

# 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 \$8.00 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.

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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.

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ASHLAND STOCK FARM HERD OF THOROUGHbred Poland-China hogs, Short-horn cattle and Plymouth Rock chickens. Boars in service, Admiral Chip No. 7919 and Abbottsford No. 28351, 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, Muscatine, Atchison Co., Kas.

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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.

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.

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.

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### SWINE.

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Large Berkshire Swine. S. C. Brown Leghorns and Bronze Turkeys.

Headed by King Lee II. 20801, Mephistopheles 32412.

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BERKSHIRE, Chester White, Jersey Red and Poland China Pigs. Jersey, Guernsey and Holstein Cattle. Thoroughbred Sheep. Fancy Poultry. Hunting and House Dogs. Catalogue. S. W. SMITH, Cochranville, Chester Co., Penna.

BERT WISE, breeder of Poland-China Hogs, Holstein Cattle and Barred Plymouth Rock Chickens of choicest strains. Butler's Darkless 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. Three are out of my Orient sows. Write your wants. Satisfaction guaranteed.

BERT WISE, Reserve, Brown Co., Kas.

A. E. STALEY, Ottawa, Kansas. CHESTER WHITES AND POLAND-CHINAS. Light Brahma eggs \$1.50 for 15.

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 95% and from a choice lot of Light Brahmas and Mammoth Bronze turkeys.

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

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.

E. E. AXLINE, OAK GROVE, JACKSON CO., MO. Breeder and shipper of POLAND-CHINAS of the best strains. Herd headed by Roy U. S. 24165 A. assisted by Western Wilkes 12345 S. Some extra fall pigs. Also winter pigs of both sexes at reasonable prices. Orders being booked for spring pigs. Write or come.

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.

### 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 25475, Archibald 1st 32235 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.

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Breeds and has for sale Bates and Bates-topped SHORT-HORNS. Waterloo, Kirklevington, Filbert, Cragg, Princess, Gwynne, Lady Jane and other fashionable families. The grand Bates bulls 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.

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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. Darkless Quality 2d and Ideal U. S. by Ideal Black U. S. head the herd. Both first-prize winners Kansas State fair 1894. Come or write your wants. Willis E. Gresham, Burrton, 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 13676, Winterscheidt Victor 13294, Geo. Wilkes Jr. 11893. Also pigs from Orient's Success 27259 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.

ELM BEACH STOCK FARM IRWIN & DUNCAN, Wichita, - Kansas, Sedgwick Co. Bred and have for sale Bates and Bates-topped Short-horns. Waterloo, Kirklevington and other fashionable families. Also breed and have for sale the best thoroughbred Poland-Chinas that can be obtained. Write or come and see.

STANDARD POLAND-CHINA HERD. CHAS. A. CANNON, Proprietor, HARRISONVILLE, OASS COUNTY, MISSOURI. Breeder and shipper of registered Poland-China swine of the best strains. Herd headed by Chow Chow 9903 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 24985 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 fashionably bred Herefords. H. L. LEIBFRIED, Manager.

(Breeder's Directory continued on page 16.)

## 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 18—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.

### THE FEEDING OF FARM ANIMALS.

[From Farmers' Bulletin No. 22, United States Department of Agriculture.]

(Continued from last week.)

#### ORIGIN OF BY-PRODUCTS USED AS FEEDING STUFFS.

The by-products resulting in the manufacture of flour, glucose, starch, fermented liquors, etc., are extensively used for feeding purposes, and include many of the richest and most prized feeding stuffs. The manner in which these materials are produced will be briefly described.

**By-products from flouring mills.**—In the modern processes of making flour from wheat the grain is subjected to successive crushings or grindings. After each of these the products are separated by screening and blowing into flour, middlings and bran. The bran consists of the coarser parts of the husk, which are unfit for further grinding, with portions of the gluten layer. The middlings contain small particles of bran as admixtures. These are separated, and go under the name of shorts. The shorts contain less fiber and ash than the bran, although they are of similar origin—the outer coats of the grain. After cleaning, the middlings are graded and reground to flour.

By-products of similar nature result in the milling of rye, buckwheat, rice, etc.

Hominy chop, meal and feed result in the manufacture of hominy, and contain the germ and coarser portions of the corn.

**By-products from glucose and starch factories.**—These include so-called gluten meal, glucose meal, cream gluten, gluten flour, gluten feed, glucose feed, dried sugar feed or meal, maize feed, dried starch feed, and some other materials of similar nature. These are all obtained as by-products in the manufacture of starch and glucose from the starch of corn. The process followed and the treatment of the by-products differs considerably in different factories, which accounts for the wide variation in their composition.

The corn is soaked until it is swollen and soft, and is passed through the mill while wet, the hulls and germs of the corn being rubbed off. In some cases the starch is separated from this mass by means of running water, and the wet residue is dried and sold as gluten feed. In other cases the mass after grinding is bolted, the starch and gluten passing through while the husk and germ remain behind. In some factories the latter (husk and germ) are dried and sold as corn-germ feed, corn-germ meal, etc. In others the material is treated to extract the oil from the germ and then sold under the name of maize feed. The material which passes the bolting cloth is treated to separate most of the starch, and the residue is sold as gluten meal, cream gluten, etc. The Chicago gluten meal, it is said, has had a part of the fat extracted from it. In some cases the gluten meal is mixed with the hulls and germs without the oil being extracted. This is said to be the case with Buffalo gluten feed. These materials should not be confused with "grano gluten," which is a dried distillery refuse.

The residues from these factories are frequently sold in their wet condition, containing from 60 to 70 per cent. of water, under the names of wet starch feed, sugar feed, glucose feed, etc. These wet products must be used at once, as they ferment. The dried products from the same factory often vary considerably in composition from

time to time. Owing to these variations and the fact that there is such a variety of names for these products that it is difficult to make any helpful classification, the farmer can only be certain of what he is buying when he buys on a guaranty of composition or from lots that have been analyzed.

**By-products from oil mills.**—Of these the most common in this country are the cottonseed meal and linseed meal. The oil is expressed from the seed, and the residue is in the form of hard cakes called oil cakes. In Europe this cake is often sold as such for feeding. In this country it is usually ground to a meal. Formerly the hulls were not removed from the kernel, and the cake or meal was then known as undecorticated. At present practically all of the cottonseed is decorticated.

The composition of cottonseed meal depends upon the composition of the seed and the completeness of the separation of the hulls and the expression of the oil. The composition of the hulls depends considerably upon the thoroughness with which the kernel and lint are removed. Usually more or less of the kernel adheres to the hulls, increasing the percentage of protein and fat. Linseed meal, or oil meal, as it is often called, is the residue from the separation of oil from flaxseed, and is distinguished as old process and new process. In the old process the oil is expressed. In the new process it is more thoroughly removed with the aid of solvents, hence the meal contains less fat.

**By-products from breweries and distilleries.**—In making malted liquors from grain (usually barley) the material is treated with malt, changing the starch of the grain to sugar, which is then fermented, yielding alcohol. The residue of the grain is called brewers' grains. As first obtained it is very wet, containing some 75 per cent. of water. It is sometimes sold in this condition for immediate use, but when it is to be shipped away is dried, and can then be kept indefinitely.

Malt sprouts, another product from breweries, result in the preparation of malt from barley. The barley is sprouted to develop the principle of malt in the grain, and when the process has proceeded far enough it is checked and the sprouts are broken off and sold for feed. The residue from making distilled liquors from grain is known as distillers' grains, or "slump." It is very watery. A cooked and dried distillery waste is sold under the name of grano gluten.

#### PREPARATION OF FOOD FOR ANIMALS.

One point upon which there seems to be much misconception is as to the influence of previous treatment of the food on its digestibility. Thus, for example, the effect of drying hay is not to lessen its digestibility, as is often believed. The soluble materials may be washed out if the hay is rained upon, and the tender parts may be lost in harvesting, but in ordinary hay-making the water of the grass is largely dried out without the digestibility of the constituents being materially affected. Hay stored for a long time, even when kept dry and not allowed to heat, appears to lose a part of its value as food. Experiments have shown that rowen was less digestible after keeping over winter than when cut in the fall, even though there was no change in composition, and it was not as well relished by animals.

#### COOKING AND STEAMING FOOD.

There has been considerable misconception as to the value of cooking or steaming food for stock. Experiments abroad have indicated that cooking or steaming coarse or unpalatable food was advantageous, not on account of making the food more nutritious, but in inducing the animals to eat larger quantities of it. In fact it has been shown for lupine hay and some other materials that the digestibility of certain of the food ingredients, notably the albuminoids, was diminished by steaming; and the cooking of potatoes, which was formerly believed advantageous, has been shown to be of no advantage whatever in case of milch cows, although it was of some advantage to pigs. Julius Kuhn, in his book on feeding, says:

"Unless large amounts of straw and

coarse foods are to be fed and the supply of good hay and hoed crops is scarce it will usually be more profitable to omit the steaming. If the reverse condition prevails steaming will be found a very advantageous means of inducing the animals to eat sufficiently large quantities of the food."

Ladd, while connected with the New York station, reported analyses of cooked and uncooked clover hay and corn meal and determinations of the digestibility of the same. These showed that the percentage of albuminoids and fat and the relative digestibility of the albuminoids were more or less diminished by cooking. The experiments made by our experiment stations in preparing food have been mostly with pigs. At least thirteen separate series of experiments in different parts of this country have been reported on the value of cooking or steaming food for pigs. In these cooked or steamed barley meal, corn meal, and shorts; whole corn; whole corn and shorts; peas, corn and oat meal; potatoes, and a mixture of peas, barley and rye have been compared with the same foods uncooked (and usually dry). In ten of these trials there has not only been no gain from cooking, but there has been a positive loss, i. e., the amount of food required to produce a pound of gain was larger when the food was cooked than when it was fed raw, and in some cases the difference has been considerable. In the three exceptional cases there was either no gain at all or only very slight gain from cooking or steaming, amounting to 2 per cent. in one case.

Experiments in feeding steamed cottonseed to cows are reported by the Mississippi station. The station concludes from three years' work that "the milk and butter from cows fed on steamed cottonseed cost less than that from cows fed on raw cottonseed and but little more than one-half as much as that from cows fed on cottonseed meal. The butter from steamed cottonseed is superior in quality to that from either raw seed or cottonseed meal." The Texas station finds it advantageous to boil cottonseed for steers.

#### MOISTENING AND SOAKING FOOD.

Three stations have reported comparisons of dry with wet or soaked food for pigs. The food consisted of shelled corn in one case, of a mixture of corn meal and shorts in another, and of a mixture of corn meal, shorts and linseed meal in a third. In every case the pigs ate more of the wet food and made larger gains on it. The additional gain was usually due to the larger amount of food eaten when moistened or soaked. The Kansas station has just reported an experiment in soaking corn for steers. The shelled corn for one lot (five steers) was soaked until it began to soften, and that for the other lot (five steers) was fed dry. From November 7 to April 6 the lot on soaked corn ate 282 bushels of corn and gained 1,632 pounds, while the other lot ate 290 bushels of corn and gained only 1,468 pounds—a difference of 164 pounds. Owing to their better condition the steers fed soaked corn brought a higher price, giving a balance of \$25.50 in favor of soaking. The conclusion is that it will pay to soak corn for steers if it can be done for 6 cents a bushel. Soaking wheat for pigs is quite generally recommended.

#### CUTTING COARSE FODDER.

The Maine station compared the value of chopped and unchopped hay for cows, and found no evidence that the chopping had any effect. Cutting corn stover was found advantageous at the Wisconsin station. The Indiana station found that steers made better gains on cut than on uncut clover hay. In reference to cutting coarse fodder Prof. Henry says:

"There should be a good feed-cutter on every dairy farm, useful for silo filling in the fall and for chaffing feed in the winter. All corn stalks should be put through this machine, for then they are in better condition for feeding, and the coarser portions left uneaten are in good form for bedding and the manure heap. Long corn stalks are a nuisance in the feeding manger, worthless for bedding and troublesome in the manure pile. Many farmers find difficulty in feeding cut corn stalks,

since sometimes the cows refuse to eat them. In a few cases we have found that the sharp ends of the corn stalks, when cut certain lengths, injure the mouths of the cows. Where they are not well eaten the cause is often due to overfeeding, or endeavoring to have the cows live on too limited a variety of foods. Keep the mangers clean and feed the cut fodder with care, and usually very little will be left over, and that only the coarsest portion. Experiments at the Wisconsin station show that with the varieties of corn raised there much more of the cut stalks will be eaten than if fed uncut under the same conditions."

#### FEEDING FOR FAT AND FOR LEAN.

The theory has been advanced that the relative production of fat and lean meat can be largely influenced by feeding. Experiments bearing on this question have been mainly with pigs, but two are reported with cattle. At the Missouri Agricultural college Prof. Sanborn fed calves on a ration containing different proportions of protein (nitrogenous material). The nutritive ratio (ratio of protein to carbohydrates and fat) of the food of one lot was 1 to 2.4 (narrow) and of the other lot 1 to 5.5. Both lots gained practically the same amount in weight, but the character of the growth was quite different. There was nearly one-fourth more fat on the intestinal and vital organs of the lot on the wider ration (1 to 5.5) than in the case of the other lot. "The meat of lot 1 (ratio 1 to 2.4) was distinctly more fibrous in character and showed a denser fiber without the light streaking of fat."

The New York State station compared rations with a wide nutritive ratio (carbonaceous) and a narrow ratio (nitrogenous), the difference in proportion of protein being brought about by substituting a part of the corn meal in the carbonaceous rations with cotton seed meal, linseed meal or gluten meal. "In general appearance the lot fed the nitrogenous ration was much the better, having a cleaner, brighter coat of hair. The photographs of the meat show little, if any, difference in the proportion of fat and lean." The meat of animals fed on the carbonaceous rations (corn meal largely) was thought to be "much the tenderer and sweeter."

Recent experiments in feeding steers at the Kansas station have shown the value and the effect of a nitrogenous ration for this purpose as compared with one composed largely of corn. The meat from the lot fed the more nitrogenous ration brought a higher price.

Experiments by Prof. Sanborn at the Missouri Agricultural college in 1884, 1885 and 1886 strongly indicated that the character of the food influenced the character of the pork produced, and that such nitrogenous foods as shorts, middlings and dried blood, as compared with the corn meal fed alone, tended to increase the proportion of lean pork to fat. The matter was taken up by Prof. Henry, of Wisconsin, in 1886, and by several others later. His experiments all corroborate Prof. Sanborn's work. Pigs fed shorts, bran, skim-milk or dried blood produced a larger proportion of lean pork than those fed corn alone.

In discussing his four years' experiment, Prof. Henry says:

"We feel warranted in maintaining that the kind of food supplied to young growing pigs has a very marked effect upon the animal carcass; the foods rich in protein tend to build up strong muscular frames and large individuals, with ample blood and fully developed internal organs; that excessive corn feeding of pigs, even after they have obtained a good start, tends to dwarf the animal in size and prematurely fatten it; that, owing to the larger amount of ash contained, and perhaps for other causes, pigs receiving the usual nitrogenous foods have stronger bones than those fed on corn; and that the bones of pigs fed on corn contain the least mineral matter. \* \* \*

After the pigs have reached the age of seven or eight months there is far less necessity for nitrogenous foods, and the cheapest gains can be made with corn."

Taken in connection with the testimony of butchers and pork packers, that the demand for fat beef and fat pork is decreasing, these facts are of considerable importance to feeders.

(To be continued.)

## Agricultural Matters.

### STUDIES IN SUBSOILING.

BY H. R. HILTON.

The corn crop of Kansas invariably gives evidence of a sufficiency of moisture and promise of a large yield up to the time of tasseling—June 20 to July 10. July is its testing time. The average yield of corn in the entire State for the past thirty-three years has been thirty-one bushels per acre.

The average maximum temperature for the month of July for thirty-six years at the State Agricultural college, Manhattan, is 100°. When the maximum temperature exceeds this the average corn yield falls below thirty-one bushels per acre, and *vice versa*. Light rainfall and high temperature are generally coincident, but in one or two instances, as in 1875, when the rainfall was very deficient and the maximum temperature low, the average yield per acre was far above the average. Maximum July temperature is evidently the controlling factor in making a corn crop in Kansas. Take, for instance, the past twenty years, and divide into two equal periods of ten years each: From 1875 to 1884 the average maximum temperature was 97° and average corn yield thirty-seven bushels per acre. From 1885 to 1894 the average maximum temperature was 103° and average corn yield twenty-two and a half bushels. In the first ten-year period the maximum temperature exceeded 100° only once. In the second period the temperature fell below 100° in two seasons only.

High temperature means excessive evaporation. Prof. King, of the Wisconsin Experiment Station, estimates that thirty tons of water per acre is evaporated daily from the surface of land in summer months under ordinary methods of cultivation. This is a loss equal to one inch of rainfall every four days or less. The same authority has also ascertained as the result of three years' testing that 310 pounds of water is required to make one pound of dry matter of corn. On this basis a crop of corn yielding fifty bushels per acre would use about one thousand tons of water [per acre] in its growth and development, or the equivalent of nine inches of rainfall. The records of eight meteorological stations in the eastern half of Kansas, covering periods from ten to twenty-five years, give an average of nineteen inches of rain from April to August, inclusive. To produce thirty-one bushels of corn per acre less than six inches are actually used by the corn plant, leaving thirteen inches, or over two-thirds, lost by being run off at surface, by percolation, or evaporation. This is also taking no account of the fifteen or twenty inches of rain that falls in the remaining seven months of each year and not used in plant growth. So long as only one-third of the rainfall of the growing months and one-sixth in the annual rainfall is used by the growing crops we have certainly a wide margin to work upon and great opportunities for improvement. Temperature and rainfall are factors still beyond human control, and likely to remain so, but it is within human control to modify their influence, and it is doubtful if there is any phase of farming to-day on which there is such a general lack of information as on this question of moisture storage and moisture waste.

