case is different, and a fifteen-mile wind would do the total wind work of that month by working only 7.2 hours each day. Last year the case was even worse in August, the total work of that month being equal to only 4.4 hours per day for a fifteen-mile wind. This emphasizes the importance of having the subsoil well stored with water before the calms of August occur. Even July should be provided against, for the power of the wind is liable to be small during that month.

Table VII. shows that of all the power available from a mill in July and August of 1894 over 50 per cent. was from winds below fifteen miles per hour.

Table VI. shows that we can expect the equivalent of a wind velocity of fifteen miles per hour for eighteen hours per day for the year. The question of utilizing this power is one of mills and the adaptation of the

work to the varying power produced. Appliances should be so arranged as to make available the power of light winds and also to utilize fully the great power produced by the strong gales.

That windmill power is to do a large part of the work of raising water for irrigation admits of no question. Turning attention to one of the larger sized mills, say the twenty-five-foot mill—an entirely practicable size—and allowing that its power in a fifteen-mile wind is five horse-power, it will be seen, from Prof. Hood's computations, that this should give an average of ninety horsepower hours per day. This, according to the formula proposed in last week's KANSAS FARMER by Ira C. Hubbell, of Kansas City, [viz.:  $G \times H = 1500 P$ , in

TABLE III.—Showing the number of hours each month the wind blew at each velocity, at Manhattan, from May, 1891, to May, 1895.

[illegible]

TABLE I.—WOODEN WINDMILLS.

Diameter of wheel in feet.	Actual useful horse-power developed.					
	8 mile wind.	10 mile wind.	12 mile wind.	16 mile wind.	20 mile wind.	25 mile wind.
12.	...	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	1	2
14.	...	$\frac{1}{2}$	$\frac{1}{2}$	1	1 $\frac{1}{2}$	2 $\frac{1}{2}$
16.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	1 $\frac{1}{2}$	2 $\frac{1}{2}$	3 $\frac{1}{2}$
18.	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	2	3	4
20.	$\frac{1}{2}$	$\frac{1}{2}$	2	3	4	5
25.	$\frac{1}{2}$	2	3	4 $\frac{1}{2}$	6	7
30.	$\frac{1}{2}$	3	4	5 $\frac{1}{2}$	7	10
35.	3	4	5 $\frac{1}{2}$	6 $\frac{1}{2}$	8 $\frac{1}{2}$	12

According to Lieut. Lewis' statement, the horse-powers in the above table should be increased 20 per cent.

fords less than one-sixth horse-power in a ten-mile wind, a barely usable amount, probably a little more than a stout man can do. The fourteen-foot mill does twice as much. The sixteen-foot mill gives almost half a horse-power. The twenty-five foot mill gives over two horse-power, and the thirty-five-foot mill gives nearly five horse-power.

Passing to the column for the sixteen-mile wind it will be well to examine it with some care, because this is about the wind velocity on which the general estimates of power of windmills is based. Fifteen and sixteen-mile winds are classed as brisk. They prevail during about eight of the twenty-four hours, on an average.

Table III. shows the number of hours the wind blew at each velocity, at Manhattan, from May, 1891, to May, 1895. It is a useful table to preserve for reference.

It is seen from tables I. and II. that the smaller mills give no measurable power at velocities below ten miles. The larger mills, however, give considerable power, even in an eight-mile wind. Prof. Hood has assumed that below six miles per hour the wind is useless. He has also assumed that mills had better be stopped for safety when the wind exceeds thirty miles per hour, and that these high winds are therefore useless.

Table IV. shows the percentage of the time in each month during which



TABLE IV.—Showing per cent. of each month during which a mill will be idle.

	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1891	...	...	...	...	2.47	2.71	4.34	3.68	2.81	3.52	2.63	2.32
1892	3.61	2.33	2.04	2.44	2.26	1.95	3.30	4.67	3.06	3.49	2.68	4.27
1893	3.60	2.60	3.04	2.28	2.63	2.67	2.15	4.23	3.04	2.45	3.32	2.17
1894	2.14	2.65	2.57	2.13	2.66	2.49	3.60	3.97	2.91	3.02	2.54	2.15
1895	4.00	2.61	1.71	2.38	...	...	...	...	...	...	...	...
average	3.37	2.62	2.35	2.31	2.30	2.56	3.35	4.14	2.75	3.12	2.64	2.73

which G = gallons, H = height in feet and P = horse-power required, we find that this mill, attached to proper pumping machinery, should pump  $1500 \times 5 = 7500$  foot gallons per minute,  $7500 \times 60 = 450,000$  foot gallons per hour and an average of  $450,000 \times 18 = 8,100,000$  gallons per day throughout the year. With a ten-foot lift it should average 801,000 gallons per day; with a twenty-foot lift 405,000 gallons; with a forty-foot lift 202,500 gallons. Now, since about 100,000 gallons should be used in irrigating an acre of land once, it appears that such a mill should pump on the average per day enough water to irrigate two acres where the lift is forty feet, four acres where the lift is twenty feet and eight acres where the lift is ten feet.

Consideration of the fact that the work will average less than half, and may drop to one-fourth of this in August, will necessarily lead to such planning of the use of water as shall avoid the necessity for large supplies during that month.

#### Irrigation in Pawnee County.

EDITOR KANSAS FARMER:—I have just returned from a visit to Mr. Frizell's irrigation plant, seven miles west from Larned, and was so favorably impressed that I write you so you can see what we are doing here in the irrigation line. I think Mr. Frizell has the best laid out, arranged and equipped plant in the State.

His farm contains eighty acres, all under fence. His reservoir—all sodded—which is located on the highest part of the field, is 130 feet in diameter and eight feet deep; has two fourteen-foot windmills, two ten-inch Frizell pumps, with a capacity of 300 gallons of water a minute, twenty-six-foot lift. He has thirty acres in alfalfa, which was just coming up and promised a good stand; twenty-five acres in apples, of which 800 trees were Ben Davis, all thrifty, growing trees; five acres in onions, looking well; five acres in Irish potatoes; five acres in sweet potatoes—just finished planting; and ten acres will be put in cabbage.

Whatever Mr. Frizell does he does right. This whole eighty acres was plowed, subsoiled, prepared and planted this year, and it looks like a garden spot, which indeed it is.

On my way back to town, I looked over Mr. Wm. Dumont's twenty-five acres of alfalfa, sown this spring, and he had a fine stand, eight inches high. His land, too, had been well prepared, plowed and subsoiled.

Two miles from town I passed Mr. Rahn's 100-acre field of alfalfa, which he was cutting, and what a beautiful sight it was—a part in cocks, a part on the ground, cut, the balance standing in full bloom. This field is three years old, has never been irrigated and has brought its owner handsome returns, both in hay and seed.

There are several splendid irrigation plants here, all put up this spring, belonging to Messrs. Kirk, Chas. Smith, Jake Heaton, Eli Goodwin, J. B. Brown and others, which I have not visited yet. In the near future I expect every farmer will have his plant and thus secure an abundance of fruits and vegetables, outside his wheat fields.

Oats and barley promise a big yield. Wheat is coming out, but won't make over one-third of a crop, the freezes in January having injured it. With windmills to irrigate ten to twenty

TABLE V.—Showing the probable power derived, expressed in horse-power hours, from a ten-foot mill, at each wind velocity in each month from May, 1891, to May, 1895.

WIND VELOCITY IN MILES PER HOUR	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
6	13.5	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
7	26.4	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18	2.18
8	36.0	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96
9	55.0	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75
10	72.0	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20	7.20
11	109.5	10.95	10.95	10.95	10.95	10.95	10.95	10.95	10.95	10.95	10.95	10.95
12	132.0	12.60	12.60	12.60	12.60	12.60	12.60	12.60	12.60	12.60	12.60	12.60
13	150.0	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
14	168.0	16.80	16.80	16.80	16.80	16.80	16.80	16.80	16.80	16.80	16.80	16.80
15	180.0	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
16	201.6	20.16	20.16	20.16	20.16	20.16	20.16	20.16	20.16	20.16	20.16	20.16
17	216.0	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60	21.60
18	237.6	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76	23.76
19	252.0	25.20	25.20	25.20	25.20	25.20	25.20	25.20	25.20	25.20	25.20	25.20
20	270.0	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00
21	288.0	28.80	28.80	28.80	28.80	28.80	28.80	28.80	28.80	28.80	28.80	28.80
22	302.4	30.24	30.24	30.24	30.24	30.24	30.24	30.24	30.24	30.24	30.24	30.24
23	324.0	32.40	32.40	32.40	32.40	32.40	32.40	32.40	32.40	32.40	32.40	32.40
24	342.0	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20
25	360.0	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00
26	378.0	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80	37.80
27	396.0	39.60	39.60	39.60	39.60	39.60	39.60	39.60	39.60	39.60	39.60	39.60
28	414.0	41.40	41.40	41.40	41.40	41.40	41.40	41.40	41.40	41.40	41.40	41.40
29	432.0	43.20	43.20	43.20	43.20	43.20	43.20	43.20	43.20	43.20	43.20	43.20
30	450.0	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00

acres, and subsoiling the balance of the lands, the future looks bright for this part of Kansas.

M. A. W. JORDAN.

The first of the several pumping plants established by the Kansas State

TABLE VI.—Showing the number of hours per day the wind would have to blow fifteen miles per hour to give the average monthly horse-power.

HOUS PER DAY	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1891	11.4	1.79	3.18	2.65	2.28	1.61	1.05	7.2	15.0	1.44	1.61	1.61
1892	21.27	3.01	5.14	4.22	2.91	1.95	1.35	2.71	3.71	4.21	...	...
1893	...	...	...	...	...	...	...	...	...	...	...	...
1894	...	...	...	...	...	...	...	...	...	...	...	...
1895	...	...	...	...	...	...	...	...	...	...	...	...
average	...	...	...	...	...	...	...	...	...	...	...	...

TABLE VII.

PER CENT OF POWER DERIVED FROM WIND	JULY	AUG.
1891	2.72	4.53
1892	3.71	3.31
1893	3.15	3.59
1894	4.02	6.81

Irrigation Board was completed and successfully started by Fairbanks, Morse & Co., Ira C. Hubbell Manager, Kansas City, Mo., on the 15th inst. This station is located at Goodland, Kas., and the entire work, including making of the reservoir, putting down of the well, designing and building of the pumping machinery was done

under the personal supervision of Mr. Hubbell, to whose abilities as an engineer we have had occasion to previously refer. In a subsequent issue we will show photographs of the machinery with full description of the pumping plant.

#### How's This!

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Props., Toledo, O. We, the undersigned, have known F. J. Cheney for the last fifteen years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligations made by their firm.

WEST & THURAY, Wholesale Druggists, Toledo, O. WARDING, KINNAN & MARVIN, Wholesale Druggists, Toledo, O.

Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price, 75 cents per bottle. Sold by all Druggists. Testimonials free.

#### Summer in the Alleghenies.

Tourist tickets to Cresson and Bedford Springs via St. Louis over Vandalia-Pennsylvania lines will be sold by connecting railways in West and Southwest during season commencing June 1. Through trains from St. Louis to Cresson over this short route to retreats in the Alleghenies. Bruner, 509 Chestnut street, St. Louis, for details.

#### Special Service to Cleveland.

The fast train on the Nickel Plate Road, leaving Chicago at 1:30 p. m., arriving Cleveland 11:30 p. m., is the best day train between Chicago and Cleveland. Give it a trial and be convinced. Uniformed colored porters in charge of day coaches. Lowest rates to all points. For further information address J. Y. Calahan, General Agent, 111 Adams St., Chicago.

#### Summer Tours.

You can get more for your money in the sure return of health and enjoyment at any of the many resorts on the Union Pacific System than anywhere else on this continent. See your nearest Union Pacific agent. Summer tour tickets on sale to September 30. F. A. Lewis, City Ticket Agent, Union Pacific System, 525 Kansas avenue, Topeka, Kas.

The Christian Endeavor Convention for 1895 will be held at Boston, Mass., in July, and the Nickel Plate Road has effected arrangements by which the lowest rates will be offered, either going or returning, by direct lines or returning by different routes. The following points of interest may be visited without extra charge: Chautauqua Lake, Niagara Falls, Thousand Islands, Rapids of the St. Lawrence, Saratoga, Palisades of the Hudson and the Hoosac Tunnel. For further information address J. Y. Calahan, General Agent, 111 Adams street, Chicago, Ill.

#### Reduced Rates to Baltimore.

On account of the meeting of the Baptist Young People's Union at Baltimore, July 18 to 21, the Baltimore & Ohio railroad company will place on sale at all ticket stations on its lines west of the Ohio river excursion tickets at one fare for the round trip. These tickets will be sold July 16 to 17, valid for return passage until August 5. The rate from Chicago will be \$17.50 and proportionately low rates from other points. Tickets will also be placed on sale at all coupon offices west of Chicago.

Whatever point you start from be sure your ticket reads via B. & O. In addition to the historic country through which the B. & O. runs, the B. & O. is the only line from Chicago to Baltimore running via Washington, a double daily service of fast express trains run between the West and East.

For full particulars address L. S. Allen, A. G. P. A., Grand Central Station, Chicago.

#### CASTINGS. MODELS.

## MACHINE WORK.

TOPEKA FOUNDRY, Cor. Jackson and Second Sts., TOPEKA, KAS.

## DRAIN TILE

W. S. DICKEY CLAY MFG. CO., 20th and Main Sts., Kansas City, Mo.

## IRRIGATION.

**WEBER GASOLINE ENGINE** For use in any place or for any purpose requiring power. Only a few minutes' attention required. The simplest, most economical and best power. Send for circular. Address Weber Gas & Gasoline Engine Co., 459 Southwest Boulevard, Kansas City, Mo.





## The Home Circle.

### To Correspondents.

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

### SAD EXPERIENCE.

The following beautiful lines were written by the late Richard Siles, Esq., of Danville, Va., a gentleman of genius, a fine scholar and a lawyer of distinction. The lines speak of the sad experience and fate of the author:

I have been to the funeral of all my hopes  
And entombed them one by one;  
Not a word was said,  
Not a tear was shed,  
When the mournful task was done.

Slowly and sadly I turned me round  
And sought my silent room;  
And there alone  
By the cold hearthstone  
I wooed the midnight gloom.

And as the night wind's deepening shade  
Lowered above my brow  
I wept o'er days  
When manhood's rays  
Were brighter far than now.

The dying embers on the hearth  
Gave out their flickering light,  
As if to say  
This is the way  
Thy life shall close in night.

I wept aloud in anguish sore  
O'er the blight of prospects fair;  
While demons laughed  
And eagerly quaffed  
My tears like nectar rare.

Through hell's red halls an echo rang,  
An echo long and loud,  
As in the bowl  
I plunged my soul  
In the night of madness strong.

And there within that sparkling glass  
I knew the cause to lie.  
This all men own,  
From zone to zone,  
Yet millions drink and die.

### JAPANESE ART.

Abstract of graduating thesis of Cora Idella Stump, of Manhattan, at Agricultural college commencement, 1895.

The Japanese art, in all probability, originated from the Chinese art. We should scarcely expect anything different. Japan is young in comparison with its neighboring country, China, which has stood as a nation of artists almost since the beginning of history, but it must be understood that art was greatly modified in passing from nation to nation.