The first essential is a better knowledge of the physical texture of the soil. In a cubic foot of good soil about one-half is soil and one-half is air space. When fully saturated one-half is soil and one-half is water. The amount of water any soil will hold back from drainage is largely determined by the extent of exposed surfaces on the face of the soil grains. In a very fine clay the exposed surfaces in a cubic foot will exceed two acres in extent. The extent of this surface is in turn determined by the fineness of the soil grains and their mechanical arrangement. The more nearly spherical the grains of any given size and symmetrical their arrangement the greater the capacity to retain moisture and the more freely will the water move through it when fully saturated.

A good soil will hold back from

drainage 25 to 30 per cent. of its bulk of water, or three inches of water for every foot of depth. Such a surface soil underlaid with a good clay subsoil will absorb and hold back from drainage twenty-one inches of rainfall in the top seven feet. When the moisture content is reduced to 10 per cent. of the mass the plant is unable to extract water or sustenance from a fine soil, so that only the moisture content above 10 per cent. is available. This leaves three-fifths of the moisture content of every foot available for plant growth, or a total of 12.6 inches or over 1,400 tons per acre in the seven feet of soil. Corn roots will penetrate the subsoil three to four feet if conditions are favorable, and as the roots remove the water from the surfaces of the soil grains the moisture films become thinner, thus increasing the extent of surface exposed and setting up a strain or pull known as "surface tension." The water in the soil is kept more or less constantly in motion because the tension equilibrium is being disturbed by the roots of plants withdrawing the water, the evaporation at the surface, the changes in the temperature of soil, and the mechanical rearrangement of soil grains caused by cultivation at the surface and by motion of water through the soil at all points; and we may consider that all the moisture content above 10 per cent., to the depth the corn roots reach, and all below that point in excess of 12 to 15 per cent. to the depth of seven or eight feet, is available for use.

Our farmers are constantly figuring on the capacity of their barns and silos and how to fill them. How few calculate the capacity of the water reservoir in the eight feet of soil below them or how to fill it in the fall or winter and have a reserve on hand for need of corn plant in the critical period of its life, for in this climate the corn plant needs half of its supply of water after it begins tasseling. We have in Kansas large areas of fine farming land underlaid with subsoils capable of storing in excess of 25 per cent. of their bulk of moisture, and yet the entrance to this reservoir has been practically sealed and the storage capacity seriously limited. Just below the depth to which the land is usually cultivated we find the soil compacted by the tramping of horses' feet in the bottom of furrows year by year, glazed by the plow shoe, and in many cases hardened by alkalies washed out of the cultivated soils by the rain and carried down into the subsoil. This impervious blanket varies from a few inches to several feet in thickness. Much of it would absorb all of the rain that falls if given time enough, just as sandstone or limestone would do, but we often get over five inches of rainfall in a day and sometimes that much in a few hours. When the ground to the depth cultivated is fully saturated, if the subsoil does not take the excess of rain as fast as it falls then there must be a run-off at the surface with serious loss of both water and the finest soil grains.

High temperatures, compacted subsoils and torrential showers present the difficulties to be overcome. Does not common sense suggest at least one simple remedy? Lance the congested part with the subsoil plow and let in some fresh blood (water). Give it the freest possible circulation to a depth of eight feet. In other words, take the lid off the reservoir and fill it with the surplus waters of fall, winter and springtime. Every inch of rain stored means a better filled granary. With late improvements in subsoil plows it is now possible to loosen the soil twenty-four inches in depth. This will take care of five inches of rainfall at one time till the subsoil can take in the surplus. The race track at Topeka has recently been plowed to a depth of thirty inches, the first plow turning a furrow ten inches deep and the subsoiler loosening the soil twenty inches further. This was done by four horses on each plow.

A few farmers in this vicinity have been subsoiling for six years, and having tested its value now repeat the subsoiling of each field every third year. All who planted corn last season on subsoiled ground testify unanimously to its great value and its

affording greater drought-resisting power than old methods. In a dry season the yield is practically double. In a wet season the better drainage also gives better returns. It is important to know the physical texture of the soil and how to provide storage for water in the soil. It is equally important to know how to save this water supply. Subsoiling lets the water into the soil and helps the farmer to save the rainfall. It encourages deeper rooting; it removes the base of supply further from the influence of sun and air, except as these reach it through the growing plant; it enlarges the range over which the roots may roam in search of water and food; it makes available the subsurface waters by disturbing congestive conditions below the surface plowing, establishing freer air and water circulation from above and below; but notwithstanding all these advantages it still needs the co-operation and aid of its most valuable ally—the dry soil mulch. This is the flexible lid that destroys the surface tension in the soil and prevents the moisture coming to the surface to be evaporated. It needs to be replaced after every heavy shower that packs the surface soil and establishes a capillary connection between the reservoir and the atmosphere. This means the prompt use of harrows and cultivators to dry out the top soil two or three inches deep and destroy its capillarity; it means the prompt harrowing of wheat and oat stubble after harvest to retain the moisture until the ground can be plowed; it means harrowing after plowing; it means harrowing and cultivating all the year round, except when frozen, in crop season as well as out of crop season.

All soils are not equally benefited by subsoiling; with some kinds it is best to do it gradually, going a few inches deeper each year. In rare instances it may work an injury, but in the vast majority of acres west of the Mississippi river and within the corn belt the sooner and the deeper it is subsoiled the better. Kansas will have over 1,000 subsoil plows in use during the season of 1895, and the questions of moisture-storage and moisture-saving which have become of intense interest in this State, will receive practical tests under various conditions of soil and climate. It is an extension of the work of State experiment stations on the university extension plan and the results will be of great interest and value to the farming world.

### Deep Subsoiling Compared With Other Methods.

EDITOR KANSAS FARMER:—To be modest in our statements on the subject of subsoiling, we would say, first, a subsoil plow, to be practicable, should be so constructed that it will meet the requirements of all classes and conditions of subsoils—sandy, gravelly, hard-pan, gumbo, clay or stony soil. Such a plow is manufactured and has been well tested in each of the above soils and is sold for less money than a common fourteen-inch plow, and can be run with four horses in the most extremely hard gumbo or hard-pan, from twelve to sixteen inches deep in once going over the ground, and after good rains have soaked the bottom of that plowing you can go as much deeper the next time the plow is used. After the bottom of that is well soaked your reservoir is made, with abundance of moisture already distributed in the right position. This can be accomplished with this tool independent of any other plow. This plow and the work it will do will last almost indefinitely if a few simple requirements are complied with. The benefits of such a condition of the soil as this are too many to be noticed here, even briefly. I will only mention a few. Perhaps the greatest is that it would be the grandest rain-maker and the only absolutely sure one. It acts in harmony with nature by holding the moisture in the ground, which keeps the surface of the earth comparatively cool, thereby preventing the condition which causes an immense rush of heated air upwards, which effectually drives away all clouds, thereby preventing rains that otherwise would be received. Another benefit is that the

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top soil does not become soaked with water, there being loose soil down two feet deep, allowing the water to settle away from the surface so quickly that the soil does not become hard and baked, as it often does when not subsoiled. Another no less desirable result is that all the rains that come go into the ground, making such an abundance that much of it may be filtered through the earth into springs, creeks, etc., to become never-failing fountains of pure water for man and beast, as well as living streams, to add both health and wealth to the country. Really this is but a small part of the grand results that could be mentioned for deep subsoiling. Surely much more will occur as very desirable to any thoughtful mind, and all at such small expense compared to all other methods. For instance, contrast it with the scheme of damming ravines, etc., to catch the surface drainage, which is not practicable except at great expense.

If dams are constructed merely of dirt, as is proposed by advocates of this method, the water that often comes in floods and torrents would sweep them away almost as if made of straw. But suppose they could be made to stay, it would necessitate a solid structure of mason-work on a solid foundation or piling, which is expensive. Then, after you have got your dam built and made to hold water by puddling, etc., all of which is attended with much difficulty, as is admitted by its advocates, you have got a little water, to be sure, but it is not where you want it; you have got to in some way distribute it over your ground to get much or any good out of it, and that is no small job. Then the supply is very meager compared to your needs, so your reservoir is soon empty, and then shrinks and cracks, making it very leaky again, and it has to be repuddled every time it rains. If you make it deep, so the supply will be greater and therefore last longer, it soon becomes a filthy, stagnant pool, to breed mosquitoes and disease. Of course the hot sun and wind soon abates the nuisance by drying it up, which is indeed a relief.

Irrigation, also, is attended by much expense and trouble and is virtually impracticable in far the larger portion of any country. In any case it is rendered more than twice as effectual by deep subsoiling before irrigation. If water is applied to the soil by irrigation in a hot, dry time, while the crop is growing, the results are anything but desirable, especially when the ground has not been subsoiled. But if the ground has been thoroughly subsoiled two feet deep and thoroughly wet by irrigation before the ground is seeded or planted, there would be no necessity for irrigation while the crop was growing. There would be plenty of moisture to mature the crop.

H. Topeka, Kas.

## Irrigation.

### WHEN TO IRRIGATE AND HOW.

BY JOHN M. IRWIN.

The very first duty of the irrigator who has his lands in proper shape to irrigate, is to turn the water on in sufficient volume to thoroughly wet the ground, including the subsoil. In all cases where water can be obtained in the autumn, after the season's crops are harvested and before the ground freezes up, turn on a volume equal to four to six inches of water, which will soak into the ground and much of it will be stored there to assist in supplying the requirements for the next year's crops. If this has been done, then when the frost leaves the ground in the spring the soil will be found to be quite friable; as the freezing expanded the earth particles it left interstices between these particles into which air finds its way. It would seem that air is as important and as necessary for plant life and vigor as it is for animal life. Therefore, every effort must be made to retain this air in the soil. A flood of water drives the air out, but if the water be allowed to soak away into the soil and the soil allowed to assume a normal condition before being stirred the air will follow the receding water and again take its place. In good time before plowing in the spring, water the ground thoroughly. When in good working condition, plow carefully, then as soon as possible harrow or otherwise pulverize the soil very fine. Cultivation, careful cultivation, intense cultivation is more important from now on until crop is harvested, than water. Do not depend on water alone, but depend more on careful and intense cultivation to produce the big crop yields. Many irrigators just undertaking farming by irrigation are liable to drown the crops, besides they will waste the water by putting too much on the ground during the growing season, by watering too much at a time or too often.

As we have already called attention to the evil of driving the air out of the soil by flooding with water, there is another way of driving out the life-giving air without drowning it out, and that is to work the ground when it is too wet. Stirring wet soil kneads it into compact masses, driving the air out of the interstices, which should always remain between the earth particles. This produces a "puddled" or "baked" condition. For the same reason, as soon after watering the growing crops that require cultivation as the soil is in proper condition to work, a suitable implement should be used to pulverize the surface over which the water flowed, which will again permit the air to enter the soil.

In all crops requiring cultivation, the surface of the soil cannot be kept too finely pulverized.

Corn.—If the irrigator has complied with the foregoing, let him plant the corn and cultivate it carefully and there will, probably, not be required any further irrigation until the stalks begin to tassel, when, if the cultivation has been done by what is known as the "level" system, then with a large single-shovel plow (a single lister will answer) let him run a furrow midway between the rows for the water to run down through. Then when irrigating the water must be confined to the furrows, so that it may not spread over the ground about the roots of the stalks. If it does, injury will be done through baking, since it will be quite impossible to break up the baked crust about the roots of the growing plants. The water soaking into the ground from the furrow spreads through the soil to the corn rows on each side of the furrow. As soon after watering as the soil is in proper condition a suitable implement should be used to gather the soil back into the furrow, at the same time disturbing the corn roots as little as possible. One more watering will be ample and should be done about the time the corn is in "good roasting ear," filling up the furrows as before.

Sorghum, Kaffir corn and other kindred crops should be watered in a similar manner to that of corn.

Potatoes.—Irish potatoes should be

watered in the same manner as corn.

Best results are obtained by hilling the potatoes as it is called, that is by throwing the dirt to the rows of potatoes with a plow; this leaves a deep furrow between the rows. No water is to be used until the tubers have set. If watered immediately before setting, a greater number of potatoes will be formed than the plant can support, and consequently but few of them will grow large enough for the market. When the tubers have set then turn the water into the furrows, being careful not to fill the furrows too full, otherwise should the water flow over the hill and against the vines or plants the soil will "bake," and, besides, the water "scalds" the plants. Once the irrigation of potatoes has commenced the water must be turned into the furrows every eight or nine days until the tubers have developed to the size desired, when the watering is to be discontinued and the soil allowed to dry out, so as to ripen the potatoes in good form. After every watering, as soon as the soil is in proper condition a suitable tool should be employed and drawn by a horse to break up the crust that otherwise would form in the furrow through which the water flowed.

Sweet potatoes should be irrigated in a similar manner to that of Irish potatoes, but may be watered when setting out as well as before the tubers set.

Root crops, such as turnips, beets, carrots, etc., may be watered at any time after planting, provided the same care is taken to keep the soil in a mellow condition.

Onions do best in a rich soil and need watering often enough to keep the soil moist, but not wet. Intense surface cultivation is required to insure a big yield.

Cabbage and cauliflower require frequent watering.

Celery requires even more water than cabbage.

Tomatoes require much less water than other vegetables.

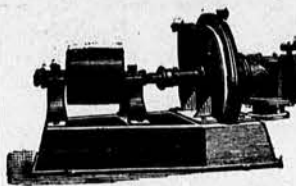
Pumpkins and melons require frequent watering.

Fruits.—Apples, peaches, pears and similar fruits should be thoroughly irrigated in the fall, as soon as the leaves are brown or fall off, then again in the spring as soon as the frost is out of the ground. The orchard should always be cultivated and kept free from weeds. Until the trees shade all of the ground, more or less crops that require cultivation may be grown among trees. The cultivation of fruit trees should be merely surface deep, so as not to disturb the rootlets which seek the very top of the soil for sunshine and air to support and mature the fruit. Too much water is as injurious as too little for fruit trees, same as for other crops. Orchards should never be irrigated later than the last of July, until the leaves fall off in the fall.

Small fruits and strawberries should be watered two or three times a week during the fruiting season, and often enough during the remainder of the season to prevent the ground from becoming dry.

Blackberries and raspberries do not require watering as often as strawberries, but the ground should be kept moist. Strawberries, blackberries and raspberries yield the best returns, if, in addition to irrigating by flooding, the vines and bushes are sprayed with water from a hose.

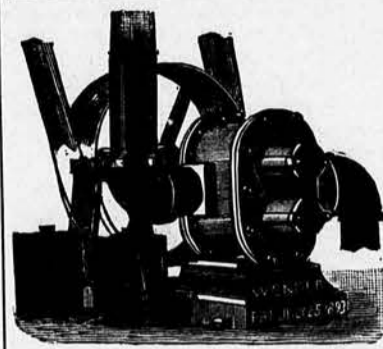
Wheat and rye of the winter variety.—The land to be sown to winter wheat and rye should be watered with a flooding equal to five inches of water before plowing the ground preparatory to seeding. As soon thereafter as ground is in order, plow and follow the plow with a harrow or other suitable implement to pulverize the clods, and an excellent plan will be to follow the harrow with a land roller. The ground will now be in excellent condition to seed, which should be done with a drill. No more water is required until just before freezing up time, when a flooding equal to three or four inches of water should be given the wheat and rye fields. Again in the spring, as soon as the frost is out of the ground, give another flooding of three or four inches. Once more only, and just when the



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first indication of heading is seen give the last flooding of three inches, which completes the wheat and rye irrigation.

For spring wheat, spring barley and oats, follow the same plan as for land to plant to corn. Prepare the land and seed in proper season. The first watering after planting should never be done until the young plants are of sufficient growth to shade the ground. Then apply three or four inches of water. Spring wheat and barley, like winter wheat and rye, must not be irrigated after heading.

Oats is the exception, and should be irrigated once after heading, when filling, to insure the best yield.

Meadows and pastures should be irrigated in the fall before freezing time by flooding with four or five inches of water, and again in the spring at the beginning of the growing season, and pastures should be watered from time to time during the balance of the season about once every three or four weeks, with three or four inches of water each time.

Red clover, white clover, Alsike clover, timothy, Kentucky blue grass, and similar grasses should be irrigated in a similar manner to that named for pastures, but meadows intended for hay should not be irrigated less than two weeks before harvesting.

Alfalfa when intended to be grown for seed should be irrigated same as other clovers, once after the frost leaves the ground in the spring, when four or five inches of water should be used. Then no more irrigation should be given until the seed crop is harvested. As soon as possible after harvesting either a seed crop or a hay crop of alfalfa, the fresh stubble should be irrigated with four or five inches of water. As a rule one irrigation is sufficient to mature either a hay crop or seed crop of alfalfa.

The most satisfactory and altogether the best method for irrigating a lawn is by flooding, which should be done once every two or three weeks, with two or three inches of water each irrigation.

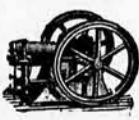
In conclusion, it must be borne in mind that the rainfall in the growing season should be taken into account. Since it is only necessary to supply the land with twenty-four inches of water during the twelve months, no more water should be used in irrigation than is necessary to make up the deficiency of the rainfall to complete the twenty-four inches. Too much water is always injurious instead of beneficial.

### An Accomplished Fact.

May 19 the Nickel Plate road inaugurated a new train service. The new summer schedule affords the same number of trains as before, including through service between Chicago, Cleveland, Buffalo, New York and Boston. The improvements also embrace the shortening of time of trains between all of the above cities. Colored porters in uniforms in charge of day coaches to attend to both first and second-class passengers. Rates always the lowest. For further information address your nearest ticket agent or J. Y. Calahan, General Agent, 111 Adams street, Chicago, Ill.

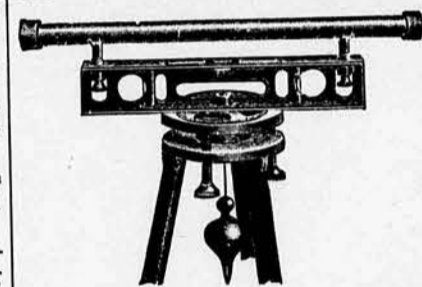
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### Leveling Instrument.