The origin of the Japanese art dates back as far as the sixth century, and in its infancy it was not without its many influences. The Grecian and Roman art, just then in their maturity, eastern Asia (China), all influenced, but it is the Japanese side of the Japanese art that people admire, and not a foolish combination of the stern Greek with the oriental. The artistic beauty of this art lies not in their drawings, but the harmonious color effect is paramount, and its beauty obscures the incongruities of composition. The Japanese are not only masters of the clay for pottery, marble for monuments, paper for dresses, but other materials, such as bronze, gold, silver, porcelain, china, lacquer, paint, bamboo and paper. In metal, the patriarchy never tire of making the sword an article of the highest artistic value. One might wonder why a nation christened the "Land of great peace," should be interested in such a production. Little did they think that their labor and their skill would soon be needed for the war of conquest against their neighbor, China. Of all the materials known, paper has probably the most extensive use, from the walls of their frail dwellings down to their umbrellas, fans and handkerchiefs. And every American recognizes the bright-colored flowers, the flying birds, the long, oval face, the bud-like little mouth and the inexpressive nose with which the artist endows the female face divine. These insipid beauties simmer at us from the multitudinous fans that agitate the air of the republic, from Boston to San Francisco.

Many and rich are the subjects Japan offers to its artists. In all we find a deep love and admiration for nature, a real fondness for the picturesque, and the artist seems to have solved the mystery of the colors, and caught the grace and life of the animal and vegetable nature. We find some charming glimpses of common life, animal fun and floral grace. The picturesque coast scenery, the mountains, the frequent visitors—volcanoes, earthquakes and typhoons—all have an extensive use; but mythology, like that in Greece, furnishes the national soil for their art, whether expressed in bronze, porcelain, colors, poetry, song, dance, pantomime or romance.

We admire Japanese art wares, some for their originality and simplicity, some for their quaint form, some for their beautiful and intricate patterns, others for the portrayal and description of nature, the country, habits and dress of a people so unlike our own.

In the past the world owes much to the

artists of Japan, and it looks forward to a still brighter future, for has Japan not witnessed arts rise in renown, decay and pass away, while she kept on apace and is still advancing. May that nation ever contribute its share of industrial training and accomplishment, to make a more highly developed civilization throughout the entire world.

### How to Teach Geography.

Abstract of graduating thesis of Alice Quintard, of Silver Lake, at Agricultural college commencement, 1895.

We can give only the briefest sketch or outline in our allotted time, but we hope we may be able to offer a few suggestions that will be of some use to those who are expecting to become teachers.

In the first place, we would throw away the primary geography and teach the children orally. The lessons may be illustrated by pictures on the board and nicely by stereoscopic views. For instance, wouldn't a good view of a moraine or of Niagara falls give a much clearer idea than any description from a book?

To very small children may be given a box of clean sand in which to draw their first maps. You can show them how to make the mountains, hills, valleys and rivers and to lay out streets, and maybe the school yard.

Do not compel the child to learn the population of a hundred or more cities. It is far more important to know why a city is populous than to know its population; to know why a river is long than to know its length; to know why one part of the country is devoted to mining and manufacturing, while another is devoted to agriculture and stock-raising. A child always wants to know the whys and wherefores, and it is one of the greatest aids in developing reasoning powers.

In teaching of the animals of a country, a museum is a very excellent thing, indeed, but unfortunately hard to get. Much interest is added if the teacher knows some of the habits of the animals, for what child does not like to hear a "bear story?"

We shall see that the study of geography involves a study of almost everything else, whether of literature, of science or of art.

The training of a child's imaginative and observing powers is of the first importance and may be nicely accomplished by taking imaginary journeys. Suppose we have a class in an imaginary journey. We are on the hills and notice that the waters flow in different directions. We call attention to the divide; to the spring as the source of the river; its issuing from the side-hill, hence the underground stream. We follow its course and notice that it is constantly increased by tributaries. We see also that the soil is being worn away and carried down stream, and we explain erosion and deposit.

As the child gets older, we would have him take up the text-book, with history in direct connection, also books of travel. If he were studying Africa, we would have him read, parts at least, of Stanley's life there.

You say that all this takes up a great deal of time, and so it does, but we would have geography taught in some form or other from the time the child first enters school until he graduates at college.

### A Chance to Make Money.

It seems strange that people will not improve their opportunities; they all want to get rich, but have not enough enterprise to succeed. I believe any man or woman can clear \$10 a day in the dish-washer business, as it is just booming now; but not one in 500 has push enough to enter the field and reap the harvest. I have been in the business over a year, and have cleared over \$20 every day, without canvassing any. I have examined all the dish-washers, but none equal the Climax. Address the Climax Manufacturing Co., Columbus, O., and they will tell you how to proceed, and you can do well in city or country, as every family wants a Climax dish-washer. When we know of opportunities like this, I think it our duty to inform others, as this is a chance for all to make money honestly and easily.

A READER.

### A Mistake Some Mothers Make.

It is a common excuse with over-indulgent mothers for omitting to correct even glaring improprieties of feeling or of conduct that the child is "too young to listen to reason" and that it will be time enough to check such aberrations afterward. This is a great mistake. In infancy we are governed not by reason, but by the well-directed affection and kindness of our guardians; and to wait till the development of a child's understanding before we commence its moral training is to wait till years of unregulated indulgence shall have strengthened its more selfish and powerful appetites and passions—to wait, in short, till the weed has ripened and shed its seed, before attempting to extirpate it from the soil.—Dr. Combe.

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

# Royal Baking Powder

## ABSOLUTELY PURE

### QUEEN VICTORIA'S BED.

It is Not as Pretentious as the Couches of Some American Women.

Queen Victoria is said to be very particular about her bed, but her bedroom is a very simple, unpretentious one. The heavy bed, with its canopied top and curtains for keeping all draughts from the royal sleeper, several chairs, a thick warm rug, a great table of carved mahogany, some good pictures, including a portrait of Prince Albert, complete the apartment in Buckingham palace in which her majesty slumbers. Nothing to compare with the bedchambers of many American women. Lillian Russell, for instance, queen of comic opera, rejoices in one apartment which suggests a great pearly pink seashell. Her little single bed is of brass, but inlaid and covered with mother-of-pearl. The draperies are of white silk bolting cloth, painted in morning-glories and lined with palest pink satin. Soft white lace over pink satin forms the covering for the bed and for the hard, round bolster, and falls on both sides almost to the white velvet carpet. The dressing-table is of pink enamel inlaid with wreaths and cupids of mother-of-pearl. The oval-shaped mirror is framed in a wreath of porcelain morning-glories. The hand mirrors, brushes and toilet belongings are of mother-of-pearl, set with jeweled monograms.

The crowning glory of Mrs. Van Rensselaer Cruger's (Julian Gordon) room is the bed, which is a representation of a swan. Each feather is exquisitely carved in white enameled wood. A canopy of white silk falls from the tall, slender neck. The coverlid and pillows are of white satin ruffled with filmy lace. Walls, carpets and hangings of this exquisite room are of dull pink. The dressing-table, with its quaint chair, the framing of the tall cheval glass and the carved woodwork of the colonial mantel-piece are of glistening white enameled wood. A few choice water-colors and some bits of rose-flecked china gave a home-like look to the room.

Mrs. Burton Harrison, another woman who is at once a social and a literary queen, has her bedroom furnished with



THE GREAT WHITE SWAN BED.

the old mahogany furniture in which her great-grandmother delighted. The roomy old bed would make two of any modern creation, and the four tall carved posts reach almost to the ceiling. By the bed stand carved steps, which used to be necessary to success in reaching the soft embraces of the feather bed. A tall chest of drawers surmounted by a small looking-glass, some quaint old spindle-back chairs and pictures a hundred years old and more complete this quaint room.

Over Mrs. Frank Leslie's single brass bedstead hangs a crucifix of ivory which is a work of art in its matchless carving. A rug of soft silky Persian weave covers the floor of the tiny apartment, and a single chair completes the furnishings. The toilet-table and all of its belongings are in the little dressing-room which opens off from the bedroom proper. On certain anniversaries

the dainty brass bed presents a somber appearance, for it is draped in black; the sheets, down coverlids and pillows are all covered with silk of inky blackness.—Chicago Evening Post.

### A Cat with Two Wings.

An extraordinary creature is reported from Reach, Cambridgeshire. A French or Persian cat, the property of David Badcock, a publican, residing in the village, has recently been found to possess two wings, resembling those of a duckling. The phenomenon was not suspected, owing to its long hair, until being roughly handled it spread out its wings. It is about twelve months old.

By using Hall's Hair Renewer, gray, faded or discolored hair assumes the natural color of youth and grows luxuriant and strong, pleasing everybody.

### Homes for the Homeless.

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

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

### From St. Louis to the Seashore.

Shortest route is Vandalia-Pennsylvania lines. Atlantic City, Cape May, Long Branch and summer havens on New Jersey coast reached through Philadelphia; Newport, Narragansett Pier, Martha's Vineyard, Nantucket and resorts in the Cape Cod district through New York. Daily trains from St. Louis to Philadelphia and New York without change. Write to 509 Chestnut street, St. Louis, for details. Address Brunner.

### That Trip East

May be for business or pleasure, or both; but pleasure comes by making a business of traveling East over the Santa Fe Route as far as Chicago.

Thirty miles the shortest line between Missouri river and Chicago; that means quick time and sure connections.

Track is straight, rock-ballasted, with very few crossings at grade.

No prettier, cozier, or more comfortable trains enter Chicago than those over the Santa Fe. They are vestibuled limited expresses, with latest pattern Pullmans and free chair cars. Meals in dining cars served on plan of paying for what is ordered.

Inquire of nearest agent, or address G. T. Nicholson, G. P. A. Santa Fe Route Monadnock building, Chicago, or W. J. Black, A. G. P. A., Topeka, Kas.



"Could I have another Glass of that  
**HIRES' Rootbeer**

Give the children as much Hires' Rootbeer as they want. Take as much as you want, yourself. There's no harm in it—nothing but good.

A 25 cent package makes 5 gallons.  
The Chas. E. Hires Co., Philada.

THOS. B. SHILLINGLAW, Real Estate and Rental Agency, 115 East Fifth St., Topeka, Kas. Established in 1884. Calls and correspondence invited.



## The Young Folks.

### YER MITHER!

Wha had the bringin' o' ye up,  
An' geid ye bosie, bite an' sup,  
Aye cuddl'd ye sse coosie up?  
Yer mither!

Wha wrap't ye in her warm bed-clas,  
An' tucked a' in your han's an' taes,  
Croon'd ye to sleep wi' "Banks and Braces?"  
Yer mither!

Wha made your first wee pair o' breeks,  
That "sprang a leak" in twa-three weeks,  
Then patched them up wi' clouts an' steeks?  
Yer mither!

Wha helped ye wi' yer A, B, C,  
An' count the clock twal, ane, twa, three,  
Hen "piece an' sugar" wade ye gie?  
Yer mither!

On Sabbath—wha hid bools an' ba's,  
An' wash'd yer hakit feet an' claws,  
Then gart ye learn God's holy laws?  
Yer mither!

Wha took ye wi' her t' th' kirk,  
An' tauld ye no t' sleep or smirk,  
But "min' the text"—nae heeds to shirk?  
Yer mither!

An' whan ye grew to be a man,  
Wha lik'd to hear ye lay yer plan,  
To learn a trade—dae what ye can?  
Yer mither!

An' whan her time cam' roon' to dee,  
Wha bade ye dry yer tearfu' e'e,  
An' meet her yont life's stormy sea?  
Yer mither!

Wha pray'd that you'd be guid an' great,  
An' no lose grup o' heaven's estate—  
Wha'll meet ye first at heaven's gate?  
Yer mither! —John Imrie.

### PUSSY IS AMBITIOUS.

She Wants to Sing with Operatic Stars in a New York Hall.

There is a cat in Carnegie hall that is rapidly becoming famous because of its stage performances. Whenever a concert is given in the hall that cat is certain to turn up at the most interesting part of the entertainment and walk demurely out to the center of the stage and sing.

Of course, the audience, as a general thing, is amused, but the singers are thrown into confusion. As the cat refuses to be coaxed from the stage it is necessary for some one to walk out from the wings and interrupt the performance in order to get the cat out. If pussy takes a notion to remain on the stage, and she usually does, she tries to escape, and then there is sure to be a lively and diverting chase after her.

But pussy is an intelligent cat, and when she heard the men and women on the stage receive tremendous ovations



PROCEEDING TO THE FOOTLIGHTS.

and applause from the audience, she thought to herself that if they could win cheers and hand-clappings, a cat could too. So she made up her mind to try an experiment. But she did not tell anybody. One night, when there was a fashionable concert in the hall, and several beautiful women and handsome men were taking part in the entertainment, pussy surprised everybody by appearing suddenly in a side entrance and proceeding leisurely to the footlights, where she set up a most unmusical "meowing." The audience at first began to smile, then to laugh.

The singers seemed amused, but, as they were not supposed to laugh at all, they had a hard time to keep from smiling. The tenor stopped short on a high note, the soprano hid her face behind her music score, and the basso looked with profundo displeasure upon the intruder. But pussy did not move. She knew her rights, and was determined to assert them. How to get her off the stage without creating a ridiculous scene, was the problem that vexed the singers. The stage manager was appealed to, and he saw that there was only one way to do it. He wore a

swallowtail coat, and he had a clean, white shirt bosom in which a beautiful diamond sparkled. His hair was greased to perfection, and his mustaches were waxed so that they stuck out at each side of his face. He took a mahogany cane and walked boldly out upon the stage to catch the cat.

Pussy saw him coming, but waited for the cane to get near her. Then she darted to the rear of the stage, between the exits. A recess was taken by the singers, and all eyes were fastened upon the handsome stage manager and the agile cat. The cat had the advantage.

"Here, pussy, pussy!" cooed the stage manager, but pussy would not obey him. He approached her and made a sudden dive for her, but she bounded lightly over his shoulder and was in another part of the stage. The manager reddened, the singers laughed audibly, but the audience roared. Pussy was mightily pleased with her first efforts to entertain. She had made a hit and she knew it.

It became necessary then to abandon all attempts to appear dignified, and the stage manager and the male singers made a united attack upon poor pussy, who, surrounded by a superior force, had to surrender. She was carried triumphantly off the stage to the cellar, where she was locked up, and the concert was resumed.

Since that eventful night of her debut pussy has managed to escape from the cellar and appear unexpectedly in other performances. Her ambition to shine as a star, however, is not appreciated, and the stage manager says that if she repeats her offense many more times he will drown her in an unsympathetic tub of water. —N. Y. Recorder.

### THOUGHTFUL OLD ROSY.

How an Affectionate Family Horse Comforted Its Little Master.

Perhaps a good deal of the Listener's personal love for horses is traceable back to a single incident of his early childhood. At the age of six he once mounted Old Rosy (the term "old" at that time was merely one of endearment, for the mare was not as old as the boy), to ride to a neighbor's. The mare was fat and sleek, and so was the boy; her back was so round that her spine was a little hollow instead of a projection. On this glossy round back was no saddle, not even a blanket; the fat little boy's short legs simply stuck out into the air on either side. The greater part of the journey had been achieved, and the boy and mare were returning homeward, when in going down a slope, Rosy inadvertently began to trot and the boy, having no kind of anchorage, began to slide forward upon the mare's neck. Upon that he let go the bridle, hugged the neck, and screamed. Not knowing quite what this performance meant, Rosy continued to trot placidly down the hill, and the boy continued to slide. Doubtless she thought it was some new kind of boy's play. At last he slid clear over her head and rolled upon the ground. The mare must have eased the fall for him by ducking her neck slowly, and she certainly kept her feet entirely clear of him. He simply rolled into the ditch by the side of the road, quite unhurt, boo-hooing lustily.

And then comes the pretty part of the story. The young mare did not go on ten steps after the small boy rolled off her neck, but stopped, turned back, came down to the screaming child, nosed him affectionately, and, as he will swear to his dying day, comforted him as best she could. She showed him that the bridle reins were hanging down within his reach. Under such an influence the boy of six—which is an age, it is scarcely needful to say, when few Boston boys are intrusted with the management of a horse—stopped weeping, got up, took hold of the bridle, and reflectingly led the mare home. —Boston Transcript.

### Mice Run a Spinning Wheel.

In a little shoemaker's shop in Third avenue, New York, there is on exhibition in the window a miniature thread-spinning machine run by two trained mice in a sort of treadmill apparatus. The proprietor of the store, who is an ingenious German of an inventive turn of mind, planned and invented the machine himself, and as it was built on a small scale to fit the space available it could not be operated by steam power, so he conceived the

idea of training the mice, and having them do the work. The little register fastened on one side of the machine shows that the mice daily perform work equivalent to traveling ten and a half miles.

### FOUR-FOOTED BIRDS.

Frowsy, Long-Eared Fellows Who Give Nocturnal Concerts.

The "Colorado canary" is a frowsy little, long-eared fellow that has far more sense than he gets credit for. Like the nightingale he sings in the night, his note being a mixture of a long, hollow cough and a squeal. There is a great deal of noise and earnestness, but not much music in his song, certainly not enough to warrant taking him into the parlor. Nobody knows whether he sings for fun, for grub or for pastime. Like the poet, he is saddest when he sings, and so is everybody



COLORADO CANARIES.

else. If his bulk, says the Traveler, could be measured by his notes he would weigh as much as an elephant; but if his music could be measured he wouldn't be bigger than a hummingbird. He is gentle except in his hind legs, which sometimes have a faculty of suddenly rearing up and kicking things. This is his only means of protection, but it is very effective and telling, and no one ever knows when or where he will strike. It is always safest to stand in front of him unless you are behind a stone fence.

### Really Remarkable Discovery.

Nature has a beautiful habit of adapting herself to difficulties and weakness, whenever that is possible. If she is choked and hindered in one direction, she tries to become more vigorous in another. An English author says that a man of middle age, with whom he is acquainted, found one of his eyes affected, as he thought, by reading small print at night, and applied to a famous oculist for advice. The doctor examined him very carefully, and presently inquired whether he had ever suffered any inconvenience from the other eye, the right one.

"None whatever," was the reply. "Still," said the oculist, dryly, "it is very important for you to preserve the sight of your left eye, inasmuch as you have never seen with the other since you were born!"

### A Cow's Peculiar Devotion.

Down in Georgia lives a very peculiar black cow. She is very much at-

## Money in

Vacuum Leather Oil for your harness and shoes. Get a can at a harness- or shoe-store, 25c a half-pint to \$1.25 a gallon; book "How to Take Care of Leather," and swob, both free; use enough to find out; if you don't like it, take the can back and get the whole of your money.

Sold only in cans, to make sure of fair dealing everywhere—handy cans. Best oil for farm machinery also. If you can't find it, write to

VACUUM OIL COMPANY, Rochester, N. Y.

tached to her master's children—so much so that she is never willingly separated from them. If the children are at home, the cow will stay in a pasture with a fence three feet high; but if they go away the cow will throw down even high fences to follow them. At different times when the cow would be in the pasture the farmer has slipped the children away from home, but when she missed them she would get out and track them as a dog would do until she found them, and then follow wherever they went.

## You will ride a Bicycle

Of course you will ride. All the world will—fashion, pleasure, business—men, women, children. It takes a while sometimes for the world to recognize its privileges; but when it does it adapts itself promptly. Therefore, you who are in the world will ride a bicycle—a



### COLUMBIA

bicycle if you desire the best the world produces; a Hartford, the next best, if anything short of a Columbia will content you. Columbias, \$100; Hartfords, \$80 \$60; for boys and girls, \$50.

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A Catalogue—comprehensive, beautiful—at any agency free, or by mail for two 2-cent stamps. The book tells of all the new Columbias and Hartfords

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## A Family Liniment.

January 10th, 1895.

The Dr. J. H. McLean Med. Co.,  
St. Louis, Mo.

Gentlemen: I am a firm believer in Dr. J. H. McLean's valuable medicines; have used several kinds of them with the most satisfactory results. Within the last few years,

I have used more than twenty bottles of Volcanic Oil Liniment in my family and on my farm animals. I want no other, as it does its work promptly and thoroughly.

Yours truly,

W. J. VANCE  
FLIPPIN, MONROE CO., KY.



# KANSAS FARMER.

ESTABLISHED IN 1863.

Published every Wednesday by the  
**KANSAS FARMER COMPANY.**

OFFICE:  
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SUBSCRIPTION PRICE: ONE DOLLAR A YEAR.

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

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Display advertising, 15 cents per line, agate, (fourteen lines to the inch).  
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Business cards or miscellaneous advertisements will be received from reliable advertisers at the rate of \$5.00 per line for one year.

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

Electros must have metal base.  
Objectionable advertisements or orders from unreliable advertisers, when such is known to be the case, will not be accepted at any price.

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

All advertising intended for the current week should reach this office not later than Monday.

Every advertiser will receive a copy of the paper free during the publication of the advertisement.

Address all orders—  
**KANSAS FARMER CO., Topeka, Kas.**

In northeastern Ohio the season is represented to be the worst for farmers since 1845—the worst in a half century.

The *KANSAS FARMER* has inquiries as to fish hatcheries. Those who wish to reach this trade will do well to insert a small "ad" in our "Two-cent column."

The "bears" have continued their assaults on the wheat market. The country "lams" have little chance for anything but loss in competition with the "talent" of the bears.

The Shawnee County Horticultural Society will hold its regular monthly meeting and basket picnic to-morrow (Thursday, June 27,) at the farm of W. P. Popenoe, near Berryton. The Missouri Pacific train leaves Topeka for Berryton at 10 a. m., returning leaves Berryton for Topeka at 4:30 p. m.

It is estimated by the Cincinnati *Price Current* that the exports of wheat (including flour) from the United States for the year now ending will reach 145,000,000 bushels, or slightly more. The largest exportation was in 1891-92, 225,000,000 bushels. The yearly average for ten years past is 140,000,000, and the outlook as to the exportable surplus for the coming year suggests a quantity only equaling about half the yearly average of such distribution of wheat the past ten years.

We begin, this week, the publication of the brief addresses delivered by members of the class of 1895 at Kansas State Agricultural college. Most of these are but brief abstracts of more extended papers prepared by these graduates and deposited in the college library. They are on a great variety of subjects and are a fair index to the development attained by these young people during their course at the college. A few of the class have not yet sent in their manuscripts, but it is hoped that this will be attended to at an early date, so that the entire fifty-seven addresses may appear in these columns.

The cheering news comes from Chicago that the 8,000 employees of the Chicago Steel and Iron Co. are to be treated to an advance of 10 per cent. in wages, to go into effect July 1. The remarkable part of this is that the advance is made in face of the extremely low prices of iron and steel. It will be remembered that several weeks ago the Carnegie steel company made a similar advance in wages. The reason then assigned was that the improved appliances adopted had so reduced the cost of production that the advance in wages would still leave a margin of profit to the company. Doubtless improvements have also been introduced at Chicago, and it is to be hoped that while the era of cheap iron will continue the era of better compensation for labor may also be dawning.

## CROP REPORT OF KANSAS DEPARTMENT OF AGRICULTURE.

F. D. Coburn, Secretary of the Kansas Board of Agriculture, issued a report, June 21, on the State's present crop conditions, deduced from observations made by its regular correspondents in practically every township in the State, and the showing is in many respects one of marvelous improvement and fabulous prospects, as compared with the report made May 1.

### WINTER WHEAT.

Previous estimates indicated the area sown to winter wheat as 4,064,137 acres, and May 1 it was believed 53 per cent. of this would be harvested; present estimates are that about 37 per cent., or 1,496,791 acres, will be cut, and the average yield 8.24 bushels per acre, or a total of 12,332,333 bushels. In the northern half of the State, where harvesting is now at its height, the quality of the grain has been much improved by the frequent June rains, but in the southern half the crop was mostly ripened before the rains. Notwithstanding the adverse conditions and resulting small yields per acre, correspondents in reply to the direct question as to whether the quality of the berry is "good," "medium" or "poor" have answered "good" or "medium" in a large majority of instances from every county except five, from which they report "poor." The counties having the largest aggregate of wheat—from 301,000 to 585,000 bushels each—are McPherson, Labette, Sumner, Ellis, Sedgwick, Rice, Montgomery, Marion, Harvey, Dickinson, Cherokee, Ness and Brown, respectively. The largest average yield per acre for a county is fifteen bushels, in Wyandotte. Allen, Coffey, Doniphan and Phillips report thirteen bushels each, and thirty-three counties an average yield of ten bushels or more.

### SPRING WHEAT.

Of spring wheat 65 per cent. of the acreage will be harvested, or about 86,000 acres. The yield is set down at 773,000 bushels, or an average of nine bushels per acre for the thirty-two counties in which it is reported growing. The highest average, sixteen bushels, is figured from Phillips county; nineteen counties report a probable average of ten bushels or more per acre, and indications of the quality are "medium" or "good." There is but a single exception as to the quality.

### CORN.

It is corn, the crop overshadowing in acreage, value and importance any other which Kansas produces, where-with the State now promises to exceed by far the best of its wonderful previous yield records. The area now reported planted is 8,410,948 acres, or an increase of almost 10 per cent. of the estimate May 1, and also an increase of 1,417,741 acres, or more than 20 per cent. over the largest ever before planted, which was 6,993,207 acres in 1888. The surpassing year of corn production in Kansas was 1889, when the output aggregated 273,888,321 bushels from an average 40.15 bushels per acre. An equal average for the present year and acreage should give nearly 64,000,000 bushels more, or a total of 338,000,000 bushels. There is nothing in present conditions to suggest this as any improbability. The early part of the season having been so favorable for the work weeds were kept in thorough subjection, and when the abundant rains began, May 30, the ground was in admirable tilth for generously responding to other conditions which have since continued to be well-nigh perfect. Rains have been greatly abundant in every county during June, and the weather such that there has been no baking of the ground or forming of hard crusts, and cultivation is going steadily on, except in the more southern fields, where the growth is already too large for it. From counties where corn is most largely produced correspondents sum up the situation as "best at this time of year in the State's history."

### OATS.

The rains have worked a very notable change in the condition of oats, causing them to head and fill much better than seemed possible May 1, although most of the straw will be un-

usually short. The yield promises to be not less than twenty-five bushels per acre, or a total of 32,000,000 bushels of "medium" to "very good" grain—the largest output since 1892. Chinch bugs have been more or less numerous and industrious in Atchison, Chautauqua, Cherokee, Crawford, Franklin, Labette, Montgomery, Sumner, Wabunsee and Woodson, but recent rains must inevitably check their injurious work and also strengthen plant growth to better withstand their assaults.

### RYE.

Rye was sown on 166,540 acres, of which 51 per cent., or 84,935 acres, will be harvested and yield ten bushels per acre. Quality "medium" to "good."

### BARLEY.

There is 124,000 acres of barley growing, or 11 per cent. more than in 1894. Present condition compared with 100 as a full average is 76.

### POTATOES.

Irish potatoes have an acreage of 123,750, which is an increase of 23 per cent., or 23,140 acres over last year. This, excepting that of 1888 (126,185 acres), is the largest area ever given to potatoes in Kansas. The increase over their former acreage is quite uniform in nearly all of the counties instead of being confined to any particular part of the State. The condition averages 90 for the entire acreage.

### KAFFIR AND JERUSALEM CORN AND SORGHUM.

The acreage in these sorghums, saccharine and non-saccharine, for forage and grain is 484,000 acres, or greater by 40 per cent. than in 1894, and indicates an increase of 15 per cent. on the estimates made May 1. Present condition 95.

### MILLET AND HUNGARIAN.

The acreage in millet and hungarian is 374,485 acres, or 51,332 acres more than one year ago, an increase of nearly 16 per cent. Present condition 90.

### CASTOR BEANS.

The area at present in castor beans is 3,600 acres—23 per cent. or 1,076 acres less than one year ago. Condition 87.

### BROOMCORN.

Total acreage 110,832; increase over last year 31 per cent., or 24,000 acres. Present condition 91.

### FLAX.

Acreage 139,020, as against 127,542 in 1894. Increase 9 per cent. Condition 80.

### GRASSES AND PASTURE.

All grasses and pastures had suffered severely prior to June, and were distressingly short, but the rains have worked such a transformation that the condition of tame grasses and clovers is given as 68; prairie grass 84, and alfalfa 88, with rapid improvement going on, as the ground is thoroughly wet, while the streams, so many of which were either dry or very low, are now abundantly supplied with water.

### FRUIT AND HORTICULTURE.

Taking the State as a whole, its fruit and garden prospects are most flattering for bountiful yields, and it is doubtful if our trees and vines were ever before so laden. Conditions average 75 for apples, peaches, grapes and cherries, and in many counties apples and peaches rate at 100 and above.

Surviving the debility and depression common in late years to all sister States and all countries, Kansas now seems agriculturally and financially convalescent, and in her old-time form is again headed for prosperity and the stars.

The statistician, Edward Atkinson, has presented some interesting facts as to the cost of our government for the last fifteen years. In 1880, the revenues per head were \$6.825 and the expenses \$5.298. This included the revenues from all sources and the expenditures for pensions, interest on the public debt and all the ordinary expenses of the government. In 1883 the revenues amounted to \$7.587 per capita and the expenses to \$4.916. In 1890 the figures were, respectively, \$6.577 and \$4.749. In 1894 the balance appeared on the wrong side, the revenues being \$4.455 per capita and the expenses \$5.346.

If you want one of the finest magazines published, send us \$2.25 for *KANSAS FARMER* and *Cosmopolitan*.

## TWO REMARKABLE PAPERS.

Perhaps the ablest contribution yet made, to the discussion of the money question, is an address recently delivered in Atchison by Chief Justice Martin of the Kansas Supreme court. It is the careful reasoning of a jurist, historically accurate and strictly candid and honest in its presentation of the most important question now before the people. Plainly presented, it enables the reader to account for social and economic phenomena about which there has been much mystification. The address is no new departure for Judge Martin, but is more complete than any of his former contributions to the elucidation of the money question. It was published in full in the *Hutchinson News* last week. No attempt has been made to answer it and it is likely to be treated as unanswerable and therefore to be ignored.