In laying off land for irrigation, a matter of first importance is to determine the levels. The KANSAS FARMER has desired to offer its patrons a reliable, low-priced instrument for this purpose, and has finally secured the one herewith illustrated. It is



manufactured by L. S. Starrett, a well-known and reliable manufacturer of fine mechanical tools at Athol, Mass., who warrants it to be true in every respect.

The price of the instrument is \$12.50 at the factory. By a special arrangement we are able to furnish it to subscribers, together with a year's subscription to the KANSAS FARMER, delivered at any express office in Kansas, charges prepaid, at the manufacturer's price. Send orders with money to KANSAS FARMER Co., Topeka, Kas.

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### Ottawa Chautauqua Assembly.

On June 16 to 23, 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.

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## IRRIGATION.

### Emigration Westward.

When emigration to the West began, as early as 1783, the leaders of the Eastern States were frightened. There still exist old pamphlets, not to say old caricatures, which ridicule the desire to go West. In a dozen forms the old story is still told of the emigrant from a Massachusetts town, who went to Ohio, carrying with him a jug of molasses, and came back boasting that he had sold his molasses for enough to pay for the molasses and the jug. On the right hand and on the left, every effort was made to persuade our people that they had better stay here and not trust themselves to the rich valleys of the Scioto and the Miami. Those who went and trusted themselves there were perfectly indifferent as to what was said to those who remained behind. And the caricature and the pamphlet are now left to the dust of antiquarian libraries, and only referred to as Mrs. Partington's broom is referred to, with which she tried to sweep back the waves of the sea.

All the same, however, little or nothing is known about the wave of emigration. De Tocqueville studied the matter with care, and gave to us the curious figure, which has been verified, that the average flow of the wave, was, in his time, seventeen miles in a year. A similar flow began from the Pacific coast eastward, after we took a foothold in Oregon and California, and the two waves have met each other.

There are people to-day who are as unwilling to encourage emigration to the West from New England as their grandfathers were. They are a little apt to be the people who own tenement houses, ten stories high, and would be glad to make them twenty stories high if they could get good rents for the nineteenth and twentieth stories. They are people who are living under the delusion that a city, because its population is large, is prosperous and rich. But the prophecies of these people, and the Partingtonism, does not in the least affect the purpose of those people who wish to emigrate. As Abraham Lincoln would have said, those people who want to go want to go, and those people who mean to go mean to go. In point of fact, roughly speaking, 2 per cent. of the population of the seaboard States move westward every year. It is a little curious, and it is satisfactory for us in Massachusetts, to observe that the attraction of Massachusetts to another set of people is, in its way, as great as, in its way, the attraction of the Western valleys. It would probably be fair to say that at this moment 280,000 persons born in Massachusetts are living in other States of the American Union, and that 280,000 persons born in other States are living in Massachusetts. The two fancies about meet each other. The account is about as broad as it is long.

It is for the 40,000 people who are going to move from Massachusetts westward this year that the persons interested in the unoccupied lands of the West propose to make arrangements, for their convenient and easy emigration. It is just as well to have these people "personally conducted" to the West as it is to have some delicate young lady who coughed twice last Wednesday personally conducted to San Diego by Messrs. Raymond & Whitcomb. It is just as easy to arrange that their emigration shall be comfortable and easy as it would be if they were all Latter Day Saints. At the interesting meeting held on Monday evening, the first colony club in Massachusetts was formed, not to make any particular colony for any particular place, but set on foot such arrangements as shall tend to the comfort of the forty thousand. The Colony club proposes to collect and circulate information on the subject of open-air life in the West. It proposes some such mutual assistance as has proved possible in the Chautauqua circles and other great reading circles of the country. It proposes the establishment of similar clubs in all the larger centers of New England. And it cannot be doubted that under prudent and wise management a satisfactory result may be secured.

To a certain extent, the indifference of the general government towards in-

terior emigration may be atoned for by such arrangements as these clubs may be able to make.—Edward Everett Hale, in *Boston Commonwealth*.

### Gossip About Stock.

D. P. Norton, of Council Grove, writes: "I have sold the yearling bull, Young America, to Mr. C. W. Sample, of Kingman, Kingman county, Kansas. He is a smooth, stylish son of Buccareer, that I think will please all who inspect him. I have two more of the same sort, good for service."

We are creditably informed that S. A. Sawyer, the well-known live stock auctioneer, of Manhattan, Kas., has spent a great deal of time this year in the interest of the swine business of Kansas, endeavoring to attend all the meetings and going among the farmers and advising them to patronize the breeders and improve their stock. The horse and cattle breeders of Kansas well know that for nearly fifteen years Mr. Sawyer has been instrumental in having much good stock dispersed in Kansas, and now that he is giving special work to the hog industry, we shall expect to see a great deal of good come from his continued efforts.

Mr. D. Trott, of Abilene, Dickinson county, is one of the many successful swine breeders to be found in the Sunflower State. He has paid special attention to the production of strong constitutional vigor, good feeders and prolific breeders, and the Polands and Duroc-Jerseys to be seen in the Ash Grove herd are the kind that can be relied upon in either the feed lot or breeding pen for money-makers. The herd was never seen in better health than at present, and the spring crop of pigs of both breeds is very promising. They are strong, lusty fellows, and are taking on vigorous growth. In the Poland-China division the youngsters are mostly by the following named boars: Victor Tecumseh, Black Model, Baron Wilkes and Excel. Victor Tecumseh is a fine, large, smooth hog, wide and deep in rib, with good head and well up on his feet. He is a great success as a breeder, stamping his pigs with his own many good qualities. Black Model is a son of Young Model, he by the \$250 boar, Admiral Chip. He shows splendid length, good hams, and puts a nice finish on his pigs. In the Duroc division we find the "red-coats" are the get of such popular sires as Trott's Big Bone, Kansas King, Farmer's Glory, Ruby Prince and others. Altogether he now has over 100 pigs, with fresh recruits arriving almost daily, and, judging from present indications, they are calculated to make many a satisfied customer, as the product of the Ash Grove herds have done in the past. Mr. Trott has shipped stock east, west, north and south, and the following letters are only samples of hundreds he has received from his customers: "The pig came through all right. I am much pleased with him. I think we have the making of a fine hog in him. Respectfully, Theodore Saxton, County Commissioner, St. Marys, Kas." Mr. Saxton is an old customer of the Ash Grove herd, and continues to buy where he gets good stock that gives satisfaction. Mr. A. R. Bardrick, of Miltonvale, Kas., ordered a sow, and on receipt of her wrote: "The sow is better than I expected." Another customer says: "The sow is received and I am well satisfied with her. Wishing you success, H. G. Gilmore, Riverdale, Mo." Mr. Wm. Huchenson, of Delavan, Kas., writes: "Received the pig the day you shipped him, and am very much pleased. If he breeds as well as he looks I shall be more than pleased. After dealing with you for more than nine years I am willing to recommend your method of doing business to my friends. I have sold a great many fine fat hogs since I have been dealing with you, for which I think you should receive a share of the praise." Mr. H. F. Hartman, of Marshfield, Mo., writes: "Received the pigs on the 18th and am well pleased with them. Every one that sees them thinks they cannot be beat." Besides the spring pigs, he now has on hand and ready to ship some fine fall boars that should not fail to please. He reports a big demand for pigs the get of Trott's Big Bone, and has a nice lot for his customers. Among the Poland-Chinas a handsome young sow was seen with a litter of fine pigs, and on inquiry we learned that she was I. X. L. Gem, bred by Mr. James Mains, of Oskaloosa, Kas., got by Tornado, and her litter by his fine boar, Excel. Mr. Trott is a well-informed, progressive breeder, and in order to keep in the lead he each year adds new blood to his herd, and is, therefore, prepared to furnish both his old and new customers with stock representing as good blood as can be found in the country. He gives the herd his personal attention and attends promptly to all correspondence and shipping orders. See advertisement on page 1.

Buckingham's Dye for the Whiskers does its work thoroughly, coloring a uniform brown or black, which, when dry, will neither rub, wash off, nor soil linen.

### Boston Excursions via St. Louis.

For National Christian Endeavor meeting excursion tickets to Boston will be sold via Vandalia-Pennsylvania lines July 5 to 9, inclusive. Return limit may be extended to August 3. For Knights Templar Conclave tickets will be sold August 19 to 25, inclusive, with privilege of extending limit to October 3. Railways in West and Southwest selling tickets via St. Louis will furnish them over these lines. Trains cross the Alleghenies at the highest point above sea level. Famous Horse Shoe Curve is on this route, which follows the Blue Juniata for miles amid pleasing scenes. Rock-balanced roadbed; no dust and dirt. Excursionists may enjoy stop-over privileges going, and may return direct or by circular route. From New York the trip may be made on palatial steamers of Fall River line through Long Island sound or by rail. Address Brunner, 509 Chestnut street, St. Louis, for details.

### A Thresher for the Farmer.

The threshing season will soon be here again, and we would recommend to our readers the small Columbia Thresher and Cleaner, manufactured by the Belle City Manufacturing Company, Racine, Wis., whose advertisement will be found in this paper. This small thresher was built mainly for the individual farmer or for a few neighbors who want to buy such an outfit together. This firm, well knowing how difficult it is in many sections to secure the help needed to run the large outfits, have built a machine with which the farmer can do his own threshing at the least possible expense. It is light-running and can be used with less power and less help than any other machine ever used. It can be run with any kind of power, including tread power, four, six, eight or ten horse-sweep power, doing work according to the amount of power used, the condition of the

of stock and hurts none. No snow drifts against it; it does not break in winter nor sag in summer.

The first piece put up stands just as nicely after three years' use as it did the day it was put up. There is not a break or kink in it. It has not had a single repair yet nor is it likely to for many years to come.

I am a practical farmer and have seen and tried nearly all kinds of fence, but the Page is the fence for me. It is strong, high, efficient and durable and takes care of itself under all circumstances and conditions. Any one wanting further testimony can get it by calling on me at my farm.

Monticello, Wis.

D. W. DIMMICK.

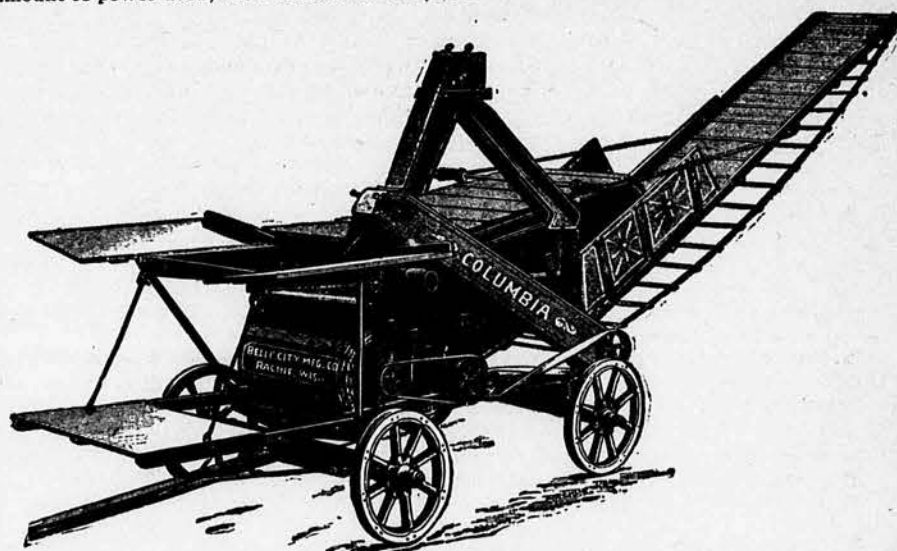
### Baltimore Excursion via St. Louis.

Connecting lines in West and Southwest will sell excursion tickets to Baltimore via St. Louis over Vandalia-Pennsylvania lines, or they will be furnished by Brunner, 509 Chestnut street, St. Louis, July 16 and 17, good returning until August 5, inclusive, account Baptist Young People's Union convention. Tickets may also be obtained at 221 North Broadway and at Union Station, St. Louis. Ask for them over Vandalia-Pennsylvania lines. Three trains run daily to Baltimore from St. Louis Union Station over these lines, the shortest route. Ask Brunner, 509 Chestnut street, St. Louis, about the convenient, first-class service and the pleasure to be experienced crossing the cool Alleghenies and famous Horse Shoe Curve.

### Half Rates.

Half railway rates to Pan-American Congress of Religion and Education, at Toronto, Canada, July 18 to 25, 1895.

The Pan-American Congress of Religion and Education will be held at Toronto, Canada, July 18 to 25, 1895. Rev. Samuel G. Smith, D. D., of St. Paul, Minn., is President. The congress will be composed



A THRESHER FOR THE FARMER—THE COLUMBIA.

Manufactured by BELLE CITY MANUFACTURING COMPANY, Racine, Wis.

grain, etc. The cost of purchasing, operating and moving the large steam threshers with their modern appliances, is so great that in neighborhoods where jobs are small and roads poor, the business of threshing with the large outfits cannot be made to pay. The Columbia is a great grain-saver, and parties operating such a machine need not be in a great hurry, as is usually the case with large machines, but can take more time to thresh and save their grain. This small machine weighs only about 2,500 pounds and can be taken anywhere a wagon can. The above named firm also manufacture the famous "Belle City" Fodder and Ensilage-Cutters.

### The Nickel Plate's New Trains.

The new service on the Nickel Plate road, which went into effect Sunday, May 19, has met the approval of the traveling public. On all sides are heard expressions of universal satisfaction regarding the efforts which this popular road is making in the interests of its patrons. Three fast trains are now run in each direction daily. Superb dining car service. No change of cars for any class of passengers between Chicago, New York and Boston. Uniformed colored porters in charge of day coaches on through trains are constantly at the disposal of our patrons and are especially appreciated by ladies traveling alone. This extra service assures scrupulously clean cars en route. Lowest rates on all trains. For further information confer with your nearest ticket agent or address J. Y. Calahan, General Agent, 111 Adams street, Chicago, Ill.

### A Full-Grown and Ripe Testimonial.

I have about 400 rods of Page fence on my farm, and expect to have 400 rods more soon. I have had it in use on my farm three years, and have tested it with all kinds of farm stock and in all kinds of weather common to this country. I find it a very satisfactory farm fence. It turns all kinds

of representatives from every country, province and State in North and South America, including Protestants, Roman Catholics and Hebrews. The congress will consider the great moral and social questions of the day. Many of the highest dignitaries of church and state, and prominent philanthropists, have promised to participate.

The congress will have the following sections: (1) Authors, Editors and Publishers; (2) Education, including Colleges and Church Schools; (3) Philanthropies, Hospitals, Asylums, Homes, Reformatories, etc.; (4) Woman's Work, Temperance Rescue Work, etc.; (5) Denominational Section; (6) Young People's Societies and Sunday Schools, Kindergartens, Missionaries, etc.

It is expected there will be 7,000 delegates. Cities, counties, churches and benevolent societies are asked to send delegates. Each section will hold a session each afternoon, besides the general sessions forenoon and evening.

The terminal railways leading to Toronto have granted a half-fare rate (plus \$1 Pan-American membership fee), and all other railways in North America are asked to grant the same rate. Board and lodging at private house \$1 and up, at hotels \$2 and up. Toronto is a charming city on Lake Ontario, forty-five miles from Niagara Falls. Very low excursion rates to all points of interest by lake, river and rail.

For particulars about rates, routes and program, write to General Passenger Agent of nearest railway, or address S. Sherin, Secretary, Headquarters, Rossin House, Toronto, Ontario, Canada.

Any of our subscribers who are about to renew subscription will find something interesting by reading the advertisement of "Samantha at Saratoga." If you have already renewed your subscription it will tell you how to get the book at the reduced rate.

## 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.

### A BACHELOR OF FORTY-FIVE.

At forty-five! Ah, can it be  
The rapid steeds have reached this stage,  
That time has meted out to me  
The years of man's maturer age;  
And I can call mine own at this  
No better half, no family live,  
But live in so-called single bliss,  
A bachelor of forty-five?

I fain would take the ladies' way,  
And, as to age, deny the fact;  
But 'tis an awkward game to play,  
These registrars are so exact.  
No! I'll admit it like a man,  
Nor foolishly with figures strive,  
But face the truth, e'en as I can,  
A bachelor of forty-five.

I never meant it should be so;  
And how the matter happened thus,  
Indeed, I really do not know,  
Nor how the subject to dissonance.  
I always loved the ladies, but—  
'Tis wondrous how these "buts" contrive  
To keep a man from wedlock shut,  
A bachelor of forty-five.

When five-and-twenty was my date,  
Had any dismal seer foretold  
That this would be my hap and fate,  
I should have held him false as bold;  
More likely were it had he said  
That now I should not be alive,  
Than that I should be still unwed,  
A bachelor of forty-five.

Ah yes! When beams youth's radiant sun,  
When faith is strong and hope is high,  
Man weens not how his path may run,  
Nor how the promised land may lie;  
He weens not to what unthought goal  
Resistless fate his life may drive,  
And make him—poor unmated soul!—  
A bachelor of forty-five.

But cheerful hope is with me still—  
Hard were my case if hope had fled;  
Good fishes yet the waters fill,  
And there are damsels still unwed;  
And in some matrimonial sea  
Perchance I yet may daring dive,  
And be no more, though still I be,  
A bachelor of forty-five.

—Chambers' Journal.

### ABOUT BAD TEMPER.

Very Often It Is Accompanied by Many Sterling Qualities.