Another remarkable production in the same line is the letter of ex-Governor S. J. Crawford, of Topeka, to the Chairman of the Republican National committee. In his forcible style the ex-Governor warns his party that to avoid annihilation it must unequivocally take the side of the people in the present contest with the money kings.

## GRANGE LECTURES.

Hon. A. P. Reardon, Master of the Kansas State Grange, has made arrangements with Hon. J. H. Brigham, Master of the National Grange, for a series of lectures in this State. The appointments will commence at a picnic at Cubberley's grove, July 4, in Shawnee county, under the management of the Grange in the county. This will be followed by lectures at Richland and Berry Creek Granges, in Shawnee county, July 5; Oak Grange, same county, July 6; Madison Grange, Greenwood county, July 8; Willow Valley Grange, same county, July 9; Finney, Woodson county, July 10; Lone Elm, Anderson county, July 11; Cadmus, Linn county, July 12; Wea Grange hall, Miami county, July 13; Spring Hill, Johnson county, July 15; Gardner, same county, July 15, at night; Edgerton, same county, July 16; Overbrook, Osage county, at their annual picnic and celebration on July 17; Manhattan, Riley county, July 18, and Okaloosa or McLouth in Jefferson county, July 19. The foregoing are the dates and places as now arranged, but are subject to change. It is desired that the membership in each of the localities named use their efforts to secure large audiences.

## STATISTICS OF RAILWAYS OF THE UNITED STATES FOR THE YEAR ENDING JUNE 30, 1894.

The Seventh Statistical Report of the Inter-State Commerce Commission, prepared by its statistician, being the complete report for the above named period, for which a preliminary income account was issued in December, 1894, has just been submitted, of which the following is an abstract:

The total railway mileage in the United States on June 30, 1894, was 178,708.55, an increase during the year of 2,247.48 miles. The increase during the previous year was 4,897.55 miles. The percentage of increase in 1894 was less than for any preceding year for which reports have been made to the Commission, and it is not probable that the year ending June 30, 1895, will show much improvement. The State of Pennsylvania shows an increase of 300.20 miles; Florida, 234.82 miles; North Dakota, 195.54 miles; Ohio, 184.02 miles; Georgia, 162.71 miles; Maine, 125.60 miles; Missouri, 120.51 miles; West Virginia, 117.56 miles, and Minnesota, 116.49 miles. The States of Kansas, Maryland, Massachusetts, Nevada, New Hampshire, North Carolina, Vermont, Virginia and the Territory of Arizona, show slight decreases in mileage, due to remeasurements and abandonment of lines, aggregating 153.72 miles. The number of roads abandoned was sixteen. The total mileage of all tracks was 233,533.67 miles, which includes 10,499.30 miles of second track; 953.16 miles of third track; 710.99 miles of fourth track, and 42,661.67 miles of yard track and sidings.

On June 30, 1894, the total number of



locomotives was 35,492, an increase during the year of 704. Of these, 9,893 were passenger locomotives; 20,000 were freight locomotives; 5,086 were switching locomotives, and 513 were unclassified. The total number of cars reported was 1,278,078. Of these, 33,018 were in passenger service; 1,205,169 were in freight service, and 39,891 were caboose, derrick, gravel, officers', pay and other cars in the companies' service. These figures do not include cars owned by shippers or private individuals. The increase in the number of cars during the year was 4,132, as against an increase of 58,854 during the previous year. This falling off in the ratio of increase is due to the fact that the railways have, during the year, destroyed a large number of old, worn-out cars. The number of passengers carried per passenger locomotive was 62,639, and the passenger miles per passenger locomotive were 1,444,400. The number of tons carried per freight locomotive was 31,909, and the ton miles per freight locomotive were 4,016,755.

The total number of employees on June 30, 1894, was 779,608, a decrease, as compared with the number on June 30, 1893, of 93,994, or 10.76 per cent. This is a smaller number employed than in any year since 1890. This decrease is, of course, due to the heavy falling off in traffic and the endeavor of the railways to economize. On the basis of four persons being dependent on each wage-earner, it shows that over one-third of a million of people have been deprived of their regular means of support. The class of employees showing the greatest decrease are trackmen, the decrease for this class being 29,443, or 16.34 per cent.; the next largest decrease is 19,890, or 18.91 per cent., for laborers and other unclassified employees. The decrease in employees assigned to general administration was 3,635, or 10.27 per cent.; in employees assigned to maintenance of way and structures 40,841, or 15.94 per cent.; in employees assigned to maintenance of equipment 23,490, or 13.38 per cent.; and in employees assigned to conducting transportation 32,023, or 8.05 per cent. A new feature in this report is a table giving a comparative statement of the average daily compensation of the various classes of railway employees for 1892, 1893 and 1894. For 1894 the average daily compensation was, for general officers \$9.71, other officers \$5.75, general office clerks \$2.34, station agents \$1.75, other station men \$1.63, enginemen \$3.61, firemen \$2.03, conductors \$3.04, other trainmen \$1.89, machinists \$2.21, carpenters \$2.02, other shopmen \$1.69, section foremen \$1.71, other trackmen \$1.18, switchmen, flagmen and watchmen \$1.75, telegraph operators and dispatchers \$1.93, and employees of floating equipment \$1.97.

The total amount of reported railway capital on June 30, 1894, was \$10,790,473,813, or \$62,951 per mile of line. This is an increase in the amount outstanding during the year of \$290,238,403. The amount of capital stock was \$4,834,675,659, of which \$4,103,584,166 was common stock and \$730,491,493 was preferred stock. The funded debt was \$5,356,583,019, classified as follows: Bonds, \$4,593,931,754; miscellaneous obligations, \$456,277,380; income bonds, \$242,403,681, and equipment trust obligations, \$63,970,204. The amount of current liabilities was \$605,815,135. The amount of railway securities held by the railways as an investment was \$1,544,058,670, a decrease during the year of \$18,963,563.

The amount of stock paying no dividend was \$3,066,150,094, or 63.43 per cent. of the total amount. Of the stock paying dividends, 4.31 per cent. of the total stock paid from 4 to 5 per cent.; 10.12 per cent. paid from 5 to 6 per cent.; 5.12 per cent. paid from 6 to 7 per cent., and 5.42 per cent. paid from 7 to 8 per cent. The total amount of dividends was \$95,575,976, or an average rate on the dividend-paying stock of 5.41 per cent. The amount of bonds paying no interest was \$650,573,789, or 14.17 per cent. The amount of miscellaneous obligations paying no interest was \$53,426,264, or 11.71 per cent., and the amount of income bonds paying no interest was \$210,757,554, or 86.94 per cent.

The number of passengers carried

was 619,688,199, an increase over the previous year of 26,127,587. This increase was occasioned by the World's Fair travel. The passenger mileage was 14,289,445,893. The average number of passengers in a train was forty-four, and the average distance traveled by each passenger was 23.06 miles. The passenger mileage per mile of line, which indicates the density of passenger traffic, was 81,333, a slight decrease as compared with the previous report. There was a large decrease in freight traffic, the number of tons carried being 638,186,553, as against 745,119,482 in 1893, a decrease of 106,932,929 tons. The ton mileage was 80,335,104,702, a decrease of 13,253,007,131 from the previous year, and the ton miles per mile of line decreased from 551,232 in 1893 to 457,252 in 1894, a decrease in density of traffic of 93,980 ton miles. The average number of tons in a train was 179.80, a decrease of 4.17 tons, showing a decrease of economy in the use of freight equipment. The average haul of one ton was 125.88 miles.

The gross earnings of the railways for the year ending June 30, 1890, were \$1,073,361,797, a decrease as compared with the previous year of \$147,390,077, or 12.07 per cent. Passenger revenue decreased \$16,142,258, or 5.35 per cent., and the revenue from freight traffic decreased \$129,562,948, or 15.63 per cent. The amount of operating expenses was \$731,414,322, a decrease of \$96,506,977, or 11.66 per cent. The largest per cent. of decrease was in the operating expenses assigned to maintenance of way and structures and to maintenance of equipment, which show, respectively, a decrease of 15.12 and 17.52 per cent. The net earnings were \$341,947,475, a decrease of \$50,883,100 as compared with the previous year. The income derived from sources outside of operations was \$142,816,805. The amount of fixed charges and other deductions from income was \$429,008,310, leaving a net income of \$55,755,970 available for dividends, a decrease as compared with the previous year of nearly 50 per cent. The amount of dividends paid was \$95,575,976, a decrease of only \$5,353,909 from the amount paid the previous year. The fact that nearly the normal amount of dividends was paid, notwithstanding the great decrease in income available for them, and that the payment of the amount stated entailed a deficit from the operations of the year of \$45,912,044, is suggestive. The revenue derived from the carrying of passengers was \$285,349,558, or 26.58 per cent. of gross earnings, and the revenue derived from freight traffic was \$699,490,913, or 65.16 per cent. of gross earnings.

#### Weekly Weather-Crop Bulletin.

Weekly Weather-Crop Bulletin of the Kansas Weather Service, for week ending June 24, 1895—T. B. Jennings, Observer Weather Bureau, Director:

#### CONDITIONS.

Good rains have fallen in the eastern counties of the eastern division and in the central counties of the western division and in Phillips, Norton and Rooks counties, with heavy rains in Wyandotte and eastern Brown. Over the rest of the State but little rain has fallen. It has been a splendid growing week. Corn is in excellent condition. Small grains have generally improved. Wheat harvest is general over the northern half of the State and oats harvest has begun in the south. Chinch bugs are damaging many fields of small grain and are beginning to hurt corn in some localities. Pastures and meadows are fine.

#### RESULTS.

##### EASTERN DIVISION.

Wheat harvest is about over except in the northern counties, where it is in progress. The yield is generally light. Threshing has commenced in the southern counties. Corn is growing rapidly and is in excellent condition. Oats harvest is in progress in the southern counties; the yield will be fair, being much better than was expected. Pastures and meadows are much improved and gardens in good condition.

Allen county.—Everything growing finely.

Anderson.—Another good growing week; crops all look fine.

Atchison.—Everything continues favorable.

Bourbon.—Corn in best of condition; oats will make average crop.

Brown.—Wheat harvest in progress; oats and corn looking well; meadows much improved; chinch bugs are damaging corn adjoining wheat fields.

Coffey.—Wheat harvest about over; corn doing well; chinch bugs doing some damage; flax and oats good; prospects for everything excellent.

Doniphan.—Fine growing week.

Elk.—Corn growing very fast, some early planted in silk.

Franklin.—Crops of all kinds doing well; wheat light; oats much better than hoped for.

Jackson.—Another fine week for crops of all kinds; oats are spotted in northern part of county but up to the average in the southern; chinch bugs doing some damage.

Johnson.—Wheat is much better than expected; oats much improved; corn growing rapidly.

Labette.—Oat harvest progressing; corn doing well and beginning to tassle; oats came out better than expected in southern part of county but are generally pretty short.

Leavenworth.—All crops doing finely; wheat harvest about over, with light crop; chinch bugs doing much damage; hay crop will be short.

Linn.—Wheat harvest is over and oat harvest begun; tame hay much improved; corn splendid; pastures good.

Lyon.—Crops in excellent condition.

Marshall.—Wheat is being harvested and is making about one-third crop; corn and oats have made a remarkable growth since June 1.

Montgomery.—Corn making a rapid growth and is now coming into silk; wheat all cut and some being threshed,

Dickinson.—Wheat harvest in full blast, short straw and damaged by bugs; a big crop of oats will be harvested; rain needed.

Harper.—Corn doing well; oats improved; wheat harvest commenced.

Harvey.—Wheat harvest begun in some places where chinch bugs have ripened it; oats in head; corn in best of condition.

Kingman.—Corn growing rapidly; wheat and oats poor.

Kiowa.—Good growing week; corn in fine condition.

McPherson.—Wheat harvest begun; oats and grass much improved.

Mitchell.—Large acreage of corn, growing finely; oats coming out and will make fair crop; rain needed.

Osborne.—Fine growing week.

Ottawa.—Wheat harvest begun; corn doing nicely; oats short but well filled.

Pawnee.—Wheat, oats and barley good; corn doing well.

Phillips.—Good growing week; pastures good; all crops doing well.

Reno.—Wheat improved; oats coming on all right; Kaffir corn fine; gardens looking well.

Rice.—Wheat ripening slowly; bugs doing some damage; corn looking well.

Rooks.—Very favorable week for all crops; wild hay never looked better.

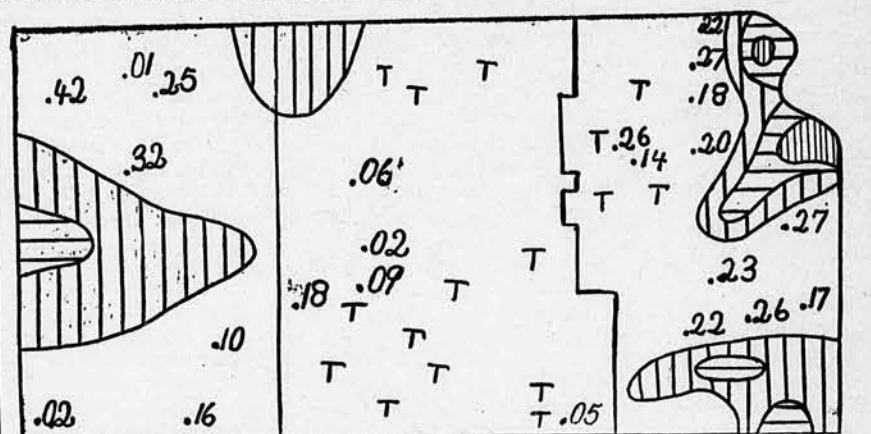
Rush.—A good week for killing weeds; all crop conditions still favorable.

Russell.—Small grains still doing well; wheat filling well.

Stafford.—Everything making a vigorous growth; corn clean and looking fine; wheat yet green, rank growth of weeds in many fields where it was thin on the ground; grasshoppers doing damage.

Sumner.—Wheat-cutting progressing; good quality but light on the ground; corn growing rapidly; pastures improving; peaches ripe.

Washington.—Corn in fine condition



ACTUAL RAINFALL FOR WEEK ENDING JUNE 15.

making fifteen bushels per acre; chinch bugs at work.

Morris.—Corn doing finely.

Nemaha.—All crops in fine condition; wheat will make about one-third crop.

Osage.—Crops doing well; hail damaged fruit in some localities on 22d.

Pottawatomie.—A growing week; oats will make a good yield; wheat light; pastures and meadows doing well.

Riley.—Corn being laid by; chinch bugs leaving wheat fields and attacking the corn; new prairie hay on the market.

Wabaunsee.—Wheat about harvested; oats fair; splendid week for corn.

Wilson.—Wheat being threshed, making from sixteen to twenty bushels per acre; corn, pastures and gardens doing fine.

Woodson.—Corn doing well; oats nearly ready to cut.

#### MIDDLE DIVISION.

Wheat harvest is general in this division except in the southern counties, where it is over. The light wheat crop has been injured by chinch bugs and also by weeds, which have come up since the rains. Corn is growing finely and is in splendid condition except in localities where chinch bugs have begun to work on it. Oats are in fair condition. Prairie hay promises a big crop in northern counties. Rain is generally needed; pastures good.

Barber.—Good week for crops.