It may sound paradoxical to say so, but it is true, that the best people sometimes have the worst tempers. In the same way, saints are often those who have overcome the most sin. Persons who feel deeply, whose sensibilities are keen and strong, rarely find it easy to maintain a uniform placid exterior, and the struggle between their passions and their calmer wisdom is often a terrific one. There are others who never seem to be troubled—who are amiable with an amiability that it seems impossible to ruffle—who never show any signs of irritation, but are always equable and cheerful. Such persons are doubtless much to be admired, but their society becomes in time not only exceedingly monotonous, but even exceedingly aggravating. Try as we will, we cannot get them to show fire. They are devoid of enthusiasm, as they are incapable of anger. Nothing disturbs that serene stillness, which is certainly not the stillness of death. A hearty quarrel is an impossibility. Whatever we may do or say, they never get cross with us, or call us objectionable names. All this is undeniably irritating. It is quite refreshing to pass from the company of one of these to a warm, full-blooded individual of susceptible passions. It is a treat to feel that the hand which grasps ours could, if need be, strike hard. It may sound very paganish to say so, but we do love a little spice of human nature. Sturdy truth and faithfulness generally lie behind some capability of honest anger. We know that those friends who often seem most cross and irritable are really our staunchest and most reliable. Not that bad temper in itself can ever be an admirable thing, but that it is often accompanied by very sterling qualities. It generally coexists with strength of character and independence of spirit. Mean and treacherous persons are frequently amiable; butter will not melt in their mouths, nor at their hearts.—Household Words.

### Silver Tray for Spectacles.

Among new silver trifles is a spectacle tray. It bears a very realistic representation of a pair of folded glasses whose burnished and raised oval surfaces look almost exactly "like real."

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

### EMPRESS OF JAPAN.

A Native Artist Pictures Her Making Lint for the Wounded.

This quaint sketch of the Japanese empress was made by a native artist, who loses every idea of grace when he deals with European costume. It is not much to be wondered at in the case of this fair sovereign, whose foreign clothes are of the ugliest fashion of seventeen years ago. What ignorant and vulgar person furnishes these garments it would be interesting to know. Probably the unsalable costumes of London dressmakers, costumes put together in the late seventies, are un-



THE EMPRESS OF JAPAN.

loaded upon trusting oriental palace officials by some ingenious introducer of civilization.

It is a pity to so spoil the really charming personality of the empress, who used to be bewitching in the pretty clothes of her own land. This drawing represents the sovereign and her ladies engaged in preparing lint for the Japanese wounded—a most womanly occupation.

### DRIVING AWAY FLIES.

Oil of Lavender Is Far More Serviceable Than Screens.

"I never use window screens," said a wise housekeeper the other day, "because I have a fancy that they shut out all the air in hot weather, and besides, they serve to keep the flies in the house equally as well as to keep them out."

"But I never see a fly in your house," said her friend. "How do you manage it? For my part, I must confess that, screens or no screens, my summer means one long battle with the little pests."

"My remedy is a very simple one," said the good housekeeper, "and I learned it years ago from my grandmother, when I used to watch her putting bunches of lavender flowers around to keep the flies away. My method is simpler. I buy five cents' worth of oil of lavender at the drugstore and mix it with the same quantity of water. Then I put it in a common glass atomizer and spray it around the rooms wherever flies are apt to congregate, especially in the dining room, where I sprinkle it plentifully over the table linen. The odor is especially disagreeable to flies, and they will never venture in its neighborhood, though to most people it has a peculiarly fresh and grateful smell."

"I shall certainly give it a trial," said the other woman.—Philadelphia Press.

### Walter Scott's Pat Rejoinder.

Mr. J. L. Macadam, the illustrious Scotchman who invented the kind of paving which bears his name, is said to have been a guest at a large dinner given in honor of Sir Walter Scott. Being asked to respond to a toast, Mr. Macadam rose, and at the end of his speech proposed the health of "the great Sir Walter Scott, the colossus of literature!"

In an instant Sir Walter was on his feet, and lifting his glass, exclaimed: "Here's to the great Mr. Macadam, the colossus of roads!"

### Why She Didn't Laugh.

A little 8-year-old girl went to a children's party. On her return she said to her parents: "At the party a little girl fell off a chair. All the other girls laughed, but I didn't." "Well, why didn't you laugh?" "Cause I was the one that fell off."—Tid-Bits.

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

# Royal Baking Powder

## ABSOLUTELY PURE

### FANCY TABLE LINENS.

Every Article Needed Is Made a Work of Art Nowadays.

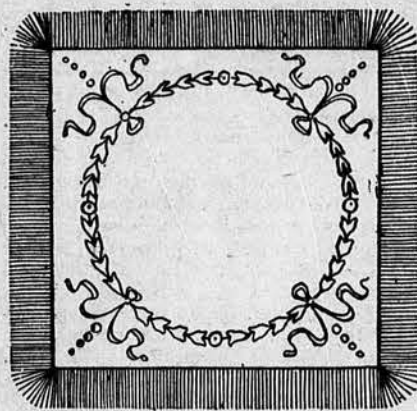
A woman does not realize what fascination there is in fancy work until she begins to make it. The particular branch of it included in linens has been improved until every little article needed in the home may become a work of art. Not only doilies, tray cloths, center-pieces, etc., but tablecloths and napkins are among the things that are beautified by needlework. But this article will relate only to fancy work of the doily type.

Embroidery is the proper thing now for such articles. The designs are flowers, fruit, vines, leaves, or, if quite advanced in the art, classic designs. But the simpler ideas are more practical for our purpose.

The woman in the country has a great advantage over her city sister in the way of getting beautiful and at the same time natural patterns from which to work. And with a pattern from which to draw, she may make designs on the linen which will be much more satisfactory than those purchased ready stamped.

As to the kind of linen to use, for a piece that is to be hemstitched get butcher's linen. For center-pieces and doilies satin damask is best. The linen may be purchased by the yard. After making the articles the size wanted, allowing for the hemstitch, it is ready for the design. Take the picture of the flower, leaf, or whatever it is desired to draw; then place a sheet of transfer paper on the linen, lay the pattern over that, and with a pencil or crochet hook trace around pattern. Upon lifting the paper from linen the design will be there, clearly stamped in delicate lines, ready for the needle. An ingenious woman will evolve many original designs from her patterns by using them in combination.

The latest idea for square pieces is to buttonhole stitch the goods about one inch from the edge all the way around, and then to fringe out the edge to the stitching. A pretty centerpiece of that style is shown in cut. Other pieces are buttonhole stitched around a scalloped edge. A pretty idea for making small



A FRINGED CENTER-PIECE.

doilies is to make a large leaf or flower, a pansy, for instance, and draw the pattern on linen. Then buttonhole stitch around the edges, and cut out close to stitching. This leaves a perfect pansy shape, stitched in pansy colors, and a doily large enough for pepper and salt cellars. A lovely one seen recently was an oak leaf worked in the shades of an autumn leaf. One-fourth yard of satin damask (cost twenty-five cents) will make four of these.

A hemstitched lunch cloth with pink roses embroidered around inside of stitching is very dainty. A large hemstitched tray cloth had marguerites embroidered in opposite corners which looked almost as natural as their living sisters.

There is no check to the imagination in doing this dainty fancy work, but the variety now shown by the large stores would almost lead one to think that there was nothing left to be thought of.—Prairie Farmer.

### INTRODUCE THEM.

Boys and Girls Should Be Presented Formally to Adult Visitors.

It is a common oversight in too many households not to introduce the children to visitors. Guests are formally presented to the adult members of the family, but the younger boys and girls are either ignored altogether, or else introduced in a general way without giving their individual names. This course is almost certain to result in awkwardness and constraint on their part when grown. There is a difference between putting children forward unduly and giving them their just meed of recognition. And pray take pains, in making introductions, to speak the names distinctly, and, above all things else, do not omit their mention. How many of us have been annoyed to have a hostess greet an intimate friend, to whom we were entire strangers, with some such salutation as: "O Henry, so pleased to have you meet Miss Blank," leaving us to discover his surname as best we may. It is not a bad plan for the family to rehearse by themselves some of these little social formalities.—Congregationalist.

A healthy appetite, with perfect digestion and assimilation, may be secured by the use of Ayer's Pills. They cleanse and strengthen the whole alimentary canal and remove all obstructions to the natural functions of either sex, without any unpleasant effects.

### Seashore and Mountain Resorts.

Atlantic City, Cape May, Asbury Park, Ocean Grove, Long Branch and famous resorts of the New Jersey coast are reached via Vandalia-Pennsylvania lines, the direct route from St. Louis by which to reach Newport, Narragansett Pier, Cape Cod, Martha's Vineyard, Nantucket and popular watering places along the Atlantic from Chesapeake Bay to Maine. Cresson, Bedford Springs, Edensburg, Altoona and other retreats in the Alleghenies are located on this route, which also leads from St. Louis to the White mountains, the Adirondacks, Watkins Glen, Mt. Desert Island and places of summer sojourn in eastern New York and New England. Address Brunner, 509 Chestnut St., St. Louis, for details.

### Excursions to the East.

Excursion tickets via St. Louis will be sold by connecting railways in West and Southwest good over Vandalia-Pennsylvania lines as follows:

To Baltimore, July 16 and 17, good returning until August 5, account B. Y. P. U. meeting.

To Boston, July 5 to 9, inclusive, extreme return limit August 3; account Christian Endeavor National Meeting. To Boston, August 19 to 25, inclusive, for Knights Templar Conclave; extreme return limit October 3.

Tickets may also be obtained on above dates at city ticket office, 221 North Broadway, and at Union Station, on Tenth and Chestnut streets, St. Louis. For detailed information apply to Brunner, 509 Chestnut street, St. Louis, by letter, telegram or in person.

### GROUND MOLES

Their habits and how to catch them. A book Free. L. H. ALMSTED, Hasbrouck Heights, N.J.

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

Tastes good as it goes down, does good when it gets down.

## HIRES' Rootbeer

makes the children rosy-cheeked, keeps the parents healthful, helps the old folks carry their years lightly. A 25c. package makes the whole family happy.

OHAS. E. HIRES CO., PHILADELPHIA.

## The Young Folks.

### TRIBUTE

To the Soldiers Who Fell in the Battle of the Blue.

We stand here to-day in the presence  
Of all that remaineth to mortals,  
Of heroes who perished in battle,  
When treason's hot plowshares were pushing  
Down under the solid foundations  
Of liberty's temple, and breaching  
The bulwark and fortress of Freedom.

These men whom we honor and cherish,  
Inscribing their names upon granite,  
Which, slow in its impulse to crumble,  
Shall bear them on down through the ages,  
Where heroes whose unmeasured manhood,

when the parrot broke gayly into the national anthem in a voice so fine that the king delightedly reentered the room and offered O'Keefe a princely sum for so gifted a bird.

O'Keefe loved his feathered friend too dearly to part with him, and tucking Polly close to his breast, under his



PLAYING WITH THEIR ADOPTED KITTENS.

shabby coat, begged his majesty's leave to keep him.

When the parrot died the British museum bought the skin and stuffed it, and to-day Polly is to be seen in the museum at Oxford.

A learned Philadelphia Polly sang charmingly both in German and English. He loved to sit in a sunny back window, and toss seed and crumbs to hungry city sparrows; not only were his feelings deeply hurt, but he would scream and scold, unless permitted to bless all the family good night and good morning.

He enjoyed the companionship of a mate who laid several eggs, but could never hatch them, so in despair they set out to adopt some children.

Poking about the room one day they chanced upon a box in which were three tiny gray kittens, with which the mother parrot was delighted.

Though the kittens struggled she gathered them under her wings and after awhile the cat gave her babies entirely into the bird's care.

The parrots learned to drink milk at the same saucer with their adopted children and the kittens trotted contentedly about at their foster parents' heels, and had rough and tumble games together on a sunny back porch.—Boston Globe.

### These Ants Keep Slaves.

It is now a well-established fact that several species of ants keep slaves, which are "bondsmen" and "bondswomen" in every sense of those terms. Sir John Lubbock describes a species which live in the valley of the Amazon and which have enslaved a neighboring tribe of ants and compel them to perform all kinds of menial labors, even to cleaning and feeding their masters. These opulent slaveholders have become so lazy that they will actually starve before they will feed themselves, even though food be within easy reach.

### A Reminder of War Times.

Old Bill Jones and Young Bill of Delano, Ark., built a fire on Pea Ridge battlefield to boil their morning coffee. When an unexploded shell under the fireplace blew up both Bills were thrown out of their composure, but saved their lives.

### A Chance to Make Money.

The times are hard, but there always seems to be opportunities for those who are willing to work. In the past month I have made \$175 above all expenses, selling Climax Dish-Washers, and have attended to my regular business besides. I never saw anything that gave as general satisfaction. One should not complain where they can make over \$6 a day, right at home. I have not canvassed any, so anxious are people for Climax Dish-Washers, that they send after them. Any lady or gentleman can do as well as I am doing, for any one can sell what every one wants to buy. I think we should inform each other through the newspapers of opportunities like this, as there are many willing to work if they knew of an opening. For full particulars, address the Climax Manufacturing Co., Columbus, Ohio. After you have tried the business a week, publish the results for the benefit of others.

### DANCED WITH A KING.

Two Little Americans at the Court of Christian of Denmark.

Virginia Yeaman Remnitz, in St. Nicholas, tells a true story of the adventures of two young Americans at the court of the king of Denmark. They were children of the American minister, and had been invited to a children's party at the palace. Here is what followed:

It was to Ellen a never-to-be-forgotten night. The crowds of happy children; the great room, brilliantly lighted; the strains of music; the presence of a real king and queen—all combined to make the scene a fairy land, wherein events took place which made Ellen feel herself a sort of fairy queen.

The king opened the ball with Ellen. Hardly understanding the honor, some sense of it nevertheless thrilled her childish heart. She could not even see his face, so tall was he, but his strong arms bore her around and around, she knew not how, for Ellen danced with as little precision and method as the leaves on a tree, or the ripples in a lake. Yet all through her being she felt that she was dancing with the king. It seemed but fitting, after that dance, to find herself seated on the sofa between the king and queen. With royal disregard to the claims of other small guests, and with royal indifference to the effect upon little Ellen, they lifted her up between them. She looked pretty, natural and unconscious, and was herself a little queen in all her ways! While Ellen sat there, too happy and pleased to feel proud, the other children danced on.

With no thought of imitating their elders in manner or motion, the young dancers abandoned themselves with childish freedom and simplicity to the enjoyment of the hour. Those who had never been trained in the different steps adapted their movements to the promptings of happy hearts and light feet, and were as contented as the



"PLEASE, MR. KING, DON'T BOVER ME; I'M SO SLEEPY."

others. And little Ellen rested comfortably between the king and queen until she was ready to dance again.

The evening wore on, and Ellen was overcome with weariness and sleep. Slipping away from the children, who now were whirling around in some dizzy game, she threw herself on a couch. Just as the scene grew misty to her eyes and the dazzling events of the evening began to weave themselves into the suggestion of a dream, she was aroused by some one asking: "Where did you get your pretty pink slippers, Ellen?" and she opened her eyes. Why was the king sitting beside



Kidney Balm. I used at first two bottles, bed and go about my household duties; so the gravel. In all I passed five stones, taking the Balm occasionally to make gratitude to God for my restoration to health to your Liver and Kidney Balm. It is a g

Yours respectfully

At the request of the writer of the above the name is omitted in strict confidence to any who wish to investigate

## Strange

waste of harness and shoe-leather! Vacuum Leather Oil is best. 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.

her and talking to her when she was so sleepy? She had a confused idea that he ought to put on his crown, and sit on a throne. "Please, Mr. King, don't bover me; I'm so sleepy," and Ellen, turning her face upon royalty, slipped away to her pleasing dreams. "Little Ellen, little Ellen," said the king, musingly, "it is not often I hear the truth so plainly told, and it is refreshing to my ears."

With the blood full of humors, the heated term is all the more oppressive. Give the system a thorough cleansing with Ayer's Sarsaparilla and a dose or two of Ayer's pills, and you will enjoy summer as never before in your life. Just try this for once, and you'll not repent it.

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## KANSAS FARMER.

ESTABLISHED IN 1863.

Published every Wednesday by the  
KANSAS FARMER COMPANY.OFFICE:  
No. 116 West Sixth Avenue.

SUBSCRIPTION PRICE: ONE DOLLAR A YEAR.

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Topeka, Kansas.

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

"The nations of the world," says *American Investments*, "are all in the hands of their creditors, and to a large extent must come under their dictation as to money systems and financial operations."

A handy little book is the "Farmers' Institute Question Box on Cattle and the Dairy," price 25 cents. Short and easily-understood answers are given to numerous questions on "Cattle, Their Care and Management," "Feeding and Food Rations," "The Dairy, Milk and Butter," and "The Dairy, Cheese-Making." Sent on receipt of price by KANSAS FARMER CO.

It has been suggested that the hard winter wheat of the Southwest is deteriorating annually, by becoming softer, and that on this account it may be expedient to import new hard winter wheat seed from Russia. The KANSAS FARMER requests those who have experience with this wheat to report by letter or postal card their observations as to whether there has been any change in this wheat in any respect.

Clerks in KANSAS FARMER office have been busy during the last few days addressing the wagon load of Agricultural Department bulletins which were placed at our disposal by the Secretary on request of Senator Peffer. Those who desire them should apply at once. Following is a list, any or all of which can yet be furnished free of charge to those who apply, either in person or by postal card, at this office: No. 3, "Culture of the Sugar Beet;" No. 9, "Milk Fermentations;" No. 15, "Potato Diseases;" No. 16, "Leguminous Plants;" No. 19, "Important Insecticides;" No. 21, "Barnyard Manure;" No. 22, "Feeding Farm Animals;" No. 24, "Hog Cholera;" No. 26, "Sweet Potatoes;" No. 27, "Flax for Fiber and Seed;" No. 28, "Weeds, and How to Kill Them."

## PRICES OF WHEAT AND OTHER COMMODITIES.

The fall in the price of wheat, which, early in the present year, culminated in the lowest prices on record, has been discussed in various connections and has been the basis of many predictions as to the future of the great bread-making cereal. There have been so many influences affecting prices in this country that careful writers have found the English quotations preferable for comprehensive analysis.