Barton.—Farmers still plowing up wheat and putting in corn.

Butler.—Corn growing finely; wheat mostly harvested, poor crop; fruit will not amount to much.

Clay.—Wheat harvest begun; many fields injured by bugs.

Cloud.—Corn in fine condition; oats needing rain; chinch bugs taking the wheat; pastures good.

Cowley.—Good week for corn and potatoes; wheat being stacked; oats light.

and is being laid by; oats need rain.

#### WESTERN DIVISION.

A growing week for all crops. Wheat has improved considerable where not injured by weeds. Corn, barley, oats and broomcorn are doing well. Pasture is in excellent condition and cattle are fat.

Decatur.—Corn is clean and doing well; spring wheat weedy.

Finney.—Wheat filled well; straw short; barley looking well.

Ford.—Corn looking well; barley and oats good crop; fruit prospects good; pasture was never better.

Garfield.—All crops growing finely.

Gove.—A good week for farmers to clean corn.

Graham.—A fine growing week; corn looks very thrifty.

Gray.—Splendid growing week; oats fair; barley fine; wheat one-third crop; grass very fine and cattle fat.

Greeley.—Good general rains.

Meade.—Wheat, oats, corn and barley doing finely; best prospect for corn since 1885.

Morton.—Cultivating and planting proceeding together; prairie grass doing its best.

Ness.—Corn doing well where ground is clean; small grain injured by weeds.

Norton.—Crops all doing well; weeds hurting small grain.

Sheridan.—Corn excellent stand and doing well; gardens fine; hay grass promising; small grain heading; a large acreage of broomcorn is making a wonderful growth.

Sherman.—Needing rain; light frost on 17th.

Thomas.—Wheat and barley headed; weeds have taken some fields in southern portion.

Trego.—Wheat is assured; other crops need rain.

Wallace.—Wheat, barley, oats and corn have improved very much; grass fine.



## Horticulture.

### CULTURE OF THE CHERRY.

Graduating thesis of Clarence V. Holsinger, of Rosedale, at Agricultural college commencement, 1895.

To those who are contemplating the vocation of horticulture, the question arises, "Will it pay to be a specialist?" This thought is probably inspired by the fact that there are few cities of sufficient size in this State to consume the products of a large orchard. But now, with the present means of transportation, there is no reason why the surplus cannot be shipped to the more distant markets. With the apple, it has already been demonstrated that it is a paying crop; and while other fruits have not been tried to any great extent, save in one or two cases, they have been a financial success.

In this Western country, thus far, the cherry has not been grown very extensively. At present it is in high favor with the fruit-growers in the eastern part of the State, many of whom are putting out large orchards. Before this each grower planted only a few trees, owing to the fact that they were not considered a sure crop, or else when grown abundantly there would be no demand. This latter has proved a false notion, for the demand has steadily increased, and as to the other, entire failures have been comparatively rare. There are other reasons why it has become valuable. The demand for fruit of all kinds has been greatly increased during the past fifteen years. Before this little was grown by our farmers, and this usually found its way to the table of our wealthier people. Instead of being eaten raw, as was formerly the case, they are now consumed in many ways, and as for preserving or canning there is no other fruit that has so many good qualities.

Small fruits can be grown profitably by tenants, for it requires, ordinarily, one, two or three years to secure a crop. With the cherry such is not the case, for anything like a paying crop cannot be secured under five years' time. And since few of our renters take longer leases, there will be little competition from this source. Again, if the orchard be in bearing and entrusted to tenants, few among them will give the required care in order to make the crop pay. Therefore, when planting, the grower knows that he must devote several years to his orchard before he can receive anything in return for his investment.

In selecting the varieties for an orchard care should be used in selecting the proper sorts. If the grower has not had experience in the work, he should go slow at first, and plant mostly those kinds that have proved to be successful in his neighborhood. In our State the sour sorts are grown successfully. The others are less hardy and are not suited to this country, though occasionally we see a tree that does fairly well. The varieties best liked and grown most extensively in Kansas are the Early Richmond, Montmorency, English Morello and Wragg. Along with these we have the May Duke, Gov. Wood, Olivet, Ostheim, etc., though these last sorts are not considered of much value, since they are not so hardy.

In selecting a site for a cherry orchard, a north or east slope is preferred, though a cherry tree will grow in any soil where there is not too much moisture. But by planting on the uplands the danger of frosts is lessened and the cost of drainage will not be so great.

Before planting, the ground should be well plowed and manured unless naturally fertile. Select young trees, one or two years old, and unless they are naturally stocky, cut back, and this will cause them to form low heads. Plant in rows, every sixteen feet, the rows being twenty feet apart, using the quincunx method. For trees that grow upright, as the Montmorency, so much room will not be required; though it is better to give too much than not enough. The planting should be done as early as possible in the spring, as by so doing the loss will be greatly diminished.

During the two or three years after

planting, crops of corn or potatoes may be grown between without serious injury. But, above all things, the cultivation should not be neglected, as the cherry makes all of its growth before the middle of July. By using short double-trees practically all weeds may be destroyed; otherwise lots of hard work with the hoe will be required. After the third year all cropping should cease, and then by cross-cultivating with the cultivator or diamond plow every few weeks, little trouble will be experienced in keeping the soil loose and free from weeds. When manure is applied, the best treatment is to plow under with the turning plow, using care not to disturb the trees. Then by frequent cross-harrowing at various times during the season the orchard can be kept in good condition.

As to pruning, very little will be required, but when necessary it should be done in winter or early in the spring before the buds have started. The trunks should be kept clean and any unnatural growth, such as crossing of branches, forks, etc., may be removed with a little judicious use of the knife or shears. But since the cherry usually forms a nice, round top, any unnecessary pruning will only be a detriment and tend to shorten the life of the tree.

Four or five years of good treatment will bring the trees to a fairly good size, and something like a paying crop may then be expected. Of course, the returns will not be large at first, but will increase rapidly each year. By the time the trees are five years old they will furnish a great deal of shade, which will check the growth of weeds. This will make much cultivation unnecessary, though it will pay better to stir occasionally with the plow than to seed down to clover or grass.

In preparing the material to gather the crop, ladders should be secured. Of these the common step-ladder will do very well unless the trees be quite large. In that case strong light ladders should be added. These may be made with very little expense, while at the same time they may be easily handled. A few staging platforms should be constructed. To make these, build two ordinary wooden horses of the required height; across the top fasten a platform and brace well. These are of advantage in that they are comparatively light and may be easily shifted from place to place. They are much nicer for women, as they are more substantial and give more room. Next get the picking-crates and boxes ready. This may be done in winter or at some odd time during the year. If not, some person should be given this work. After a little practice a boy can make a thousand boxes a day. The crates may be made in the same way.

Gathering for market.—The pickers are usually women or children who come from the neighboring towns. They are paid so much per box or by the crate, the price ranging from 20 to 30 cents per crate of twenty-four boxes. In picking, the picker or groups of pickers are each given boxes to themselves. They should be given ladders or else a "horse," and above all things do not allow them to climb the trees. Have buckets or baskets for them to pick in. They are of advantage in that a hook of heavy wire may be fastened to the handle and then suspended from convenient limbs. This will greatly lessen the danger of spilling, and the loss from this source is considerable.

Time of ripening.—The Early Richmond and May Duke begin to ripen about the last of May. They are closely followed by the Montmorency, English Morello and Wragg, the latter sometimes hanging on till the 15th of August.

Having everything in readiness, assign the pickers to trees, and do not allow them to leave till all the ripe fruit has been gathered. Since the cherry must be picked by the stem, and not by taking hold of the fruit, care must be used, so that the stem will not be started or the skin punctured, for when this occurs, the juice will run out, and not only spoil the burst fruit, but that with which it comes in contact. By having each picker by himself, his work will be in such shape

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that it may be inspected from time to time, and he will be responsible for all faulty work. As to facing, many growers do this, yet I think this is useless work and should be avoided; not so much from the extra work that is required, but that it gives a dishonest grower a chance to deceive his buyers. There is one advantage, however; where nicely faced the whole looks more attractive, and fruit prepared in this way usually finds more ready sale.

Cherries will not keep long after picking unless placed in cold storage, hence the necessity of finding an early market. It also looks best at the time of picking, and the sooner the grower disposes of it after it is picked the better off he will be financially. When not too ripe they can stand fully as much rough treatment as any of the small fruits and may be shipped several hundred miles without serious injury.

As to prices, they vary, according to the quantity grown. During the past few years they have sold as low as \$1.25 per crate in the Kansas City market, though the average price ranges from \$1.75 to \$2.35 per crate for the early sorts, the late usually bringing a little more. The yield varies from one to four crates per tree, according to size and general conditions. In figuring the profits there are several things to be noted, the principal ones being picking and packing, and if shipped, the express charges. The material—boxes and crates—will cost on the average 15 cents per crate, while the cost of picking will be 25 cents, or the total amount for picking and packing will be 40 cents per crate. So, if only \$1.25 per crate be realized by the grower there will still be something left in the way of profit.

Some of the drawbacks.—Not only does the horticulturist have to run the risk of frost, hail and rain, but he is molested by birds and insects. Of the first, a late frost will sometimes ruin the entire crop, but as the cherry can stand considerable cold weather this rarely occurs. The risk of hail is much greater than frost, for it will soon strip the trees of most of the fruit if the storm be severe. Wet weather at the time of ripening is disastrous to the culture of the cherry. This causes the fruit to swell and burst if handled roughly. Of the insects that work on the cherry there are several, but the one of most importance is the curculio. The fruit is always more or less affected by this insect, but if the crop be large the effect will not be noticeable. If light, there will be little that is not wormy. To protect against this enemy there is no good remedy. Spraying may be done, but the expense of the work will hardly be repaid, as it is difficult to kill many of the parents, as they feed on other plants besides the plum and cherry. The egg, when deposited, is placed under the skin of the green fruit and it is doubtful if the young larvæ will have a chance to eat any of the poison. To be efficient all plums and apples should be sprayed, and by so doing many of the beetles may be destroyed. The damage done by birds is greater than that done by insects. No sooner does the fruit begin to ripen than all the birds begin to

work on it, the most common being the jay, robin, thrush, woodpecker, etc. The only remedy in this case is to raise enough for them as well as yourself, or else use a gun. The worst pest of all is the Southern wax-wing, or cherry bird. They make their appearance in large flocks in late spring or early summer, about the time the fruit begins to ripen. Instead of eating the whole fruit, as do the other birds, he punctures the skin and only uses a small part, thus destroying all that he attacks. Destroy them at every opportunity, and by so doing you will soon be able to frighten them away.

Thayer's Berry Bulletin for July, 1895.

July is a critical period for all small fruit plants.

Retain all moisture possible, by frequent shallow cultivation and liberal mulching.

Continue nipping off late new shoots of blackberries and raspberries.

Old strawberry beds retained for fruiting another year should be closely cut with scythe or mower and burned over, thus destroying noxious seeds, insect pests and germs of disease. Narrow the old rows to four or six inches with spade, harrow or plow and apply a liberal supply of fertilizer, to stimulate vigorous growth of new plants. Keep clear from weeds and cultivate often. If production was light, same beds may be continued one or two years. If heavy, plow under at once and use ground for some late crop.

New strawberries are now sending out runners to form new plants. Two methods are employed to prevent plants becoming too thick in the row. First, remove all runners until the last of July. Second, allow first runners to make plants and remove all later ones. The second method requires more labor, but produces stronger plants. In any event, allow four or five inches square space for each plant. Pistillate varieties make plants rapidly. To secure vigorous vines and large, nice fruit remove all surplus runners.

Cut out bearing canes of raspberry and blackberry immediately after fruiting and burn them. Every surplus plant, or cane, takes food and moisture from the soil. Every dead branch or weak cane furnishes an abiding place for bug, parasite and disease.

Allow nothing in the fruit garden detrimental to health, growth and development of both plant and fruit.

Look closely for orange rust and other disease on raspberries and blackberries. Dig out and burn affected plants, root and branch, as soon as it appears.

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## In the Dairy.

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

### METHOD OF MANUFACTURING EDAM CHEESE.

The Minnesota Experiment Station has published descriptions of the methods of manufacturing high-priced sweet-curd cheese. One of the best known and most popular of these is the Edam cheese, served at the great hotels and aristocratic restaurants.

"Edam cheese," says the bulletin, "is made from warm milk fresh from the cow, though sometimes it is made by mixing the evening's milk, after it is skimmed, with the morning's milk. If the evening's milk is used it must be set over night in ice water to hold in check the process of ripening. In the morning it is skimmed and warmed to 86° Fahrenheit, and then the morning's milk is added. The mixed milk should be at a temperature of 86° Fahrenheit, when the rennet is put in. If whole milk is used it is generally raised to 90° before adding the rennet. In winter it is set at a little higher temperature. When the milk is warmed to the temperature desired, color is added at the rate of one or one and a half ounces of color to 1,000 pounds of milk. We used from one and a half to two ounces of Hansen's cheese color to 1,000 pounds, but this gave too high a color in the opinion of some who use and handle the best grade of imported Edam. Color should be thoroughly incorporated with the milk before rennet is added. It is not possible to state the exact amount of rennet that should be used, as it varies in strength, but enough should be taken so the milk will commence to coagulate in five to seven minutes and should be ready for the knife in from fifteen to twenty minutes. We used from eight to ten ounces of Hansen's rennet extract per thousand pounds of milk. Dilute the rennet with about five times its volume of tepid water and in pouring it into the milk, pass over the whole length of the vat so that the rennet will not all be put in one end. Stir the milk with a large inverted dipper by moving it slowly through the milk the whole length of the vat so as not to give the milk a tide motion. Stir about one minute, then set the dipper on the surface of the milk to check the agitation, then cover the vat until the curd is ready to cut. To ascertain this, insert the index finger into the milk at an angle of 45°, with the thumb slightly break the curd lying over it, gently raise the finger, and if the curd breaks clean, leaving but few or no flakes, it is ready to cut. A little practice will soon teach one when the curd cuts to best advantage. It should not be so firm that it will cut hard, neither should it be cut when it is too soft, as this occasions great loss of solids in the whey, yet the general tendency of the curd should be towards softness. The American curd-knife is recommended, as its use occasions less loss of fat and other solids. First cut with the horizontal knife lengthwise with the vat, then follow with the vertical knife as soon as the whey begins to appear between the layers of curd. Cut lengthwise of the vat with the vertical knife, then cut crosswise and lengthwise until the curd is cut into pieces the size of wheat kernels. The particles of curd adhering to the sides and bottom of the vat are now carefully rubbed loose.

"After cutting, the curd should be allowed to settle a few moments; stir gently for five minutes, then apply heat, gradually raising the temperature to 98°, though sometimes when the curd has not been cut finely or uniformly it is necessary to raise it to 102° Fahrenheit. The curd is sufficiently cooked when it is firm and elastic, when the larger particles of curd are not soft and contain no free whey inside. It is difficult to give a full description of all the conditions bearing upon this part of the work; there should, however, be no unnecessary delay in getting the curd under pressure, as the ripening process at this stage of the work is very rapid.

When the curd is sufficiently firm it is allowed to settle, when the whey is drawn off until the upper surface of the curd begins to appear.

#### FILLING THE EDAM MOLDS.

"Before the molds are filled they should be put in warm water, so the curd will not be cooled during the process of filling. As soon as the whey is drawn off the molds at once by taking a double handful of curd and pressing gently but firmly into the mold; as the filling progresses pour the whey out of the mold. Care should be taken to put the same quantity into each mold to make the cheese perfectly spherical and of uniform size when pressed.

"The molds in use at this station are of cast-iron, the pattern being made from an imported cheese of proper form. The cheese have a flattened surface on each end so they will set on the shelf without rolling. When the molds are filled, put under gentle, continued pressure for a sufficient length of time to make the cheese firm enough to retain its form while it is being dressed, which may require from fifteen to sixty minutes, according to condition of curd. When they are ready to dress, set the molds containing the cheese into a vat of sweet whey or water at a temperature between 120° and 130° Fahrenheit. Let stand for a minute before moving from the mold. Then take the cheese out, place it in the warm water for one or two minutes, then wrap a linen cloth around it, folding the edges carefully over on each side, forming small pleats at regular intervals; put a linen cap on each end, replace in mold and put under pressure. The cloths and caps must be thoroughly soaked in the warm whey or water before applying to the cheese and care should be exercised that no part of the cheese remains uncovered, and that in returning it to the mold the bandage does not get displaced. If from any cause the curd seems to be tainted, washing in water at a temperature of 100° Fahrenheit, before putting it in the mold, will assist in freeing it from taint. Edam cheese does not require as much pressure as cheddar; sixty to 120 pounds will, under ordinary conditions, be sufficient. They should remain under pressure from six to twelve hours, though no harm will be done if they are not taken out until the day following.

#### SALTING AND CURING.

"When the cheese is taken from the press the molds are set in water at a temperature of 120° Fahrenheit and allowed to stand for a few minutes. The cheese is then taken out and the bandage carefully removed, using care not to tear off any of the rind. The cheese is now ready for salting, and for this two methods may be employed, dry or wet salting. In dry salting it is necessary to have six salting molds to every press mold. These are made of wood, are quite similar in form to the press molds but require no cover. The inner surface of the salting mold is completely covered with a coating of salt. The cheese is then placed in the mold with a little sprinkling of salt on the upper part exposed to the air. This is repeated for five or six days, turning them each day so they will settle into the proper shape.

"If iron molds of the Minnesota dairy school pattern are used, wet salting will be preferable; the cheese will have the proper form when taken out of the press, thus requiring less labor. In wet salting the cheese is placed in a tank of brine as strong as it can be made, a little salt is sprinkled on the upper end exposed to the air. The cheese should be turned each day and left in the brine five to eight days. The temperature of the brine may range from 60° to 70°. Surface-salting makes it exceedingly difficult to obtain uniformity. Some days' make will take salt more readily than others, owing to the variation in the percentage of moisture in the curd. It is therefore especially important that the milk worked is fresh and that the cutting and cooking be as uniform as possible. When the cheese is sufficiently salted it is taken out of the brine and placed on a board to drain, for twenty-four hours. It is then

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washed in warm water, wiped dry and placed on the shelf for curing, leaving a little space between the cheese. Always set the cheese on the flattened end, turn and rub with the hand each day the first month, twice a week the second month and once a week the third month. The curing-room should be cool and moist, the temperature should be held between 55° and 65°, and there should be no sudden changes even within the temperatures given. Fresh air is also of prime importance, though strong currents should not be allowed to come in contact with the cheese, as it will cause cracking. If the air in a curing-room becomes foul the cheese will become slimy or pasty and injurious fungi will soon develop. If the room is too damp, bluish-yellow or red spots will appear which injure the quality of the goods and in extreme cases render it worthless.

"When the cheese is two or three months old it is prepared for market by turning it in a lathe until it is smooth and round, then colored with aniline. The dye is made by dissolving a little aniline or carmine in alcohol or ammonia. Take a two or three-gallon jar, fill two-thirds full of water and add enough of the coloring matter to secure the desired shade. In this bath put the cheese a minute or two, then place on a shelf to dry, and when dry give a light coating of boiled linseed oil. When in the coloring bath the cheese can be conveniently graded. The solid cheese will drop to the bottom. These are good keepers and belong to the best grade; those more open and of poorer quality will barely sink, while the ones that float are inferior goods. Cheese for export are wrapped with tinfoil in much the same way as in dressing. They are placed in boxes, each containing twelve cheese, in two layers of six each, the cheese being partitioned off with narrow boards."

The new dairy law of Missouri goes into effect July 1. A Dairy Commissioner is to be appointed by the State Board of Agriculture, and Missouri proposes to put herself in line with older dairy States in the matter of encouraging dairy development and education among the people. We are glad to note that our friends over in Missouri have been fortunate enough to secure an anti-oleo law. Although not just such a measure as we could wish, still it is better than none and opens the way for something better. It is fitting that the dairy interest should be under the management of the State Board of Agriculture, as there it is liable to be managed with less partisanship than it would receive in other hands. Meanwhile Kansas dairymen must content themselves by seeing the procession pass, but keep up such an everlasting hammering as will show our representatives that the dairy interests are not to be cast aside by intimidation from the packing-houses, and if any doubts arise as to the loyalty of candidates it should be made the leading issue in the next campaign.

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#### Dairy Notes.

A Finney county (Kansas) farmer has started a cheese factory to convince the people that buffalo grass will produce just as good an article as they can make down East.

A Denver commission man paid \$500 for the secret of clarifying rancid butter and he is now buying up all the old stuff he can find, paying 6 cents a pound for it and working it over as first class creamery product.

The chief point to be gained in individual testing, it seems to us, is to be able to determine which cows to raise the calves from. The great law of heredity, "Like begets like," should hold here the same as in other lines.

In raising the standard of the herd it is usually best to get a thoroughbred sire. Be sure that he has a good, reliable pedigree, and be certain that it is good in the last two or three generations. For the mothers use only the best cows in the herd.

The proper amount of salt to be used depends entirely upon what your market demands, but always be sure of what you are doing and never use guess-work. Weigh your butter and salt every time, as nothing injures the butter market more than an uneven product, especially that produced by an uncertain quantity of salt applied.

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### The "Geomys Bursarius," or Pocket Gopher.

Abstract of graduating thesis of C. W. Pape, of Topeka, at Agricultural college commencement, 1895.

The *Geomys bursarius*, or pocket gopher, belongs to the sub-kingdom vertebrate, province mammalia and order rodentia. Its size is that of a large rat; its color reddish brown. The fur is short, silky, and very thick on the pelt. The front feet are each armed with three long claws, suited for digging. Its head is long and cylindrical. The jaws are strong, well developed and fitted with four large incisor teeth of a yellowish red color. The upper incisors have each a deep groove and a smaller one running lengthwise of the teeth. This is a special characteristic of the genus *Geomys*.

From the mouth to the shoulder the skin folds inward, forming a pouch or pocket, from whence its common name—pocket gopher.

The gopher inhabits the river bottoms throughout the entire eastern two-thirds of our State.

In its habits the gopher is strictly subterranean, "more so than any other rodent." The gopher is a very busy little animal, it being at work from early spring until late into the fall. Its work is mostly done during the night, late in the evening or early morning. Its holes are about two and one-half inches in diameter and of indefinite length.

The soil loosened in making its underground channels is scratched and pushed to the surface, and not carried out in its pockets, as is generally be-

lieved. This loose soil is deposited in little mounds, known as gopher-hills, which vary in size from a pint to five or six bushels. The gopher always has several main underground channels and many auxiliary ones.

The gopher is of some slight benefit to man by draining wet lands, eating some roots and seeds of weeds and subsoiling the land to a certain extent. The destructiveness and damage of the gopher in certain localities is very great, and may be readily classed under five heads, as follows: (1) By covering up growing crops with dirt, for each gopher covers, on an average, about 500 square feet of surface each season. (2) By biting off the roots of crops, vines and trees in making its burrows. (3) Drainage of arid lands. (4) As the gopher is a very voracious eater, it requires a large amount of food to appease its greedy appetite. In the fall it lays in a winter's supply, consisting of grains and tuberous roots. (5) If it inhabits meadow lands more or less dirt will get into the hay from the gopher-hills. This is especially true in clover fields, and the feeding of dirty hay has its ill effect on stock. In summing up the gopher's destructiveness, we find it the greatest to the truck-grower, the horticulturist and in the meadow.

How best to destroy the gopher with the least labor and expense, is a problem of great importance. Many and various methods have been tried, with greater or less success. Some of them are as follows: Shooting with firearms; poisoning with strychnine; fumigation; anesthetizing with carbon bisulphide until dead; drowning with water, and trapping. Some of these

methods are impracticable in loose or sandy soils, nor will they work on hill-sides. Trapping, however, is the best and surest of all methods and can be used in any and all kinds of soil. In conclusion, I will say that I am fully convinced that the gopher problem is one of great and vital importance. It is one to which every tiller of the soil should give his or her attention and try to rid the infected fields before the gopher has taken control of them, for if the gopher is not exterminated it will sooner or later overrun the entire State to such an extent that it will require much time, labor, and cost thousands of dollars to effect its extermination.

#### The Best on Earth.

The Rumely engine, illustrated on this page, has the largest possible traction power, has easy steaming qualities, is very simple in its construction, the main axle is behind the fire-box, the gearing is steel and it is the strongest, best made and most durable engine on the market, and the Rumely separator will do as good or better work and as much or more of it, and it is better built and will last longer than any other make of machine now in the field. Write for catalogue and prices, M. Rumely Co., Western Storage and Warehouse building, Eleventh and Santa Fe streets, Kansas City, Mo.

#### Horse Market Dead.

The horse market has "gone all to pieces" worse than ever. A Chicago dealer writes:

"The past week has witnessed the worst state of affairs on the horse mar-

ket of any during the season. Every one seemed afraid to take hold. There were several buyers on the market, but it was almost impossible to get them to make an offer. There was a fair run of horses and of pretty good quality, but everything seemed to be at a standstill. There was no class in demand. It was uphill work all around, with little or no results. Occasionally an extra nice horse would sell fairly well to some outside party, but all dealers seemed to be afraid of their lives. It is very difficult to predict the future.

none to speak of. Prices are low. Several loads of extra big mules changed hands at very fair figures. Little mules are a drug. Absolutely no inquiry for anything under 14-3.

14 hands ..... \$25 @ 35  
14½ hands ..... 35 @ 45  
15 hands ..... 45 @ 65  
15½ hands ..... 60 @ 80  
16 to 16½ hands ..... 75 @ 125

Interesting circulars sent to farmers. Send name to Bureau of Immigration, Spokane, Wash.

Agents wanted for Gearhart's Family Knitter. For particulars address J. E. Gearhart, Clearfield, Pa.

Indiana, Ohio and Pennsylvania  
Are connected with St. Louis by the Vandalia-Pennsylvania lines, which traverse forty counties in Indiana, forty-four counties in Ohio, and the Keystone State from Pittsburgh to Philadelphia. No other transportation system touching St. Louis so completely covers these States. Write Brunner, 509 Chestnut street, St. Louis, for particulars.

Buying Railroad Tickets in St. Louis.

Best place to get tickets for the East is at city ticket office of Vandalia-Pennsylvania lines, 100 North Fourth street, or at union station. Send a letter or telegram to Brunner, 509 Chestnut street, St. Louis, and he will have tickets to any point in the East ready on your arrival in St. Louis. He's reliable; he represents the Vandalia-Pennsylvania lines. Tickets over this route may also be obtained at ticket offices of connecting railways in West and Southwest by asking for them.

No Change to Chicago.

The through service offered the traveling public by the Union Pacific system and Chicago & Alton railroad is unsurpassed. The Perfect Passenger Service of the C. & A. with the well-known excellence of the service of the Union Pacific assures the traveling public that they "are in it" when they patronize this popular joint line from Denver to Chicago and intermediate points. Pullman Palace sleeping cars, dining cars and free reclining chair cars without charge.

For all information apply at 525 Kansas Avenue. F. A. Lewis, City Agent, Topeka.

Low Rates to Boston.

The B. & O. R. R. Co. will sell round trip tickets from all points on its lines west of the Ohio river, to Boston and return, for all trains July 5 to 9, inclusive; valid for return passage until July 22, with privilege of an additional extension until July 31, if desired. Tickets will also be placed on sale at all prominent points in the North and Northwest. The rate from Chicago will be \$22, and correspondingly low rates from other points.

A double daily service of fast express trains is maintained from Chicago to all points in the East. Tourists will bear in mind that all B. & O. trains between the East and West run via Washington. For full particulars write L. S. Allen, A. G. P. Agent, Chicago.

The Knights Templar Conclave will be held at Boston, Mass., during August, and it will be of interest to Sir Knights and their friends to note that arrangements have already been successfully accomplished by the Nickel Plate Road, providing for the sale of excursion tickets over direct lines going and returning or by circuitous routes, viz., going one line and returning by another. By so doing many of the following notable resorts may be visited without additional expense: Chautauqua Lake, Niagara Falls, Thousand Islands, Rapids of the St. Lawrence, Saratoga, Palisades of the Hudson, and the Hoosac Tunnel. The above arrangements will no doubt make the low-rate excursion tickets offered by the Nickel Plate Road very popular. Call on or address J. Y. Calahan, General Agent, 111 Adams St., Chicago. 76

**PILES** Positively cured by our remedies (if directions are carefully followed) or money refunded. Send 75 cts. for a trial. Dr. W. T. Kirkpatrick, Lincoln, Ill.

Write for Information of the

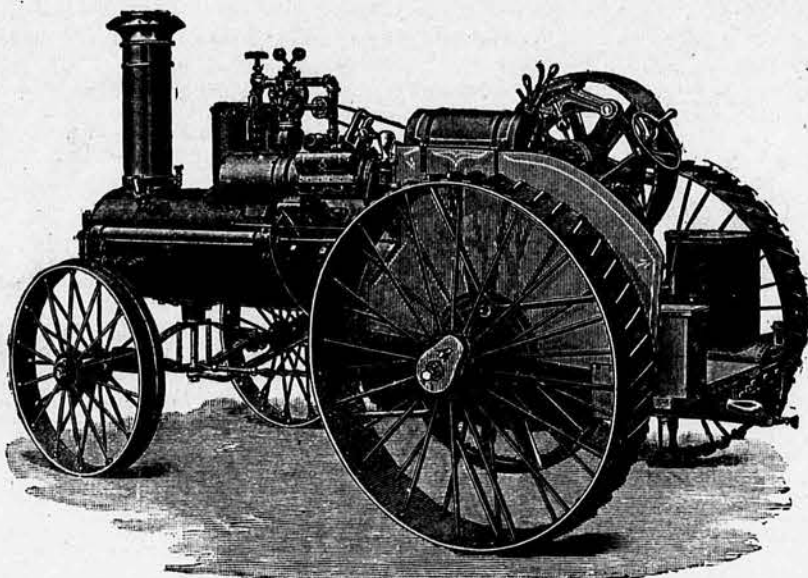
**Sunny Grand Valley of Colorado**

The Home of the Peach and other Delicious Fruits. The land of perpetual sunshine, where there are neither blizzards, cyclones, nor malaria; where the fruit crop never fails, and the farmers are prosperous and happy.