The Statistician of the United States Department of Agriculture remarks in a recent report that the well-known tables of Mr. Augustus Sauerbeck, of London, present the prices of fifty-six commodities, embracing grain, rice and potatoes; animal food; sugar, coffee and tea; minerals, textile fabrics and "sundry materials" (including hides, leather, tallow, oils, soda, nitrate, indigo and timber). Mr. Sauerbeck's quotations, which have been collected from trustworthy trade journals or from reports of leading firms, cover the period from 1846 to 1894, inclusive. Taking as a standard of comparison the average prices for the eleven years from 1867 to 1877, inclusive, and calling that average 100, he constructs from his quotations a table of relative prices, in which the price of each article is indicated by what is called an index number, which number bears the same relation to 100 that the quoted price, or the average price for any particular year or other period, bears to the average price of the same article for the eleven years above indicated (1867-1877). In a few instances two or more items are consolidated and their relative price indicated by one index number, and the total number of articles whose price is indicated by index numbers thus becomes forty-five instead of fifty-six.

As the average for each article for the eleven years—1867-1877—is indicated by 100, the total expressing the general average for the whole forty-five articles is 4,500. The total expressing the same average for 1894 is 2,832, from which it appears that the average prices for 1894 amounted to about 63 per cent. of the average for 1867-1877. On the other hand, the English *Gazette* price of wheat for 1894 averaged only 41 per cent. of the average *Gazette* price for the same eleven years, the decline being 59 per cent. as compared with a general decline of only 37 per cent. The fall in wheat is thus seen to be nearly one and three-fifths times as great as the general fall in prices, as indicated by Mr. Sauerbeck's list of commodities. It may be observed, too, that the general fall of prices as above stated does not differ materially from that obtained by Mr. Sauerbeck by two different methods of weighting the different commodities according to their relative importance, one of these methods giving 62 and the other 64.3, instead of 63, as the general average for 1894.

It may be noted that while the index number for wheat for 1894 is 41 that for flour is 48. That is, the price of the latter, as compared with the average for the eleven years—1867-1877—is over 17 per cent. higher than that of the former. It is also noteworthy that the relative price of barley is identical with the general average (63), while the relative prices of oats, maize, potatoes and rice do not differ from it widely, their index numbers being 66, 61, 60 and 58, respectively.

Among other articles that approximate the general average are the following, whose index numbers are given in connection with them: Iron, Scotch pig, 62; common bars, 59; tin, 65; hemp, 59; jute, 66; hides, 64; palm oil, 63; linseed oil, 65; nitrate of soda, 66. Among articles which fall materially below it are sugar (48), tea (47), copper (53), lead (47), cotton (middling uplands, 42; fair Dhollerah, 39), wool (Australian, 55; English Lincoln half hogs, 51), silk (Tsatlee, 43), and soda (46). Petroleum is among the articles which have fallen most largely, but its price in 1894 is given in comparison with its average price for 1873-1877, instead of the average for the eleven-year period 1867-1877. Among articles whose prices

are considerably above the general level are beef (prime, 80; middling, 74), mutton (prime, 87; middling, 76), pork (85), bacon (80), butter (78), coffee (117), coal (Wallsend Hetton in London, 75; average export price, 84), leather (78), and tallow (82).

A comparison of wheat and flour with the general average for the forty-five articles included in Mr. Sauerbeck's list gives us the following figures as to relative prices by years from 1846 to 1894, inclusive, the numbers, as before, representing percentages of the average price for the eleven years from 1867 to 1877. As Mr. Sauerbeck does not give actual price quotations for American wheat for the years prior to 1871, this comparison refers to the prices of English wheat only.

Relative prices of wheat and flour compared with the average for Mr. Sauerbeck's forty-five articles. [Average for 1867-1877=100.]

Year.	Wheat.	Flour.	Average for the 45 articles.
1846.....	100	111	89
1847.....	123	126	95
1848.....	93	100	78
1849.....	81	89	74
1850.....	74	80	77
1851.....	71	78	75
1852.....	75	85	78
1853.....	97	113	95
1854.....	133	141	102
1855.....	137	148	101
1856.....	127	135	101
1857.....	103	111	105
1858.....	81	87	91
1859.....	80	89	90
1860.....	98	104	98
1861.....	102	113	101
1862.....	102	102	103
1863.....	82	89	105
1864.....	74	83	101
1865.....	76	85	102
1866.....	91	98	100
1867.....	118	126	99
1868.....	117	117	98
1869.....	86	89	96
1870.....	104	98	100
1871.....	105	102	109
1872.....	108	104	111
1873.....	102	102	102
1874.....	85	87	96
1875.....	85	89	95
1876.....	104	98	94
1877.....	85	83	87
1878.....	80	78	83
1879.....	81	85	88
1880.....	85	87	84
1881.....	83	87	84
1882.....	83	87	82
1883.....	76	78	76
1884.....	65	65	72
1885.....	60	63	69
1886.....	57	61	68
1887.....	60	61	70
1888.....	58	63	72
1889.....	55	63	72
1890.....	59	72	72
1891.....	56	61	68
1892.....	48	54	68
1893.....	48	54	68
1894.....	41	48	63

## GIVE THE FACTS.

Anent the editorial in last week's KANSAS FARMER on "Great Expectations," the following statement from Hon. M. B. Tomblin, of the State Board of Irrigation, appeared in the *State Journal*:

"A sixteen-foot, back-gear, modern steel windmill will operate a six-inch tubular well at a depth of 200 feet and will pump enough water to irrigate at least ten acres of ground; this same mill will, at a depth of 100 feet, operate a pump that will irrigate at least twenty acres of ground, and at fifty feet, if the water supply is sufficient, it will pump enough to irrigate forty acres. This is no theory or experiment, but is actually being done in various parts of the State."

The KANSAS FARMER is anxious, above all things, to convey accurate information on all subjects treated in its columns, and has asked Mr. Tomblin for specific statements of his knowledge of the subject. To make this information as comprehensive as possible, we ask all readers who have, either from experience or observation, any knowledge of the subject to write us as to the following schedule of points:

1. Name of irrigator.
2. Postoffice.
3. Depth to water.
4. Size of windmill.
5. Dimensions of pump.
6. Size of well.
7. Years irrigated.
8. Depth of water applied in summer—
9. Depth of water applied in the year—
10. Number of irrigations per year.
11. Crops raised.
12. Average gross crop value produced.

There are many irrigators who have started with great expectations but to have them disappointed as to amount of water supplied by the plant purchased. Definite information will prevent waste of money, and by showing what can be done promotes the healthy development of irrigation in the State.

## OUR AGRICULTURAL COLLEGE.

The thirty-second annual catalogue of Kansas Agricultural college, for the years 1894-95, shows this fine institution to be in a prosperous condition. The number of students enrolled is 572, of whom 361 are gentlemen and 211 ladies. Their classification as to advancement is: Postgraduates, 30; fourth year, 64; third year, 89; second year, 108; first year, 276; special, 5. From sixty-six counties in Kansas came 546 of these, while 26 came from fourteen other States and 20 applicants were not enrolled.

The number of graduates up to 1895 is 397, of whom 136 are women. Graduates previous to 1877 pursued, with two exceptions, a classical course, and received the degree of bachelor of arts. Since 1877, all have received the degree of bachelor of science, after a four years' course in the sciences, with good English training.

Of the 261 men, six are deceased, and the remainder are reported in the following occupations:

Farmers.....	38
Fruit-growers, nurserymen and gardeners.....	13
Dairymen.....	2
Professors and instructors in agricultural colleges.....	5
Assistants in agricultural experiment stations.....	6
Assistants in United States Department of Agriculture.....	3
Secretary State Board of Agriculture.....	1
Teachers and students of special sciences.....	13
Veterinary surgeons.....	3
Mechanics.....	5
Civil, electrical and mechanical engineers.....	6
Contractors and builders.....	3
Architects and draughtsmen.....	21
General business men.....	11
Merchants.....	3
Printers.....	8
Telegraph operators and railroad agents.....	3
Photographers.....	1
Superintendents of public schools.....	6
Teachers in public schools.....	44
Teachers in Indian schools.....	3
Students in other institutions.....	10
Officers in United States army.....	2
Observers in United States weather service.....	1
Physicians and students of medicine.....	7
Druggists.....	2
Dentists.....	14
Editors.....	8
Ministers.....	1
Secretary U. M. C. A.....	23
Lawyers and students of law.....	6
Officials and official clerks.....	4
Railway postal clerks.....	1
Lecturer.....	1
Publisher.....	2
Irrigation horticulturists.....	2
Unknown.....	2
Total.....	280
In two occupations.....	25
	255

Of the 136 women, five are deceased, and the remainder are occupied as follows:

Housewives.....	48
At home.....	14
Instructor in sewing.....	1
Teachers in household economy.....	7
Teachers in public schools.....	28
Bookkeepers.....	3
Teachers and students of special sciences.....	13
Teacher of music.....	1
Teachers of art.....	2
Clerks or stenographers.....	3
Printer.....	1
Milliners and dressmakers.....	2
Assistant librarian.....	1
Hospital nurse.....	1
Students in other institutions.....	7
Editor.....	1
Unknown.....	1
Total.....	134
In two occupations.....	3
	131

At the time of the severe late frosts which did so great damage to early fruits and vegetables, I. L. Diesem, of Garden City, found his field of strawberries frozen so hard that the plants broke on being disturbed. He turned on the water and thawed them out and had the satisfaction of harvesting a bountiful crop.

One dollar and sixty-five cents will pay for the KANSAS FARMER and the twice-a-week New York World. Everybody should read.

## Lathyrus Sylvestris.

EDITOR KANSAS FARMER:—C. J. Norton, in a late number of FARMER, asks me to give my experience with *Lathyrus sylvestris* Wagneri, or flat pea.

In 1894, I bought of Barteldes & Co., Lawrence, Kas., one-fourth pound of the seed of the flat pea. About April 1 planted in rich, loamy soil, well prepared, in furrows made with the hoe, one and one-half inches deep, dropping a pea every two inches; covered with the hoe and pressed firmly. In from twenty to thirty-six days it seemed as though every pea had grown. I kept the ground clean and loose by frequent hoeing. It made a good growth—stems from twelve to fifteen inches long. Stood the drought of last summer well. The winter did not injure it, nor did the drought of this spring. It started to grow earlier than clover this spring. The stems at this date (June 1) are two feet long, falling over and filling the space solid between the rows. In growing it sends down a large, long tap-root, throwing out large side roots near the surface. I dug one plant up to-day and the tap-root was two and one-half feet long. I think it is a drought-resister and in the ground to stay. There are three rows, each fifty yards long. Cut green and fed to stock that have been on grass, sheep eat it, hogs, horses and cattle refuse it. As hay, sheep eat it readily; horses fed it at noon, that run on grass when not at work, eat sparingly; cows a little.

When cut, it sprouts up quickly. I have let the most of it stand, hoping that it would bloom and make seed, but not a flower yet. I think it worthy of a trial. WM. ROE.

Vinland, Kas.

## Salt for Out-Worms.

EDITOR KANSAS FARMER:—I notice there is some complaint that cut-worms are injuring the corn in some sections. I have never but once been seriously troubled with them, and that did not prove to be very serious, though it seemed that way when I first discovered what they were doing, or had done.

My corn field that year was at the back end of the farm, and after it had been planted a few days, so I thought it was about ready to cultivate, I went down one evening to see it. I don't think there were one hundred hills on the ten acres that had not been cut off by the cut-worms. It looked a little doubtful about getting a crop without replanting, but thought I would make one effort to save the crop, so, on my way home, I engaged a neighbor and his two boys for the next day to help me. I then went home and mixed a quantity of salt with an equal quantity, or perhaps a little more, of land plaster. That night we had a heavy rain, so the ground was very wet the next day, but we went on and put about a small tablespoonful of the mixture to each hill. The ground being wet, the salt dissolved at once and went down into the ground, and Mr. Worm quit business at once. On the third day after, I went down to see how things were coming on, and, to my surprise, found the corn up so I could see the rows across the field, ready to be cultivated. I had no more trouble with the worms, and had a good crop of corn. That was in Hillsdale county, Michigan.

My choice for a mixture would be equal parts of salt, land plaster and wood ashes, but if the worms were cutting my corn, and I only had the salt, would use it alone, putting a less quantity to the hill.

C. M. C. ANDRUS.

Wichita, Kas., June 5, 1895.

## Notes From Mitchell County.

EDITOR KANSAS FARMER:—The rains of last week have wrought a marvelous change in the outlook of this county. The oats, which appeared dead beyond redemption, now promise a fair yield. Pastures are green and growing rapidly. Farmers are hopeful and full of vim. The severe ordeal through which this country has passed in the past two years has placed Kansas in the lead in the matter of irrigation, alfalfa-growing and subsoiling,

and no county in the State is more alive to the importance of these than Mitchell.

C. N. Brown, of Beloit bank, and George Gilfillan, a farmer, are enthusiasts in alfalfa-growing and can tell a man more in a minute than the average man can in a month. They will insure a man a good stand any year, provided the ground is properly prepared. Mr. Brown bought a drill with seeder attachment, some years ago, expressly to sow alfalfa. Mr. Gilfillan hires the drill and makes a business of putting in alfalfa for farmers in the neighborhood. Farmers hire him because he has just the kind of a drill needed and just the kind of knowledge to do a good job. It all depends, these men say, on the preparation of the ground. It should be plowed and subsoiled in the fall. In the spring it should be harrowed and leveled with plunger; then rolled and harrowed, then rolled and harrowed again, and the third time rolled and harrowed. This is to pack the soil beneath the surface thoroughly. Then put in with press drill, two inches deep, or more if ground on surface is dry.

They sow not more than ten pounds to the acre, and frequently less. They say that farmers are losing money every year in their failure to secure a stand of alfalfa, because they fail to prepare their seed-bed properly.

Alfalfa on bottom lands long since has been known to be a success. Alfalfa on uplands will be, when the ground is subsoiled and thoroughly prepared for seed and the seed put in right. Yes, irrigation, subsoiling and alfalfa-growing, I believe, will make even western Kansas a populous and wealthy country. "So mote it be."

M. MOHLER.

## Weekly Weather-Crop Bulletin.

Weekly Weather-Crop Bulletin of the Kansas Weather Service, for week ending June 10, 1895.—T. B. Jennings, Observer Weather Bureau, Director:

## CONDITIONS.

The temperature, except the 4th and 5th, has been above the normal, with an abundance of sunshine. The rainfall was light in the eastern division, with fair rains in Reno, Kingman, Sedgwick, Butler, Cowley and Sumner, and good rains over the rest of the State, being generally heavy over the western division and the larger portion of the middle division.

## RESULTS.

## EASTERN DIVISION.

Corn and potatoes are clean and make a fine appearance in the field. The corn has grown very rapidly. Oats and flax are much improved and are in bloom. Wheat harvest is well along in the southern counties and is beginning in the central; while the straw is short and a thin stand, the berry is reported generally very good except in Wilson, where it was much injured by the bugs. Fruits of all kinds are very good.

Allen county.—All crops need rain; prairie grass the best crop; wheat harvest is on and a medium crop is reported.

Anderson.—All crops looking fine, with good prospects.

Brown.—All crops growing fast, corn very rapidly; oats well headed; wheat turning yellow.

Chase.—Corn has done well; oats almost a failure; wheat fair in some parts.

Chautauqua.—Wheat harvest well under way, yield better than expected; corn growing well; stock water scarce.

Cherokee.—A good growing week; pastures and oats improved; bugs in corn.

Coffey.—Corn has grown very rapidly, is clean and looks fine; oats and flax much improved and in bloom; pastures and meadows fine; wheat harvest in order.

Doniphan.—Corn growing finely; wheat ripening; oats heading short; pastures short but growing; hay crop will be light.

Douglas.—Corn and oats growing nicely; more rain needed for hay and pastures.

Franklin.—Subsoil dry; crops need rain.

Jackson.—Corn doing very well, early planted waist-high, late planted coming up; some oats have been pastured, that not pastured is improving; bugs in oats and near-by corn.

Johnson.—Favorable week for crops, but beginning to need rain.

Labette.—Wheat harvest half over,

straw short and thin on ground but the berry is good; corn doing well; we need rain.

Linn.—Corn looking well; oats short; flax filling very good; tame grass poor.

Marshall.—All crops doing fine.

Montgomery.—Good week on crops; corn doing well, but that near wheat fields being hurt by bugs; 75 per cent. of the wheat now in shock.

Morris.—Corn and flax fine; oats fair; potatoes all right.

Osage.—Crops making but little headway, owing to the shortage in water.

Pottawatomie.—A growing week; corn doing well; oats recovering; alfalfa haying is over; wheat harvest ready; cherries and currants in market.

Riley.—Rain came in time to save oats and help corn.

Wilson.—Wheat mostly in shock, badly shriveled by bugs; corn fine; flax improved; potatoes and garden truck doing well.

Woodson.—The week for the farmer and his growing crops; flax blooming and bids fair to make a good crop.

## MIDDLE DIVISION.

The fine rains in the central and northern counties are bringing the crops rapidly forward. Wheat harvest has begun in the southern counties, while further north the heads are filling up with a good berry. The continued dry weather is not improving any of the crops in the southern counties, but the prospect for rain is improving.

Barber.—Favorable week for all kinds of crops.

Barton.—Ground now in good condition; much corn replanted and much planted in wheat fields; barley improving; wheat damaged so by the dry weather, rains too late to help much.

Butler.—Corn much improved except where it joins wheat fields; oats

up and may make partial crop; corn doing well—much had to be replanted.

Reno.—Corn clean, and a large crop, growing finely; much alfalfa and the fodder canes being planted.

Rooks.—Very favorable week for all growing crops; corn clean and growing rapidly; oats and barley coming out nicely.

Rush.—All crops made good progress during the week; oats, barley and rye heading well; grass good; corn fine.

Russell.—Wheat much improved; will have one-fourth crop; rye better than wheat; oats will make a good crop; corn doing well.

Saline.—The rains have made a wonderful change, except in rye and some wheat.

Sedgwick.—Harvesting has begun; corn looks well but rain would improve it.

Smith.—Crops making good headway; corn looks good, oats fair, but no wheat; grass good.

Stafford.—Crops growing nicely; wheat heads filling plump to the top; much corn relisted now coming up.

Sumner.—Corn growing slowly; some early wheat cut, hard wheat turning

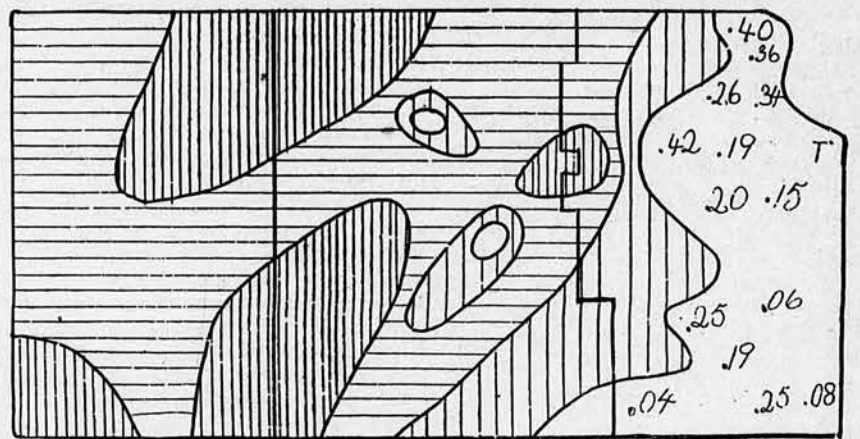
## WESTERN DIVISION.

The great rains have brought forward the growing crops, put the ground in fine condition for plowing and working and given an abundance of stock water. The growing corn is in fine condition and much more is being planted. Grass, gardens, potatoes and fruits greatly improved. Small grains improving.

Clark.—All crops not utterly destroyed by the hot winds before the rain are doing well since.

Decatur.—Wheat has made a good growth and now promises one-half to two-thirds of a crop; corn in fine shape and a big acreage.

Ford.—Corn looks well; wheat, rye



Scale of shades less than 1/2 inch, 1/2 to 1 inch, 1 to 2 inches, over 2 inches, Trace

ACTUAL RAINFALL FOR WEEK ENDING JUNE 8.

poor in many fields; flax thin but improving; wheat harvest nearly over.

Clay.—Corn growing finely; rye soon ready for harvest; wheat doing all that could be expected but is thin and short; apples have fallen badly and will be a light crop.

Cloud.—Fine growing week; corn looking fine; oats have made a remarkable growth and will make fair crop; pastures green again; wheat was mostly plowed up.

Cowley.—Good rain, which helped corn and millet; wheat harvest began on 4th, straw short and thin, berry good.

Dickinson.—Rains have materially increased crop prospects; corn has improved very much; wheat will make six to ten bushels per acre, and oats two-thirds of a crop.

Harper.—Good rains; corn looks well; wheat ready to harvest; grass poor.

Harvey.—Fine growing week; wheat much hurt by bugs; oats doing better; corn fine; fruit promises good crop.

Kingman.—Rains are helping wheat to fill; early corn is tasseling, looks well but is short; much corn has had to be replanted.

Kiowa.—Corn in fine condition since the rains; replanting still in progress; pastures getting green.

McPherson.—A fine week for growing corn, some still being planted; oats greatly improved; potatoes will make a large crop; wheat doing well.

Mitchell.—Conditions materially improved; corn making fine progress; alfalfa generally cut, crop light; fodder canes are doing well; potatoes promise well and are supplying the tables.

Osborne.—Pastures and oats have revived; corn and gardens are doing well; stock water more abundant.

Ottawa.—Very good week for corn; oats better than expectations.

Pratt.—Some of the wheat, though short and thin, is filling well and will be worth cutting; oats have greened

and oats have improved wonderfully since the rain; the hot wind last week blasted the cherries; other fruit prospects good.

Gove.—Everything looking better; wheat improving.

Graham.—With nine inches of rain in five days, and fair weather since then, we are prepared to try to grow a good cane crop; things look nice since the rain.

Hamilton.—Ground in fine order; farmers are sowing alfalfa, sorghum, etc.

Logan.—Crops doing fine; ground in splendid condition.

Meade.—Wheat, barley and potatoes doing well since the rain.

Morton.—Good rains.

Norton.—Corn excellent; oats good; crops growing nicely; grass good; some corn being relisted.

Sheridan.—Spring crops of all kinds will make a full crop if favorable weather continues; gardens excellent; pastures good; fall wheat, not blown out in early spring, will make half crop.

Thomas.—Fine growing weather after the rains; corn doing well but some had to be replanted; grass and all other vegetation doing finely.

Trego.—A wonderful change in the grass and small grains; weeds trying to choke corn; more corn being planted; good potato weather; a new kind of seventeen-year locust has made its appearance.

Wallace.—The rains have put everything in fine growing condition; corn, grass and barley growing finely; wheat improved, but short; cutting fine crop of alfalfa.

Arrangements are being made to run excursions from all sections of the North and West to Macon, Ga., during the coming Peach Carnival, which is to be held in that city from July 1 to 20, inclusive. Macon expects to entertain 50,000 visitors during the carnival.

## Horticulture.

### Orchard Pruning.

Perhaps this, the season of the year when the knife is least likely to be used, is an opportune time to remind the beginner, who has perhaps been dismayed at the discussions as to the best methods of pruning, that for apple orchards very little pruning is necessary. A writer in a prominent Eastern paper says:

"It is of common occurrence to be asked by an orchardist, 'When shall I prune my trees?' and when, in reply, I ask why it is thought they require pruning, the answer is always to the effect that it had been understood by those inquiring that pruning was necessary every year, though they were unable to say what it was to accomplish. The same idea is entertained by the city merchant who has shade trees before his door, but he has been brought to believe this by laborers anxious for a day's work in winter. They have made him believe his tree has to be cut back every year, and as he is generally ignorant of such matters and thinks the laborer is not, he lets his trees be mutilated every year without a murmur. There is but little heavy pruning required in an orchard after the first year or two succeeding the planting. There should be some done when first planted, both to lessen the risk of transplanting, and to give shape to the tree. It is well understood that new shoots form just below where cut off, therefore the cut is to be made where a branch or two is wanted. It is not always that the new shoots are just where they are wanted or of the number desired, and there may be a little more pruning required. But the fact remains that if intelligently handled the first few years, but little pruning will be required afterwards. Repeated prunings of good-sized branches weaken trees very much. It frequently occurs that old orchards fail to make thrifty growth, and to promote such growth heavy pruning is performed. This is a great mistake. If there are half dead limbs on the tree it is right to cut them out, but to lop off limbs right and left, which are healthy but not growing, is going to cripple the tree severely. If the trees are not at the natural end of their growth through age, what they need is manure and cultivation. This will accomplish what is desired if anything will. In my travels last winter I passed by an orchard of pears and apples which were being pruned, and such a sight as it was! In the first place the trees had been set too close, by far. The pears were apparently not more than twelve feet and the apples twenty feet apart. A laboring man was going through the orchard with hatchet and saw, and the ground was strewn with thick branches. The trees were full of scars, the wounds appearing in all directions. I inquired what he was doing, and he informed me the boss thought the trees were too thick, and he was cutting away the lower limbs and many of the side ones, to let in light and air. To my suggestion that it would be infinitely better to chop out every other tree, he said his boss would not listen to that, as each tree was different from the others, and he wanted a variety. This, of course, was all wrong. The mistake of planting too close was being followed by another, the mutilation of the trees past repair. I am positive that some of the trees I saw will never recover. Two-thirds of their limbs were cut off, giving them a terrible check. And the chances are that rot will set in where the limbs were cut, for one so ignorant of plant life as this man would hardly have wit enough to paint the scars. It is not always laborers who make these mistakes. I know of an eminent landscape gardener who had charge of some public grounds who did just the same thing. Part of the grounds had been a forest, and while the trees were fed every year by the decaying leaves and rubbish they grew well. When the forest became a lawn and the leaves were carefully raked up every fall, the trees languished. Instead of feeding them with manure the saw was applied to the top, to make

the trees start afresh, it was said, and the trees were ruined. This was six years ago, and the trees have not started yet."

### Shrubs During Dry Seasons.

EDITOR KANSAS FARMER:—All sorts of shrubs in Kansas have had a severe test during the last twelve months; many have failed entirely, while others have done well. Owing to the continued dryness of last summer and fall and the severe cold of the winter, a large number of roses have been cut short of bloom, except the climbing sorts. I will mention three that have been full of beautiful bloom for the usual length of time—Prairie Queen, Seven Sisters, Baltimore Belle. At least one of them should be growing at every home in the State. Less than fifteen months ago I planted a good-sized bush. To-day it has hundreds of fine roses, in fact, is almost a perfect specimen. Topeka is well supplied with climbing roses, and those who have none should not let another season pass without some. They will surely pay you for your trouble, also resist drought, heat, wind and cold as well as anything you can plant.

The common snowball, privet, syringa, lilac, red honeysuckle, spirea, japonica, yucca and peony have all stood the dry period beautifully. Of course the bloom has not been so large as usual, but the wood growth and general hardiness has had a test we should remember. This season the early-blooming lilac showed plainly the effect of continued dry weather, the snowball, following, with many blooms, and where the plant received a top dressing of well-rotted manure last August, the result plainly was seen by the increased beauty of the flowers.

The above plants, together with others that grow in this State, should receive more attention. I always feel doubly paid for any little help I may give to a growing shrub, rose, etc. I don't mean to overdo the thing for a short time, then leave them to themselves, but give them just a small portion of your time at all times. It is no trouble for me to use the hoe to help the growth of a thrifty, growing plant. I find the hoe will do more good in the long run than to use the watering-pot too freely, for once you begin, the rule is you must keep it up. Shrubs or roses will give poor satisfaction if allowed to become grass-bound or planted under shade of large-growing trees. Mine are all in full sunlight except those near the house. I like shade but don't like it as well as many people I know, who have shade trees planted so thick nothing will grow on the home grounds but trees. For my part, I like some trees, flowers, shade and sunshine. GEO. W. TINCHER.

Topeka, Kas.

### Tomatoes for Winter.

"In time of peace prepare for war," in summer prepare for winter, if you would live well. An unknown writer says:

"I have for years been trying various ways to prolong the season in which fresh tomatoes may be had after frost, and have settled on the following as best. The plan may also be made a matter of profit for shipping, for I have had the fruit in good condition at Christmas, when the price was 25 cents per pound. About the first of July I make cuttings, about a foot long, from vigorous vines that have made good, smooth fruit only. After a good rain these are set in well-prepared soil nearly their entire length. At this season the soil is so warm that they root with greatest certainty, and I seldom find one that fails to grow if the soil is moist and well packed about the base of the cutting. They are set at the same distance as plants and are cultivated in the same manner. These plants will begin to ripen late in the fall, and will be full of well-grown green fruit when frost arrives. When the first light frost nips the foliage the whole crop is gathered. They are wrapped in paper, packed in crates and stored in a place where they will keep cool but will not be frozen. Any tight outhouse where the crates can be covered with straw in cold weather

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## The old saying

that "goods well bought are half sold" is true of Pure White Lead. Dealers cannot afford to sell, or painters to use, unknown or inferior brands (see list genuine brands). Reputation is capital, and can only be acquired by selling or using the best materials. Responsible dealers sell, and practical painters everywhere use these brands.

Any desired shade of color may be easily produced by using National Lead Co.'s Pure White Lead tinting colors. Sample card of colors and pamphlet is sent free.

NATIONAL LEAD CO.,

1 Broadway, New York.

will answer. For family use a few are taken out at a time and put in a warm room to ripen for the table. We have them in this way until the middle of January nearly every year, in nice condition for slicing. If grown in quantity for shipping they should be overhauled from time to time and the ripening ones rewrapped and shipped up to Christmas, when the whole lot can be shipped, as they will sell even if not colored, as they will soon ripen up in a warm temperature, or it may be better to bring them into a warmer place to color before shipping."

### Spraying Jack Frost.

The Syracuse (N. Y.) Weekly Post has the following, which is well worth remembering:

"It is generally thought that the late frosts have effectually destroyed the grape crop this season. There will, however, be one exception to this rule in Onondaga county, and the saved crop will be on the farm of Addison J. Loomis, Cicero. Some years ago Mr. Loomis put out twenty acres of Niagara grapes, and he didn't set them out for frost to kill. Mr. Loomis is one of the best and most intelligent farmers in central New York; he is a member of the Onondaga County Farmers' Club. As a rule he is boss on his own farms, which fact has been lately impressed on Jack Frost.

"It was the night of the hardest freeze last week. The mercury was trotting along down in the tube at 10 o'clock p. m. A hard frost was certainly coming. 'We will spray that twenty-acre lot of Niagara grapes before daylight-to-morrow morning,' remarked Mr. Loomis to his hired men.

"Isn't that a little early to get a hired man out?" queried one of the gentlemen addressed.

"As a general rule it would be," remarked Mr. L., 'but to-morrow morning about 3 o'clock will be just the right time.'

"And what are you going to spray with, Paris green or Bordeaux mixture?" asked the hired man.

"Neither one," replied Mr. L. 'We will use plain cold water. Hitch up one team to draw water, hitch the other team to the lumber wagon, put in the power spray pump and attach two lines of hose and before sunrise you must have the foliage of that twenty-acre lot of grapes drenched with water. Leave a couple of rows without spraying so that we can see if it makes any difference.'

"At 3 o'clock the next morning the grape foliage was frozen stiff over the entire twenty acres. And at that hour a good team of horses, at a rapid walk, was pulling the wagon that contained the pump between the rows of grapes. One man worked the pump. To the pump was attached two lines of hose, each line worked by a man. Two rows of vines were sprayed at the same time. Everything went off like clock-work. The barrel was kept replenished, broad sheets of water were poured over the foliage, a hustle was kept up and when the sun rose the entire field had been drenched save the two test rows. Two hours later the leaves on

the test rows wilted and turned black. The frost had killed them. The leaves on the remaining twenty acres were as fresh and vigorous as ever. And even the hired man who had kicked so vigorously said they hadn't got up a minute too early.

"How much did you save by spraying your grapes with water?" said a Post reporter to Mr. Loomis.

"Well," said Mr. Loomis, in his well-known deliberate way, 'I guess that little early morning's work saved me about \$1,000.'

The "Month of Roses" will be celebrated by a special edition of *American Gardening* devoted to roses and rose-growing. Prominent amateur and professional rosarians will assist in making this the finest and most attractive number of the kind ever issued. A beautiful supplement, lithographed in eleven colors, illustrating one of the best and most popular of the new roses, will be given away with each copy. This special Rose number will also be profusely illustrated by half-tone engravings, etc. We have made arrangements with the publishers (*American Gardening*, P. O. Box 1697, New York), to have a copy of this superb number sent free to any of our readers who may apply to them for it.

### A Chance to Make Money.

I have berries, grapes and peaches, a year old, fresh as when picked. I use the California cold process; do not heat or seal the fruit, just put it up cold; keeps perfectly fresh, and costs almost nothing; can put up a bushel in ten minutes. Last week I sold directions to over 120 families; any one will pay a dollar for directions, when they see the beautiful samples of fruit. As there are many people poor like myself, I consider it my duty to give my experience to such, and feel confident any one can make one or two hundred dollars round home in a few days. I will mail sample of fruit and complete directions, to any of your readers, for eighteen 2-cent stamps, which is only the actual cost of the samples, postage, etc., to me. FRANCIS CASEY, St. Louis, Mo.

UR invited to send for my latest price list to small fruits. Half million strawberry plants, 300,000 Progress, Kansas and Queen of West raspberry plants. B. F. Smith, Box 6, Lawrence, Kas. Mention this paper.

A. H. GRIESE, Prop'r Kansas Home Nurseries, Lawrence, Kas., grows trees for commercial and family orchards—the Kansas Raspberry, Blackberries, standard and new Strawberries—also shade and evergreen trees adapted to the West.

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## In the Dairy.

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

### Dairy Farming vs. Irrigation.

DAIRY EDITOR KANSAS FARMER:—That it is very forcibly demonstrated that there is no profit in or dependence on ordinary farm crops in the western portion of this State, on account of drought, no one will deny; and we question very much whether the growing of wheat, corn and oats will ever be a success in the drought-stricken West. The plowshare has gradually crowded the drought line further and further west, but it now seems that the limit has been reached where man is powerless to push the line farther toward the setting sun, and it seems to me to be the part of wisdom to accept the conditions as they are and adapt or shape things to meet those conditions.

A great deal is now being said and written about irrigation. But if all that is being promised for irrigation by men with machinery for sale can be realized, irrigation will yet fall far short of success. That great things can be accomplished by irrigation, no one of ordinary intelligence will deny, but it is equally true that, on account of lack of means among farmers, the number of those that can avail themselves of its profits will be comparatively small. And we would not be surprised if time would prove that manufacturers of irrigating machinery and their agents were the ones who make the most money out of this irrigating scheme. If they should, it will not be the first time that farmers have been worked with such a game by the manufacturers of certain lines of machinery. In saying this I do not wish to be understood as saying aught against irrigation under favorable conditions, for it is being done successfully, where conditions are favorable and capital plenty. But for the average farmer without capital, or at best having small means, irrigation does not mean what some seem to think.

But this is a serious question, as is any question which involves home and our all. Over this region are scattered thousands of homes, where men and women have staked their all, and they are awakening to the fact that only in exceptional years is the natural rainfall sufficient to insure them crops for sustenance for man and beast. What to do to meet these conditions and save their homes is of the greatest importance to them. Just now they seem to be reaching out to clutch the irrigation scheme, as a drowning man will clutch a straw.