THE WESTERN LAND & ORCHARD CO.  
723 17th Street, Denver, Colo.



Instantly and positively prevents flies, gnats and insects of every description from annoying horses and cattle. It improves the appearance of the coat, dispensing with fly-nets. Applied to cows it will give them perfect rest, thereby increasing the quantity of milk. It is also a positive insecticide for plants. We guarantee it pure, harmless and effective. Recommended by thousands using it. One gallon lasts four head an entire season. Price, including brush, quart cans, \$1.00; half-gallon, \$1.75; and one gallon, \$2.50. Beware of imitations. Made only by The Crescent Manufacturing Co., 2109 Indiana Avenue, Philadelphia.



THE RUMELY ENGINE.

ket of any during the season. Every one seemed afraid to take hold. There were several buyers on the market, but it was almost impossible to get them to make an offer. There was a fair run of horses and of pretty good quality, but everything seemed to be at a standstill. There was no class in demand. It was uphill work all around, with little or no results. Occasionally an extra nice horse would sell fairly well to some outside party, but all dealers seemed to be afraid of their lives. It is very difficult to predict the future.

REPRESENTATIVE PRIVATE SALES.

DRAFT.

1.....	\$70 00	1.....	\$67 50
2.....	65 00	2.....	62 50
3.....	60 00	3.....	57 50
4.....	55 00		

DRIVERS.

3.....	75 00	3.....	70 00
2.....	67 50	2.....	65 00
3.....	60 00	2.....	57 50
2.....	55 00	3.....	52 50
4.....	50 00		

STREETERS.

4.....	47 50	6.....	45 00
5.....	42 50	7.....	40 00

SOUTHERN.

3.....	37 50	5.....	35 00
3.....	32 50	2.....	30 00
4.....	27 50	3.....	25 00

REPRESENTATIVE AUCTION SALES.

DRAFT.

4.....	74 00	3.....	67 50
5.....	65 00	4.....	62 50
6.....	60 00	6.....	57 50
5.....	55 00		

DRIVERS.

3.....	77 50	3.....	75 00
5.....	72 50	2.....	70 00
2.....	67 50	2.....	65 00
3.....	62 50	2.....	60 00
3.....	57 50	5.....	55 00
6.....	52 50	8.....	50 00

STREETERS.

13.....	47 50	10.....	45 00
12.....	42 50	14.....	40 00

SOUTHERN.

15.....	37 50	12.....	35 00
8.....	32 50	10.....	30 00
10.....	27 50	11.....	25 00
9.....	22 50		

MULES.

"Some little trading in mules, but

### A NEW BOOK FREE

It has 128 pages, is printed on fine book paper, it has hundreds of illustrations—wood cuts, zinc etchings. Its reading matter is interesting, as much so for a man as a woman, and the children also are not neglected.

The mere sitting down and writing for it will secure it for you FREE. Do you want it? If so, send your name and address to

**EMERY, BIRD, THAYER & CO.**

Successors to

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KANSAS CITY, MO.

### THE STRAY LIST.

FOR WEEK ENDING JUNE 12, 1895.

Cherokee county—P. M. Humphrey, clerk.

MARE—Taken up by I. N. Conard, in Neosho tp., two and a half miles south of Faulkner, April 28, 1895, one bay mare, fourteen and a half hands high, O on left fore foot and O on right hind foot.

COLT—By same, one brown horse colt, one white spot on back and small white spot back of ears, branded B on right hip; the two valued at \$20.

MARE—Taken up by G. W. McBride, in Lola tp., one black mare, 7 years old, small white star in forehead, cut in left fore foot, saddle marks on back; valued at \$35.

COLT—By same, one bay mare colt, 2 years old, white strip in forehead, scar on neck, scar on left hip; valued at \$15.

Miami county—Jas. E. Caton, clerk.

HEIFER—Taken up by T. W. Officer, in Marvaville tp., May 28, 1895, one red heifer, about 2 years old, some white in forehead, left horn little down, no marks or brands; valued at \$15.

Atchison county—Chas. H. Krebs, clerk.

HORSE—Taken up by George Highfill, in Mt. Pleasant tp. (P. O. Farnell), May 20, 1895, one brown horse, 3 years old, two white hind feet, left fore foot white, white strip in face, about fourteen hands high; valued at \$20.

Anderson county—J. T. Studebaker, clerk.

STEER—Taken up by Wm. Hopkins, in Jackson tp., one red steer, about 3 years old, brush of tail white, branded on left hip with straight mark about three and a half inches long, dehorned; valued at \$30.

Douglas county—F. D. Brooks, clerk.

MARE—Taken up by C. A. Hellstrom, in Clinton tp. (P. O. Belvoir), May 16, 1895, one iron-gray mare, no marks or brands visible, neck had appearance of having been sweetened; valued at \$20.

FOR WEEK ENDING JUNE 19, 1895.

Coffey county—T. N. Bell, clerk.

MARE—Taken up by R. H. Happy, in Pottawatomie tp., May 7, 1895, one gray mare, 3 years old, no marks or brands; valued at \$20.

Cheyenne county—G. Beukelman, clerk.

MARE—Taken up by O. P. Edmonds, in Calhoun tp. (P. O. St. Francis), May 17, 1895, one brown mare, fourteen and a half hands high, about 6 years old, crop off right ear, branded P on left shoulder; valued at \$25.

MARE—By same, one bay mare, fifteen hands high, about 6 years old, branded P on left shoulder; valued at \$25.

MARE—By same, one bay mare, fifteen hands high, about 9 years old, branded P on left shoulder; valued at \$25.

STALLION—By same, one sorrel stallion, 2 years old, fourteen hands high, white strip in face; valued at \$20.

Rawlins county—A. K. Bone, clerk.

MARE—Taken up by Peter Peterson, in Jefferson tp. (P. O. Achilles), May 31, 1895, one light iron-gray mare, 6 years old, height five feet, right hind foot white, slit in right ear, no marks or brands; valued at \$12.

HORSE—By same, one iron-gray horse, 5 years old, five feet high, left hind foot white, lump on right side of nose, no marks or brands; valued at \$14.

Douglas county—F. D. Brooks, clerk.

MARE—Taken up by August H. Boehle, in Willow Springs tp., May 23, 1895, one mare, between bay and roan in color, about 8 years old, about fifteen hands high, both hind feet white, white spot in forehead; valued at \$30.

FOR WEEK ENDING JUNE 26, 1895.

Ford county—J. H. Leidigh, clerk.

MARE—Taken up by E. S. Ralston, in Fairview tp. (P. O. Dodge City), one brown mare, 11 years old, branded lazy 3 (c) on left shoulder and half circle on left hip; valued at \$12.

Cherokee county—P. M. Humphrey, clerk.

PONY—Taken up by S. D. Harvey, in Lowell tp., May 15, 1895, one horse pony, blaze face, right hind foot white, saddle and harness marks, about 7 years old; valued at \$20.

HORSE—Taken up by J. W. Howell, in Lowell tp., June 8, 1895, one black gelding, fifteen hands high, weight 825 pounds, white spot in forehead about three inches in diameter—nearly round, about 4 years old; valued at \$20.

MARE—Taken up by Aaron McKelney, May 13, 1895, one sorrel mare, thirteen hands high, white in face, hind feet white, branded H on left hip, about 11 years old; valued at \$10.

Labette county—J. F. Thompson, clerk.

HORSE—Taken up by G. J. Sharp, in Hackberry tp., May 25, 1895, one bay horse, fourteen hands high, 6 years old, star in forehead; valued at \$25.

HORSE—By same, one dark iron-gray horse, fifteen hands high, 5 years old; valued at \$25.

Logan county—H. G. Kiddoo, clerk.

MARE—Taken up by A. P. Samuelson, in Winona tp. (P. O. Sage), June 7, 1895, one bay mare, star in forehead, fifteen hands high, about 4 years old, no brands; valued at \$5.

MULE—By same, one black mare mule, fourteen hands high, 2 years old, no marks or brands; valued at \$10.

Allen county—James Wakefield, clerk.

HORSE—Taken up by W. M. Miller, in Marmaton tp., one gray horse, weight about 1,100 pounds, about 9 or 10 years old, flecked brands and some harness marks; valued at about \$20.

HORSE—Taken up by John Tillery, in Marmaton tp., one brown horse, 10 years old, white on one foot and spot in forehead; valued at about \$15.



## 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. Sometimes parties write us requesting a reply by mail, and then it ceases to be a public benefit. Such requests must be accompanied by a fee of one dollar. In order to receive a prompt reply, all letters for this department should be addressed direct to our Veterinary Editor, Dr. S. C. ORR, Manhattan, Kas.

**LAME PIG.**—I have a pig that arches its back and walks with a short step, and when down it cannot get up. Its appetite is good but it seems weak in the back. What can I do? C. W. Ocheltree, Kas.

**Answer.**—Rub the pig across the loins and all along the spine with turpentine once or twice a day. If the skin gets sore stop. Also give a teaspoonful of turpentine in swill twice a day for two days.

**SPLIT HOOF.**—I have a horse, 3 years old, that, a year ago, cut his right front foot under the fetlock and down into the hoof on the inside quarter. When it healed it left a seam in the hoof. He cut it again this spring but it had nearly healed up when he got lame, and I find the seam has opened, which I think is the cause of the lameness. Can it be made to grow together again? Dwight, Kas.

**Answer.**—Have the horse shod in front, but first, after leveling the hoof for the shoe, have the part back of the seam cut half an inch shorter than the balance of the hoof, so it will not rest upon the shoe. Now, cut with a knife, or burn with a hot iron, a notch crosswise with and just above the top of the seam, and, if the wall is solid, have a small rivet put through the edges to draw the seam together. By careful attention the hoof can be made to unite, but it should be kept shod for a long time to grow solid, for if the coronary ligament is divided there will always be a seam in the hoof.

### Ottawa Chautauqua Assembly.

On June 16 to 28, inclusive, the Missouri Pacific will sell tickets to Ottawa and return for \$1.50, tickets being good for return passage until June 30. From all other stations in Kansas tickets will be sold June 16 to 20, with same limit for return passage, at one fare for the round trip. On June 27, tickets will be sold from Topeka and intermediate stations to school children, between 5 and 12 years of age, for 50 cents for the round trip, limited for return passage to the following day.

F. E. NIPPS, Ticket Agent, Topeka, Kas.

### MARKET REPORTS.

#### Kansas City Live Stock.

KANSAS CITY, June 24.—Cattle—Receipts since Saturday, 7,115; calves, 351; shipped Saturday, 580 cattle; 209 calves. The market was generally steady. The following are representative sales:

DRESSED BEEF AND SHIPPING STEERS.			
12.....	1,420	\$2.25	18.....1,351 \$1.10
48.....	1,223	5.00	34.....1,200 5.00
63.....	1,164	5.00	23.....1,210 5.00
50.....	1,177	4.85	47.....1,165 4.85
40.....	1,233	4.85	22.....1,338 4.85
60.....	1,253	4.75	76.....1,030 4.70
65.....	1,172	4.70	40.....1,183 4.60
84.....	1,180	4.60	6.....1,033 4.50

#### TEXAS AND INDIAN STEERS.

48.....	1,055	\$3.75	22.....1,025 \$3.75
40.....	883	3.25	1.....910 3.25
4.....	1,032	3.25	31.....860 3.15
5.....	906	3.15	48.....864 3.15

#### SOUTHWESTERN STEERS.

7.....	894	\$3.50	
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#### TEXAS AND INDIAN COWS.

5.....	874	\$3.10	34.....767 \$3.07
29.....	720	2.70	28.....805 2.70
26.....	778	2.55	6.....468 2.40
1.....	770	2.50	18.....666 2.45

#### COWS AND HEIFERS.

1.....	1,860	\$3.80	4.....960 \$3.80
13.....	908	3.80	1.....990 3.70
2.....	730	3.50	5.....874 3.50
1.....	1,000	3.10	3.....866 3.00
5.....	1,030	3.00	1.....1,090 3.00
1.....	1,060	2.50	1.....550 2.50
6.....	1,016	2.50	8.....821 2.25
1.....	1,150	2.25	5.....1,013 2.15
1.....	840	2.00	2.....1,150 2.00
4.....	470	2.00	4.....717 1.75

#### STOCKERS AND FEEDERS.

7.....	954	\$4.00	18.....1,170 \$3.85
1.....	1,090	3.75	14.....686 3.70

Hogs—Receipts since Saturday, 2,158; shipped Saturday, 324. The market opened strong and closed about steady with Saturday. The following are representative sales:

59.....	291	\$4.70	22.....305 \$4.65	32.....310 \$4.65
65.....	310	4.65	70.....273 4.60	50.....218 4.55
30.....	268	4.55	75.....240 4.55	58.....334 4.55
70.....	237	4.55	40.....188 4.50	83.....207 4.50
68.....	218	4.45	70.....186 4.45	46.....234 4.45
103.....	215	4.42 1/2	61.....204 4.45	35.....213 4.42 1/2
77.....	156	4.35	78.....201 4.37 1/2	38.....221 4.35
19.....	141	4.20	21.....207 4.35	22.....216 4.30
115.....	124	4.10	43.....132 4.15	30.....139 4.10
			18.....92 3.25	

Sheep—Receipts since Saturday, 4,334; shipped Saturday, 613. The market was fairly active and about steady. The following are representative sales:

12 lambs.....	65	\$4.50	15.....86	\$3.50
84.....	68	2.50	10.....	@ 1.00

Horses—Receipts since Saturday, 65; shipped

Saturday, none. There was very little going on at the horse and mule market to-day and little interest is manifested in the opening of the week's market to-morrow. There is a fair supply of horses on hand. Buyers are scarce but may come in to-morrow. This season of the year is usually quite dull.

#### Chicago Live Stock.

CHICAGO, June 24.—Cattle—Receipts, 13,000, including 2,000 Texans; official Saturday, 1,211; shipments, 729; market slow and steady; Texas steers, \$2.90@2.95; bulk, \$3.50@4.10.

Hogs—Receipts, 23,000; left over, 2,500; market fairly active, strong early, later market became steady at Saturday's prices; light, \$4.30@4.65; mixed, \$4.45@4.75; heavy, \$4.45@4.85; rough, \$4.45@4.60.

Sheep—Receipts, 13,000; official Saturday, 3,785; shipments, 602; market quiet and barely steady.