I believe that the dairy industry holds out greater inducements to-day, and, for the farmer of small means, will produce a larger dividend than an irrigating plant. This is a conclusion that I came to several years ago, and I want to say to the reader of this article that I get nothing for saying this. I am not even paid for writing this article. I am not an agent for nor a manufacturer of dairy machinery, but am a disinterested party, so far as finances are concerned, but have had years of experience in the dairy, sometimes under very unfavorable natural conditions. I am still in the business and know what can be done in this line of farming.

A cow will consume a large amount of forage during the year, either pasture, soling crops, or dried forage of some kind. This she must have to do her work, and when furnished with plenty of this there is no better machine in existence to-day for converting crude material into shining \$\$\$ than a good dairy cow.

Happily for our western friends, some of the drought-resisting crops can be grown for forage. We have fed our cows cane, Kaffir corn and millet, both as soling crops and dry feed, with good results. With plenty of these, green, dry or as silage, and a small amount of bran to balance the ration, and with good care, one has all the feed necessary for a cow, aside from the grain. These forage plants can be raised, and are being raised even in more than ordinarily dry seasons. Having provided the roughage the grain ration is not so

hard to provide. Bran and shipstuff are both plenty and cheap and not far to ship. There are tons and tons of the by-products of wheat shipped yearly from this and other Western States to the States as far east as Vermont, to be fed to dairy cows by men who are making a living at dairying even when compelled to buy most of their feed and have it shipped from 1,500 to 2,000 miles. Why not manufacture at least some of these by-products of our Western farms into finished dairy products before shipping? I believe the time is coming when even milk will be shipped from our Western prairies to remote Eastern cities the same as dressed beef is now.

M. E. KING.

Elm City, Labette Co.

### Wants a Creamery.

DAIRY EDITOR KANSAS FARMER:—There are quite a number of farmers in this locality, all farming under irrigation, and living in the Arkansas river bottom, growing alfalfa chiefly, who are desirous of having a creamery established, perhaps at Syracuse, which is the county seat of the county, or near said town. The milk of from 300 to 500 cows could be secured at the start, and I think an obligation effected supplying the milk from that number of cows the entire year, provided, of course, the creamery was operated in such a manner as would properly remunerate those who furnished the milk. Our advantages consist in our ability to grow alfalfa very abundantly and all root crops, and many forage plants, thereby furnishing a continuous food supply for cattle. Water supply very plenty and cheaply secured. Winter generally furnishes sufficient cold weather to secure a cheap ice crop. We are on the main line of the Santa Fe railroad, and near the Western butter market, which would no doubt consume the entire product of the creamery. We greatly desire to be placed in communication with some practical butter-maker, some competent and live man who would establish a business of this kind here, provided the location suited him upon investigation. I write you on account of your extensive acquaintance with men connected with butter-making, thinking it probable you could assist us in securing a competent party for the business.

ALFRED PRATT.

Syracuse, Hamilton Co., Kas.  
[Parties interested will please correspond with Mr. Pratt. The location is no doubt a good one, as there are no creameries within eighty or 100 miles.—EDITOR.]

We have plenty of luck when oleo is sold as oleo, when we own good cows only and grow nearly all the feed they eat during the whole year.

When cream has been allowed to stand so long that it is not only very sour, but in the second stage of decomposition—like limberger cheese—the best thing to do with it is to feed it to the hogs, as no amount of churning, salt, working or butter color will ever make anything out of it but a very thin specimen of axle grease.

The finger and the tongue are very poor means to test the temperature of cream. Every butter-maker should have a good thermometer. Half the bad butter is the result of churning cream at an improper temperature. If the cream foams, it is too cold. If the butter gathered is too soft, the cream was too warm. Use judgment and a good thermometer, and the two combined will save much trouble.

New milch cows require a certain amount of care in milking; that is, too much energy or roughness should not be put into the act. The udder and teats are more or less sensitive, even when the cow has done well, and if there is a caked bag there is attendant soreness and inflammation. Milkers should be instructed to handle the teats of all new milch cows with gentleness and care, not, however, neglecting to be thorough in extracting the last drop of milk therefrom.

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## GOOD BUTTER AND HOW TO MAKE IT.

A book of help and interest—free. It tells about the most modern and economical dairy invention—the Crystal Creamery. Crystal Creamery Co., 29 Concord St., Lansing, Mich.

### What is a Cow Worth?

Prof. C. S. Plumb, Director of the Indiana station, reports a week's test of a Jersey cow owned by the station, that shows 248.4 pounds of milk and 15.35 pounds of fat in the seven days. The cream was also churned and made 17 pounds 13½ ounces of commercial butter, salted one ounce to the pound. The cow was purchased at a public sale in Indianapolis in 1890 for \$200.

Such a cow would be cheap at \$200, even if no account was taken of the value of her calf. The amount of butter she would make, over the cost of her feed per year, would easily amount to the interest on \$500. We have never been satisfied with the way the average farmer estimates the value of a good cow. We have heard many a man say he would never pay \$100 for a cow, because there was never a cow that was worth it. The first principle a business man has to learn in getting his financial education and judgment is that money is worth no more in market than what it will bring in interest. The interest on \$100 is \$6. A cow that will produce 400 pounds of butter in a year at 20 cents a pound, pays for her keep and \$40 over. This is the interest at 6 per cent. on \$666.66. Yet there are thousands of men who would not pay \$100 for such a cow. Any investment that would pay the original sum invested in two years and a half would be snapped very quickly by any good financier. Good business understanding and financial judgment are as greatly needed in this business of dairy farming as in banking.—*Hoard's Dairyman.*

### The Patagonian Ostrich.

An interesting correspondent from Patagonia writes to the New York Sun, the following, bearing directly upon the habits of the ostrich of that country: "Just how it is that ostriches have survived can be understood by what the Patagonians tell of them. Thus the birds feed on flies, grasshoppers—about all the insects that appear in their region—and they do this from the moment they break their way through their egg shells. They are able to make their own living from the first. Then, too, they are brought into being in a peculiar fashion. The old cock bird has a harem of several hens, and he is in some respects a marvelously good head of a family. He builds a nest for the harem, and the hens take turns in depositing their eggs in it until it is full. Nests having forty eggs in them are not uncommon. When the nest is full enough the old cock takes possession, and sits on and cares for them until they are hatched. Then he looks after the brood—leads them about where food is most abundant, and keeps his eyes open for the ever-near dangers. The young birds do not at first recognize an enemy in the predacious beasts and birds that surround them, but the old cock remains with them, sounding 'a loud snorting or rasping warning call' whenever he sees danger, until at last the youngsters know the dangers for themselves. They are not only able youngsters, but they are, in addition, well cared for."

The right flavor in butter is to be secured only by a careful attention to cleanliness, proper ventilation of stables and the right kind of food.

### Union Pacific Route.

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G. A. McNUTT,  
1044 Union Ave., Kansas City, Mo.

### "Among the Ozarks,"

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

J. E. Lockwood, Kansas City, Mo.

## FOR SALE! FARMS WAY DOWN.

I have excellent farms in Rooks county, Kansas, for sale, way down below their value. Will sell on contract for one-tenth down and one-tenth yearly, or will give deed if one-fourth or more is paid down. Write for particulars and state how much you can pay down and how you want the balance of payments. I also have several unimproved farms in central Nebraska and one large body of over 7,000 acres. I have a finely improved ranch of 1,440 acres in Rooks county, Kas. Any or all of above will be sold very low, or might exchange part or all of it for good improved property in Chicago or vicinity. Address

B. J. KENDALL,  
2509 Farnam St., OMAHA, NEB.

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Further information cheerfully sent by mail.  
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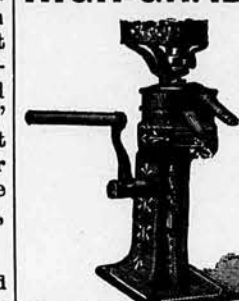
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Department B.  
Kansas City, Mo.

### Publications of United States Department of Agriculture for May.

[All applications for the publications of this department should be addressed to the Secretary of Agriculture, Washington, D. C.]

Experiment Station Record, Vol. VI, No. 7. Pp. vi, 585-678, figs. 8.

Experiment Station Record, Vol. VI, No. 8. Pp. v, 679-858.

Organization Lists of the Agricultural Experiment Stations and Institutions with Courses in Agriculture in the United States. Pp. 88. (Bulletin No. 23, Office of Experiment Stations.)

Bibliography of the More Important Contributions to American Economic Entomology. By Samuel Henshaw. Part IV. A-K. Pp. 167.—The more important writings of Government and State Entomologists, and of other contributors to the literature of American economic entomology.

The Pocket Gophers of the United States. Pp. 47, frontispiece, figs. 6, map 1. (Bulletin No. 5, Division of Ornithology and Mammalogy.)—This bulletin treats of the habits, economic status, and means of destruction of the pocket gophers of the United States, and is complementary to a technical paper (Fauna No. 8) on this group issued by the same division.

Methods and Results of Investigations on the Chemistry and Economy of Food. Pp. 222, figs. 15, charts 3. (Bulletin No. 21, Office of Experiment Stations.)—A technical bulletin outlining in a general way the field to be traversed, what portions need first to be cultivated, and indicating how the work should be carried on.

Report on the Use of Metal Railroad Ties and on Preservative Processes and Metal Tie-plates for Wooden ties. Pp. 363, pls. 5. (Bulletin No. 9, Division of Forestry.)—This bulletin is supplementary to the report on the substitution of metal for wood in railroad ties, published in 1890.

Library Bulletin No. 6. Accessions to the Department Library January-March, 1895. Pp. 12.

Further notes on the San Jose Scale. Pp. 283-295, from Insect Life, Vol. VII, No. 4.

The World's Markets for American Products. Great Britain and Ireland. Pp. 93, fig. 1. (Bulletin No. 1, Section of Foreign Markets.)—This bulletin is the first of a series designed to show the world's markets for American Products to all those who are sufficiently interested in increasing the demand therefor in foreign lands.

Weeds; and How to Kill Them. Pp. 81, figs. 11. (Farmers' Bulletin No. 28, Division of Botany.)

The Pear-tree Psylla. Pp. 8, figs. 6. (Circular No. 7, Division of Entomology.)—Gives nature of the injury, method of introduction, description and life history, the future outlook, natural enemies, and the remedial treatment advised.

Canker Worms. Pp. 4. (Circular No. 9, Division of Entomology.)—Gives general appearance and method of work, distribution, natural history and habits, natural enemies, remedies and preventive measures, etc.

The Harlequin Cabbage Bug, or Calico Back. Pp. 2. (Circular No. 10, Division of Entomology.)—Gives general appearance and method of work, distribution, habits and natural history, remedies and natural enemies.

Report of the Secretary of Agriculture; Being Part of the Message and Documents Communicated to the Two Houses of Congress at the Beginning of the Third Session of the Fifty-third Congress. Pp. 220, figs. 2.

Report of the Botanist for 1894. Pp. iii, 161-166, from the Annual Report of the Secretary of Agriculture.

Monthly Weather Review—December, 1894. Pp. 487-533, charts VII.

Charts of the Weather Bureau. (Size 19x24 inches.)

Weather-Crop Bulletin (series of 1895), reporting temperature and rainfall with special reference to their effect on crops. Nos. 8, 9, 10, and 11 for the weeks ending May 6, 13, 21 and 28.)

Semi-daily Weather Map, showing weather conditions throughout the United States and giving forecasts of probable changes.

#### REPRINTS.

Forage Plants for the South. Pp. 30, figs. 17. (Farmers' Bulletin No. 18, Office of Experiment Stations.)

Peanuts: Culture and Uses. Pp. 24, fig. 1. (Farmers' Bulletin No. 25, Office of Experiment Stations.)

Leguminous Plants for Green Manuring and for Feeding. Pp. 24. Farmers' Bulletin No. 16, Office of Experiment Stations.)

The Rape Plant: Its History, Culture and Uses. Pp. 20. (Bulletin No. 11, Office of Experiment Stations.)

Nostrums for Increasing the Yield of Butter. Pp. 16. (Farmers' Bulletin No. 12, Division of Chemistry.)

The Feeding of Farm Animals. Pp. 32. (Farmers' Bulletin No. 22, Office of Experiment Stations.)

Washed Soils: How to Prevent and Reclaim Them. Pp. 22, figs. 6. (Farmers' Bulletin No. 20.)

Barnyard Manure. Pp. 82, figs. 7. (Farmers' Bulletin No. 21, Office of Experiment Stations.)

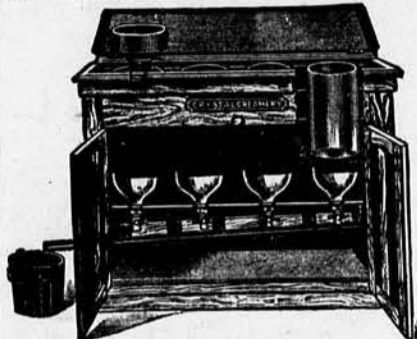
ers' Bulletin No. 21, Office of Experiment Stations.)

Tobacco: Instructions for Its Cultivation and Curing. Pp. 8. (Bulletin No. 6, Office of Experiment Stations.)

#### Good Butter.

Every lump of butter counts in these hard times. There can be no waste of any kind without a palpable loss. So inventions that mean economy, and an easier way of accomplishing more than before, are interesting enough to read even if the reading does "turn out to be an advertisement."

The Crystal Creamery is just what its name implies—glass creamery—glass cans instead of metal—cooler and a great deal cheaper. Eleven years ago the Crystal Creamery, of Lansing, Mich., made eleven creameries; ten years ago 150; nine years ago 250. From that time until the present



the increase in demand has been steady and straightforward, until the manufacturers confidently hope and believe that their sales this coming and present year will reach 5,000 creameries per year.

In connection with this glass creamery this firm manufactures, under the patent of the same inventor, the cream ripener, of glass; butter packages of glass, and their output in glass specialties makes a complete chain by which they produce these results in extreme fine flavor of butter, and butter of keeping qualities, which are claimed to be unequalled by anything ever known.

A free book entitled "Good Butter and How to Make It," is being mailed by this enterprising company to all interested parties who will take the trouble to write for it, enclosing a 2-cent stamp. Valuable hints are given to the dairyman and full directions are outlined for securing quality in butter at the least possible outlay in labor and expense, and we would advise all our readers who are interested in butter-making to write for this book at once, and we believe that a careful perusal of this book will benefit the reader. It will also give full description, particulars, etc., as to the entire line of dairy goods and specialties manufactured and handled by the company.

#### Why She Smiles Sweetly.

Sparkling eyes, quick beating heart, and the rosy blush of pleasure on the cheeks, makes the strong man happy when he meets his lady love. That's the kind of a man whose very touch thrills because it is full of energy, vigorous nerve power and vitality. Tobacco makes strong men impotent, weak and skinny. No-To-Bac sold by druggists everywhere. Guaranteed to cure. Book, titled "Don't Tobacco Spit or Smoke Your Life Away," free. Ad. Sterling Remedy Co., New York or Chicago.

#### Facilities for Travelers.

The Nickel Plate road now offers better facilities to the traveling public than ever, the improved facilities having been inaugurated May 19. No change of cars between Chicago, New York and Boston in either direction. Superb dining cars between Chicago and Buffalo in both directions. Trains leave Chicago 8:05 a. m. daily except Sunday; 1:30 and 9:20 p. m. daily for Fort Wayne, Fostoria, Cleveland, Erie, Buffalo, New York and Boston; 1:30 p. m. train arrives New York 6:30 and Boston 9 o'clock the following evening. Uniformed colored porters in charge of day coaches. Lowest rates on all trains. If further information is desired call on your nearest ticket agent or address J. Y. Calahan, General Agent, 111 Adams street, Chicago, Ill.

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

#### 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 him.

WEST & THURAX, Wholesale Druggists, Toledo, O. WALDING, KINMAN & 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.



### CARRIAGES, BUGGIES, HARNESS

and Bicycles, at Factory Prices. Work guaranteed and 20 to 40 per cent saved. Our goods received the highest awards at the World's Fair. Our 1895 Mammoth Illustrated Catalogue is free to all. It shows all the latest styles and improvements and reduced prices. It has 200 pages and is the largest and most complete catalogue ever issued. Send for it. It's free. Alliance Carriage Co., Cincinnati, Ohio. Write to-day.



#### Chicken Mites.

EDITOR KANSAS FARMER:—What are the best remedies for chicken mites? They are very numerous on this year's small chicks. Success, Kas. Mrs. J. J. JOHNSON.

First, clean up the premises. Saturate with kerosene, especially the under side of the roosts. Dust fowls well with insect powder. Grease their heads and necks with warm lard. Repeat two or three times a week until all lice and mites disappear.

#### Publishers' Paragraphs.

B. P. Holland, of Amory, Monroe county, Mississippi, wants to know the address or whereabouts of any of the daughters or heirs of Clem Davis, formerly of Walker county, Georgia. When last heard from was in Kansas or Missouri.

John S. Davis' Sons, of Davenport, Iowa, have been building threshing machinery thirty-nine years and make only the best in their line. This company has something good to offer threshermen and something of interest to say to them. Better write them about it.

Any of our readers desiring to purchase a good buggy will do well to notice advertisement of George Buford, in another place in this paper. Write him for catalogue and directions for ordering.

All farmers in the West are interested in the different modes of irrigation. Alex. Richter, of Hollywood, Ellsworth county, Kansas, manufactures a sub-irrigation pipe which has been found excellent for the purpose. Notice his advertisement on page 16 of this paper.

#### 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.

#### A Vacation Tour to the Rockies

Can be made cheaply this summer by taking advantage of the low rate of one fare plus \$2 for the round trip, offered by the Great Rock Island Route for the National Educational Meeting at Denver. Tickets will be on sale at all stations of the Great Rock Island Route, July 4, 5, 6 and 7, and will be good returning until September 1. The very best of the Rock Island Route train equipment, comprising comfortable and free chair cars, luxurious Pullmans and the finest dining car service in the world, will be placed in service for this occasion. In selecting your route you should remember that after close of the Denver meeting no Colorado trip is complete without a visit to Colorado Springs, Pike's Peak and the Manitou region, and that as the Great Rock Island Route runs solid trains of perfect equipment directly east from Colorado Springs, your return trip can be most expeditiously and comfortably made from that point, without the necessity of returning to Denver, by having your tickets read over the C., R. I. & P. railway.