#### Chicago Grain and Provisions.

	June 24	Opened	High'st	Low'st	Closing
Wht—June....	69 1/2	69 1/2	69 1/2	69 1/2	69 1/2
July.....	70 1/4	70 1/4	70 1/4	70 1/4	70 1/4
Sept.....	72	72 1/2	70 1/2	70 1/2	72 1/2
Corn—June....	47 1/4	47 1/4	47 1/4	47 1/4	47 1/4
July.....	48 1/4	48 1/4	48 1/4	48 1/4	48 1/4
Sept.....	49 1/2	49 1/2	49 1/2	49 1/2	49 1/2
Oats—June....	27	27 1/4	26 1/4	26 1/4	26 1/4
July.....	27 1/4	27 1/4	27 1/4	27 1/4	27 1/4
Sept.....	27 1/4	27 1/4	27 1/4	27 1/4	27 1/4
Pork—June....	11 82 1/2	11 82 1/2	11 82 1/2	11 82 1/2	11 82 1/2
July.....	11 80	11 87 1/2	11 72 1/2	11 87 1/2	11 87 1/2
Sept.....	12 10	12 17 1/2	12 03	12 15	12 15
Lard—June....	6 47 1/2	6 47 1/2	6 47 1/2	6 47 1/2	6 47 1/2
July.....	6 47 1/2	6 50	6 47 1/2	6 50	6 50
Sept.....	6 67 1/2	6 70	6 67 1/2	6 70	6 70
Ribs—June....	6 17 1/2	6 17 1/2	6 17 1/2	6 17 1/2	6 17 1/2
July.....	6 20	6 23 1/2	6 17 1/2	6 23 1/2	6 23 1/2
Sept.....	6 37 1/2	6 40	6 35	6 40	6 40

#### Kansas City Grain.

KANSAS CITY, June 24.—Several cars of new wheat—all of them low grades—were on sale to-day here. Some early sales of choice hard wheat were at Saturday's prices, but later the whole market was 2c lower. Of the 56 cars reported received 24 cars were white wheat from the Pacific coast, which was bought when prices were higher.

Receipts of wheat to-day, 56 cars; a year ago, 40 cars.

Sales of car lots by sample on track, Kansas City: No. 2 hard wheat, 2 cars 71c, 2 cars 70 1/2c, 2 cars 69c; No. 3 hard, nominally, 67c; No. 4 hard, nominally, 65c; No. 2 red, 1 car 71c; No. 3 red, 1 car new, 68 1/2c; No. 4 red, 2 cars new, 65c; rejected, 1 car new, 65c.

Corn sold early at 42 1/2c for mixed and 43 1/2c for white. Then bids were reduced to 41 1/2c and toward the close 42 1/2c was bid again. White sold slowly.

Receipts of corn to-day, 13 cars; a year ago, 66 cars.

Sales by sample on track, Kansas City: No. 2 mixed corn, 4 cars 42 1/2c, 1 car 42c; No. 3 mixed, nominally, 41 1/2c@42c; No. 4 mixed, nominally, 41c; No. 2 white, 3 cars 43 1/2c, 1 car 43 1/2c; No. 3 white, nominally, 42 1/2c.

Oats were about a cent lower. There was fair demand for them at the decline and not many on sale. White oats were very hard to sell.

Receipts of oats to-day, 7 cars; a year ago, 10 cars.

Sales by sample on track, Kansas City: No. 2 mixed oats, 4 cars 24c, 2 cars 23 1/2c, 1 car 23c; No. 3 oats, 1 car 23 1/2c, 1 car 23c; No. 4, nominally, 22c; No. 2 white oats, nominally, 23 1/2c@26c; No. 3 white oats, nominally, 25c.

Hay—Receipts, 26 cars; market firm; timothy, choice, \$11.00@12.00; No. 1, \$9.50@10.00; No. 2, \$8.00@9.00; fancy prairie, \$9.00@9.50; choice, \$8.00@8.50; No. 1, \$7.00@7.50; No. 2, \$5.00@6.00; packing hay, \$3.50@4.50.

#### St. Louis Grain.

ST. LOUIS, June 24.—Receipts, wheat, 8,600 bu.; last year, 18,714 bu.; corn, 5,300 bu.; last year, 115,700 bu.; oats, 53,900 bu.; last year, 57,461 bu.; flour, 2,940 bbls.; shipments, wheat, 12,000 bu.; corn, 16,521 bu.; oats, 4,795 bu.; flour, 6,037 bbls. Closing prices: Wheat—Cash, 72 1/2c; June, 72 1/2c; July, 70 1/2c@70 3/4c; September, 70 3/4c@70 1/2c. Corn—Cash, 43 1/2c; June, 43 1/2c; July, 43 1/2c; September, 45 1/2c. Oats—Cash, 26c; June, 27c; July, 25c bid; September, 24 1/2c bid.

#### Kansas City Produce.

KANSAS CITY, June 24.—Butter—Market firmer. Extra fancy separator, 15c; fair, 12@13c; dairy fancy, 11c; fair, 9@10c; store packed, fresh, 8 1/2c.

Eggs—In big lots shippers only offer 8c and in a small way 8 1/2c is realized for candied stock.

Poultry—Receipts light; market firm all around. Hens, 6c; springs, fair to good, 12c per lb.; good to choice, 13c; fancy and large, 2 lbs. and over, 14c per lb.; "peepers" not wanted; roosters, 15c. Turkeys sell slowly; gobblers, 5c; hens, 6c. Ducks, 5 1/2c@6 1/2c. Geese, dull and not wanted; alive, 3 1/2c@4c. Pigeons, firm; \$1.25 per doz.

Fruit—Apples, supply moderate; market steady on good apples; best fancy stand, \$1.00@7.00; common to choice varieties, \$2.00@4.00; green apples, supply heavy; fancy, 35@45c; fair, 15@25c per 1/2 bu. box; home-grown, 60@75c per bu. Texas plums, sand hill, 75c@81.00 per crate; thirds, 35@50c; wild goose, 75c@81.50 per crate; 25@50c per 1/2 bu. box. Peaches, choice, 40@50c; fair to good, 25@35c per 1/2 bu. box.

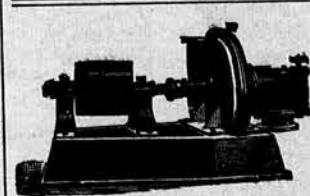
Vegetables—Potatoes, new, 50c@60c per bu.; Colorado, market firm, 75c@80c per bu.; good to choice, 65@70c; common to good, 50@60c. Sweet potatoes, slow; red and yellow, 25@30c per bu.

The Nickel Plate Road has published a map of Boston, Mass., showing the location of the Christian Endeavor Convention hall and State headquarters of the fourteenth International convention, July 10th to 15th, and presenting the merits of their through Drawing Room Sleeping Car Line between Chicago and Boston. Write for a copy to any agent of the Nickel Plate Road or J. Y. Calahan, General Agent, 111 Adams street, Chicago, Ill.



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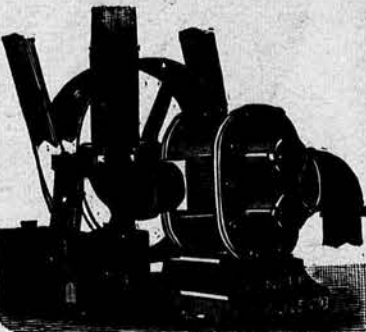


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References:  
Metropolitan National Bank,  
Chicago,  
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## The Poultry Yard.

### SOD POULTRY HOUSE.

It Is Healthful, Convenient and Can Be Built at Small Cost.

The sod house shown in the illustration, I have found healthful, convenient, and large enough to accommodate 75 to 100 hens. In a bank sloping southwest, I made an excavation 12 feet east and west by 22 feet north and south. At the southwest corner the excavation was on a level with the surface of the ground; at the north side it was 2½ feet deep. Around the edges I built a sod wall making its upper edge 5 feet above the floor. I roofed the north half with boards and covered with tar paper. A border of sod was placed all around the edge, then the whole overlaid with 6 inches of gypsum taken from a pit near by. In the south half of the roof I put two hotbed sashes 3x9 feet and covered the remainder of the space the same as the north side. In the walls were placed two glass windows and a door with glass in the upper part. In the north wall there is a window level with the roosts 18 inches high and 5 feet long. It is used for ventilation in the summer. In winter it is covered with boards and banked with earth. The windows are hinged and covered with heavy wire netting. I have an extra lattice door for summer.

The walls were given two coats of gypsum or poor man's plaster (very abundant in the southwest), and when



SOD POULTRY HOUSE.

dry a heavy whitewash was applied to fill all cracks. Roosts occupy the north half. The south half under glass is reserved for nests and a feeding ground during stormy weather. The floor under the roosts is made of gypsum, cement and sand. From this the droppings can be readily taken. I feed boiled wheat in the morning, dry wheat at noon and a feed of meat at least once a day in winter. I have kept 75 to 100 single comb Brown Leghorns in this house for three winters without having a frozen comb. The hens lay well also. The bank feature is not essential; walls made entirely of sod will answer.—American Agriculturist.

### AMONG THE POULTRY.

TURNIPS are an excellent thing for the hens.

BOILED turnips are good for chicks after they get a little age.

Mrs. TILSON says that seventy-five cents is the very outside cost of keeping a hen a year.

If eggs are turned in the nest or incubator with the naked hand they may be ruined.

NEVER give poultry brine. In giving salt mix a teaspoonful to a quart of dry meal and then wet it.

FROM four to five feet of space should be allowed in the poultry house for each hen. Fifty is enough to keep in one house.

If early broilers are wanted, the incubator must be brought into use, if enough chickens are expected to make it worth while to go into the business.

COLD storage has unquestionably somewhat raised the price of summer eggs. But in doing that it has also somewhat reduced the price of winter eggs.

ONE of our poultry breeders always keeps a lump of salt where the poultry can get at it. It is claimed that they will not eat enough to hurt them, and that is probably true.—Farmer's Voice.

SET the coops upon a ridge facing south or east. A little difference in appearance or position of coops saves conflicting claims by the mother hens. Keep the hens shut in stormy days, and after the grass is up until the dew is off.

WORMS and beetles form a most useful diet for the hen, for she lays eggs that are largely albumen. Shut up,

the animal matter the bird finds is very limited, and they show their appreciation of meat, bones, etc., by greedily devouring what is thrown them. Liberty is best, but next to it is ground and dried meat and cut green bones.

HAVE the girls and boys watch the hen turkeys and notice where they steal their nests. Care must be taken to protect outlying nests from foxes, especially nights. If boxes and barrels be placed in sly retreats, the turkey hen will be very apt to choose a laying place in them, and when established she can be shut in nights.—Farm Journal.

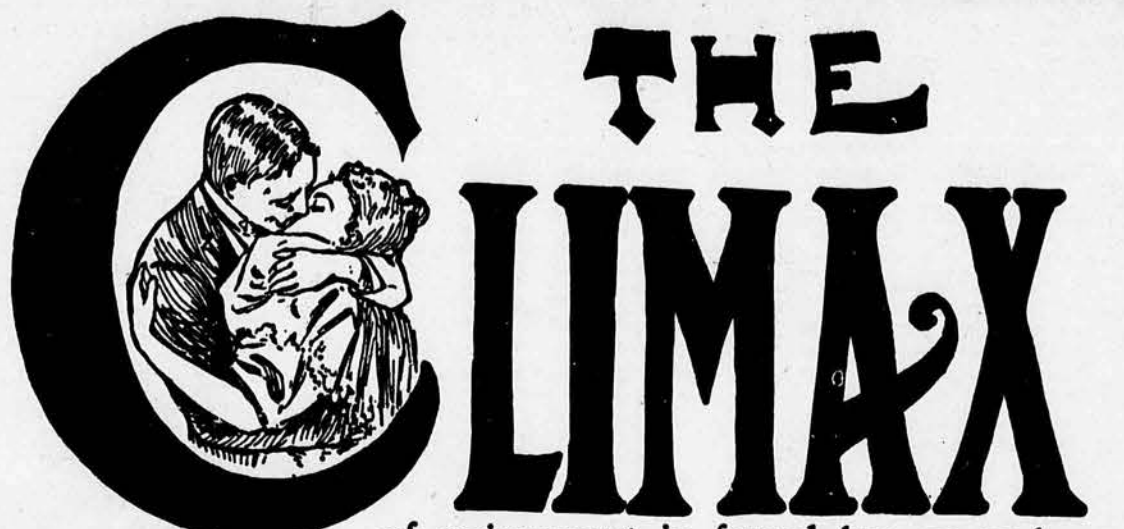
### Start with Strong Stock.

The eggs used in hatching out chicks should be from hens that are active and vigorous. Hardiness is the prime factor in the matter, and a good start with strong stock leaves half the battle won. Under no circumstances should eggs be used from inbred stock, or from hens that are subject to ailments, as constitutional defects are easily transmitted. To prove this, select for breeding purposes a male that is healthy, but that has some peculiarity, such as a twisted comb. When the chicks are old enough to exhibit their combs, the chances are that every chick will have a twisted comb. Such experiments with the male have been made often enough to fully demonstrate the importance of selecting the eggs with great care.—Farm and Fireside.

### Why Eggs Fail to Hatch.

In her natural or wild state, the hen lays in the spring and summer, when the conditions for success are favorable. She is the companion of a vigorous male who may have battled with some competitor for her favors. The eggs from such a hen always hatch and produce strong and hardy chicks. When the domestic hen lays in the spring, the eggs usually hatch well. In the fall and winter, when the hen is stimulated to egg production, has just passed through the molting period, is overfed and confined, and is mated with some worthless male, the conditions are not so favorable, and to secure good hatches from her eggs is a matter of chance to a certain extent. The season affects both laying and hatching.—Prairie Farmer.

Enclose a stamp to any agent of the Nickel Plate Road for an elaborately illustrated Art Souvenir, entitled "Summer Outings." Address J. Y. Calahan, General Agent, 111 Adams street, Chicago, Ill. 70



of enjoyment is found by every lover of good chewing tobacco in LORILLARD'S famous

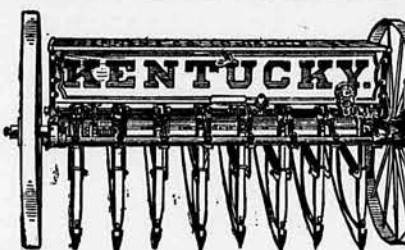
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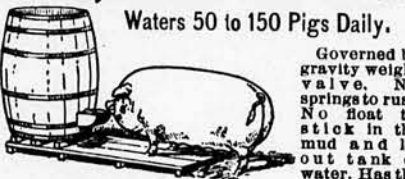
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Waters 50 to 150 Pigs Daily. Governed by gravity weight valve. No springs to rust. No float to stick in the mud and let out tank of water. Has the right sized drinking cup, not a large, double drinking cup to hold a lot of hot, filthy water before fresh supply comes down. Valve sent in body of water and acts as a lock-nut. Can be set to water two pens at once, and can be attached to a tank or barrel in ten minutes. Works successfully in winter. Retail price \$3. We pay express. Fountains sent to any address on trial. Price to be remitted by express agent if satisfactory. It costs nothing to try; send for one. Agents wanted in every locality. Order through implement dealer or STOCK FOUNTAIN CO., Lake City, Iowa.

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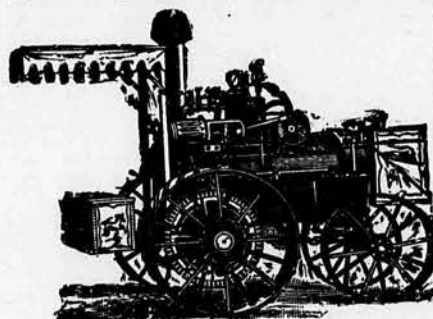
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(Continued from page 1.)

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46 brood sows in herd, headed by Black U. S. Nemo Vol. 9, Model Wilkes (Vol. 9), Sunset Chip (Vol. 9) and Billy Bundy (Vol. 9). Female lines: All Right, Short Stop, King I. L. Wilkes, Free Trade, Wannamaker. Aged sows, bred gilts and fall pigs for sale.

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