For full information concerning details of rates and tickets see local agent.

A beautiful souvenir called the "Tourist Teacher," describing the excursion and giving valuable information about mountain side trips, will be sent on application by letter or postal. Address

JNO. SEBASTIAN, G. P. A., Chicago, Ill.

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.

#### Better Than a Gold Mine

Last month I cleared, after paying all expenses, \$235.38; the month before \$136.86 and have at the same time attended to my regular business. I believe any one, anywhere, can do as well, as I have not a particularly good location and not much experience. When you have an article that every family wants, it is very easy selling it. It seems strange that a good, cheap dish-washer was never before placed on the market. With the Perfection, which sells for \$5, you can wash and dry the dishes for a family in two minutes, without putting the hands in water. As soon as people see the washer work, they want one, and that is why so much money can be made so quickly. For full particulars address The Perfection Mfg. Co., 607 63d St., Englewood, Ill. I feel convinced that any lady or gentleman, in any location, can make \$5 to \$10 a day, as every family will very soon have a dish-washer. Try it and publish your experience for the benefit of others.

ALICE O.

### ST. LOUIS MO., U. S. A. WELL MACHINE & TOOL CO.

CATALOGUE FREE. GREAT WESTERN MFG. CO., AGENTS, Leavenworth, Kas., and Kansas City, Mo. When writing advertisers mention FARMER.

### We Can Save You Money

ON—THRESHER BELTS, TANK PUMPS SUCTION HOSE, VALVES, LUBRICATORS and PACKINGS.

If you need anything in this line it will be to your advantage to get our prices before placing your order. A full line of Engines, Boilers and Pumps in stock.

If in the market send us your specifications and get our figures.

JOHNSTON-LEWIS SUPPLY CO., 1228 Union Ave., KANSAS CITY, MO.



Instantly and positively prevents flies, gnats and insects of every description from annoying horses and cattle. It improves the appearance of the coat, dispenses 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 STRAY LIST.

FOR WEEK ENDING MAY 29, 1895.

Sherman county—E. D. Adams, clerk.

MARE—Taken up by James W. Hall, in Washington tp. (P. O. Edison), April 23, 1895, one sorrel mare, blaze face, little white on hind feet; valued at \$15. HORSE—By same, one sorrel gelding, spot in forehead, snip on nose, lump on left stiffl; valued at \$10.

Cherokee county—P. M. Humphrey, clerk.

MARE—Taken up by James Lecher, in Pleasant View tp., one gray mare, 11 years old, scar on left shoulder, shod in front; valued at \$7.50. HORSE—By same, one gray horse, 6 years old, US on left shoulder, shod in front; valued at \$7.50.

FOR WEEK ENDING JUNE 5, 1895.

Montgomery county—Jno. W. Glass, clerk.

HORSE—Taken up by F. W. Spencer, in Caney tp., May 13, 1895, one roan horse, branded W. on left shoulder.

HORSE—By same, one iron-gray horse, branded S. on left shoulder.

MARE—Taken up by G. L. Carrinder, in Caney tp., May 10, 1895, one black mare, fifteen and a half hands high, slit in right ear.

HORSE—By same, one bay horse, fourteen hands high, branded H. on right shoulder.

COLT—Taken up by W. N. Adams, in Fawn Creek tp., one black two-year-old horse colt, branded P. on left shoulder, slit in left ear and string tied around tail.

COLT—By same, one dark roan colt, some white on hind foot.

COLT—Taken up by Chas. W. Wheeler, in Fawn Creek tp., one two or three-year-old strawberry-roan mare colt.

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 23, 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 Marysville tp., May 23, 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 Hightfill, in Mt. Pleasant tp. (P. O. Parnell), 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.

HENRY W. ROBY, M. D.,

SURGEON.

Office 118 Sixth Ave. West, TOPEKA, KAS.

## 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.

**QUESTION.**—My cow, treated by you for partial paralysis last spring, is now as well as ever. She is in fine flesh, is a good eater and gives from twelve to fifteen quarts of milk twice a day. Would it be safe to breed her again? Junction City, Kas. J. W. S.

**Answer.**—If your cow has recovered and grown strong, there is no reason why you should not breed her again. While it is possible that she may have another attack of paralysis, yet it may never appear again.

**BLACK-LEG—TEXAS FEVER.**—(1) I have lost several yearlings and calves in the past week. I think they died with black-leg. Can you give me a remedy? (2) The people in this part of Chase county are afraid of Texas fever. Are ticks the cause of the fever? Any information you can give us will be appreciated. A. B. Thurman, Kas.

**Answer.**—(1) Black-leg is caused by a germ that gets into the system in some way and becomes effective when the animal begins to thrive rapidly, and can be suddenly checked in its ravages by changing to poorer pasture, reducing feed or by administering purgatives or any other medicines that will deplete the system. Many preventive remedies have been prescribed but none have been entirely satisfactory. Common salt, sulphur, saltpetre and hyposulphite of soda mixed together in equal parts and given in moderate quantities twice a week will be as good as any. (2) Texas fever is communicated by the cattle tick—*Boophilus bovis*; but there is no danger unless the tick has been carried into your county in some way.

**A BOTCHED JOB.**—I have a yearling colt that had a navel rupture, about one inch in length. I cut it open and drew the edges of the ruptured membrane together, but left the skin open. The edges of the membrane did not unite but a thin membrane formed across and supported the intestines, and a thick flesh formed below, which insured against actual injury but left a blemish. Just then a fellow, whose card I enclose, came along and proposed to remove the blemish and have the colt sound and well in two weeks. He put on a clamp and in two weeks it sloughed off, leaving the membrane exposed as large as a teacup. At the end of six weeks the wound has healed but the rupture has enlarged to three times its first size. Is there a remedy? What can I do for a cow that will chew old bones for hours at a time? J. M. F.

**Answer.**—Your first treatment of the rupture was not right. If you had turned the colt upon its back and taken up the loose skin and either enclosed it in a clamp or tied it close to the body with a strong cord it would have got all right in a short time, but the skin may be too much thickened to do that now. It is impossible now for any one to say what is best to do without knowing the exact condition of the case. The fellow who put on the clamp made one mistake when he attempted to unite two diseased surfaces, and another when he promised a complete cure in two weeks. Let him go. "By his works shall he be known" soon enough without any effort on your part. The bone-chewing habit in cows is the result of some disease of the stomach, in the beginning, and often continues afterward from habit. If she is in good health the only way is to keep the bones away from her.

### Binder Twine Famine.

Binder twine will be very high in July and August, but Sears, Roebuck & Co., better known as the Cheapest Supply House on Earth, 171, 173 and 175 West Adams street, Chicago, Ill., will, during the month of June, sell the very best Fast Sisal binder twine, 475 feet to the pound, at 4¢ cents, and the very best Manila binder twine, 600 feet to the pound, at 6¢ cents. Freight is very low and we would advise all in need of binder twine to send their orders to Sears, Roebuck & Co., immediately.

## MARKET REPORTS.

### Kansas City Live Stock.

KANSAS CITY, June 10.—Cattle—Receipts since Saturday, 3,976; calves, 145; shipped Saturday, 103 cattle, no calves. The market was steady to a time higher. The following are representative sales:

DRESSED BEEF AND SHIPPING STEERS.			
20.....	1,410	\$5.60	26.....1,378 \$1.45
19.....	1,348	5.30	57.....1,333 5.25
94.....	1,243	5.00	101.....1,238 5.00
17.....	1,213	5.00	67.....1,185 4.80
18.....	1,239	4.75	19.....1,109 4.35
3.....	1,320	4.25	24.....1,087 4.25
19.....	1,023	4.10	5.....1,048 4.10
4.....	982	2.75	7.....837 2.75

TEXAS AND INDIAN STEERS.			
25.....	1,007	\$4.00	57.....1,012 \$3.55
65.....	823	3.40	7.....1,050 3.25
16.....	853	3.15	8.....737 2.50

6.....	1,005	3.00		
WESTERN STEERS.				
77.....	1,072	\$4.25		

COLORADO STEERS.			
64.....	1,344	\$4.80	55.....1,238 \$4.75

55.....	1,221	4.75	
SOUTHWESTERN STEERS.			
18.....	1,155	\$4.05	

TEXAS AND INDIAN COWS.			
3.....	923	\$3.10	1.....1,180 \$3.10
1.....	710	3.10	5.....876 3.10
69.....	645	3.05	30.....787 3.05
9.....	408	2.00	3.....333 1.75

COWS AND HEIFERS.			
19.....	700	\$4.00	1.....1,020 \$4.00
1.....	790	3.75	8.....980 3.75
4.....	1,315	3.60	1.....1,100 3.50
5.....	904	3.40	4.....1,005 3.20
2.....	1,045	3.00	5.....822 3.00
8.....	1,000	3.00	5.....1,000 2.85
4.....	945	2.25	2.....993 2.25
1.....	940	2.25	6.....413 2.15
1.....	470	2.15	1.....1,200 2.00
1.....	900	2.00	1.....680 1.25

COWS AND HEIFERS					
19.....	700	\$4.00	1.....	1,020	\$4.00
1.....	790	3.75	8.....	960	3.75
				1,100	3.50

Hogs—Receipts since Saturday, 3,573; shipped Saturday, 400. The market was 10¢ higher. The following are representative sales:

Hogs—Receipts since Saturday, 3,573, shipped Saturday, 400. The market was 10c higher. The following are representative sales:				
44.....	298	\$4.70	61.....310	\$4.70
61.....	286	4.65	71.....303	4.65
77.....	208	4.60	89.....232	4.60
116.....	240	4.57½	74.....222	4.55
77.....	218	4.55	35.....240	4.55
131.....	228	4.52½	35.....216	4.50
101.....	226	4.50	80.....208	4.50
17.....	270	4.50	74.....223	4.45
70.....	213	4.45	43.....212	4.45
81.....	199	4.45	62.....222	4.45
34.....	211	4.40	87.....186	4.40
38.....	199	4.35	68.....207	4.35
67.....	191	4.35	75.....165	4.32½
63.....	214	4.30	94.....177	4.25
101.....	157	4.15	111.....163	4.05
63.....	133	4.05	10.....251	4.00
21.....	124	3.75	4.....117	3.70
41.....	111	3.20	8.....77	3.00

Sheep—Receipts since Saturday, 1,741; shipped Saturday, 314. The market was steady. The following are representative sales:

441 Tex.....	98	\$3.25		
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Horses—Receipts since Saturday, 75; shipped Saturday, 20. The market was dull. There seems to be a fair request for good horses, and a good many were looking around. The prospects for to-morrow are good. The supply on hand is fairly good, but the receipts are light.

### St. Louis Live Stock.

ST. LOUIS, June 10.—Cattle—Receipts, 3,270; shipments, 700; market firmer with good demand for upper grades. Shipping grades and beef steers range, \$4.00@5.35; light steers, \$3.25@4.00; stockers and feeders, \$2.25@3.50; cows, \$2.00@3.00; fed Texas steers, \$3.00@4.25; grassers, \$2.50@3.50; cows, \$2.00@2.75. Hogs—Receipts, 1,700; shipments, 800; market 10¢@12½¢ higher and better quality on sale; heaviest brought \$4.00@4.67½; packers, \$4.35@4.60; light, \$4.25@4.45. Sheep—Receipts, 5,600; shipments, 2,200; market firmer; native, \$2.75@3.50; southwest, \$2.50@3.00; lambs, \$3.50@5.00.

### Chicago Live Stock.

CHICAGO, June 10.—Cattle—Receipts, 13,000, including 1,500 Texans; official Saturday, 403; shipments, 288; best, firm; others, steady.

Hogs—Receipts, 23,000; official Saturday, 9,044; shipments, 3,902; left over, 2,500; market active; prices average 10¢ higher; light, \$1.35@4.65; mixed, \$4.45@4.80; heavy, \$4.40@4.85; rough, \$4.40@4.55.

Sheep—Receipts, 10,000; official Saturday, 23,973; shipments, 7,705; market steady to stronger.

### Chicago Grain and Provisions.

	June 10.	Opened	High'st	Low'st	Closing
Wht—June....	79	79½	79	79½	79½
July.....	80½	81½	81½	80½	80
Sept.....	82	82½	82½	80½	80½
Corn—June....	51½	51½	51½	51½	51½
July.....	52½	52½	52	52½	52½
Sept.....	53½	53½	53½	53½	53½
Oats—June....	31	31	31	31	31
July.....	31	31½	31½	30½	31
Sept.....	31½	31½	31½	30½	31
Pork—June....	12 55	12 55	12 55	12 55	12 55
July.....	12 75	12 75	12 75	12 62½	12 65
Sept.....	12 00	12 00	12 00	12 02½	12 02½
Lard—June....	6 55	6 55	6 55	6 55	6 55
July.....	6 70	6 70	6 70	6 65	6 65
Sept.....	6 85	6 85	6 85	6 85	6 85
Ribs—June....	6 27½	6 27½	6 27½	6 27½	6 27½
July.....	6 37½	6 40	6 35	6 37½	6 37½
Sept.....	6 57½	6 60	6 55	6 57½	6 57½

### Kansas City Grain.

KANSAS CITY, June 10.—Samples of wheat met with fair demand to-day at Saturday's prices and there were more than usual on sale. Round lots out of store were offered for less than Saturday's prices without buyers.

Receipts of wheat to-day, 41 cars; a year ago, 17 cars.

Sales of car lots by sample on track, Kansas City: No. 2 hard wheat, 6 cars 80¢; No. 3 hard, 1 car 78¢; No. 4 hard, nominally, 76¢@77¢; No. 2 red, 6 cars 85¢@86¢, 2 cars 84¢@85¢ out of store 83¢; No. 3 red, 2 cars, 83¢; No. 4 red, nominally, 81¢@82¢; rejected, nominally, 79¢@80¢.

Corn met with fair demand at Saturday's prices early, but later it sold slowly and was offered at the close at steady prices.

Receipts of corn to-day, 16 cars; a year ago, 63 cars.

Sales by sample on track, Kansas City: No. 2 mixed corn, 9 cars 47¢; No. 3 mixed, 1 car, 46½¢; No. 4 mixed, nominally, 46¢; No. 2 white, 4 cars, 49½¢, No. 3 white, 1 car, 48½¢, 1 car 48½¢.

Oats were firmly held, but there was not much demand for them.

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

Sales by sample on track, Kansas City: No. 2 mixed oats, 3 cars 28¢; No. 3, nominally, 27¢; No. 4, nominally, 26½¢; No. 2 white, nominally, 31¢@31½¢; No. 3 white, nominally, 30¢.

Hay—Receipts, 34 cars; market firm; timothy, choice, \$9.00@9.50; No. 1, \$8.25@8.75; No. 2, \$7.25@7.75; fancy prairie, \$8.00@8.50; choice, \$7.00@7.50; No. 1, \$6.00@6.50; No. 2, \$4.50@5.50; packing hay, \$3.00@3.50.

### Kansas City Produce.

KANSAS CITY, June 10.—Eggs—Receipts moderate; 9¢ for candled stock.

Poultry—The market is steady. Hens, 6½¢; springs, fair to good, 14¢ per lb.; good to choice, 16¢; fancy and large, 18¢ per lb.; "peepers" not wanted; roosters, 15¢. Turkeys sell slowly; gobblers, 5¢; hens, 6¢. Ducks, 5½¢@6½¢. Geese, dull and not wanted; alive, 3¼¢@4¢. Pigeons, firm; \$1.25 per doz.

Butter—Supply liberal and feeling weak. Extra fancy separator, 15¢; fair, 12¢@13¢; dairy fancy, 11¢; fair, 9¢@10¢; store packed, fresh, 8½¢.

Fruit—Apples, supply moderate; market steady on good apples; best fancy stand, \$3.00

@7.00; common to choice varieties, \$2.00@4.00; Arkansas apples, 40¢@60¢ a box. Strawberries, there was a small supply on sale to-day, mostly common to good. Choice to fancy, \$2.75@3.00; fair to good, \$1.75@2.00. California cherries, choice, scarce, \$1.50 per box; Arkansas and home-grown, firm, \$2.00 per crate. Gooseberries, \$1.25@1.75 per crate. Texas plums, Texas sand hill, \$1.00@1.50 per crate; thirds, 50¢@60¢; wild goose, \$3.00 per crate; 90¢ per ¼ bu. Peaches, 50¢@60¢ per ¼ bu. box; 30¢@40¢ per peck. Huckleberries, active, \$2.00@2.25 per crate; Arkansas raspberries, fair supply, \$2.50@2.75 per crate. Apricots, 75¢ per ¼ bu. box. Currants, \$2.50@2.25 per crate.

Vegetables—Potatoes, market weak on new and strong on old stock, and dealers look for an advance; new, \$1.00@1.25 per bbl.; 40¢@50¢ per bu.; Colorado, market firm, 75¢@80¢ per bu.; good to choice, 65¢@70¢; common to good, 50¢@60¢. Sweet potatoes, slow; red and yellow, 25¢@30¢ per bu.

"The Farmer's Ready Reference, or Hand-Book of Diseases of Horses and Cattle." Descriptive circular free. Address S. C. Orr, V. S., Manhattan, Kas.

We can furnish you KANSAS FARMER and Peterson's Magazine, each one year, for \$1.75. Or KANSAS FARMER and Arthur's Home Magazine for \$1.65. Send to this office amounts above named.



References: Metropolitan National Bank, Chicago, and this Paper.

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Direct to market. It is the only way to get its full market value, if you ship to the right house. Our shippers testify almost unanimously that ours is the right house. The case has been tried by a jury of more than one thousand prominent wool growers and a verdict rendered. We have been found guilty of selling other peoples' wool at a higher price than they could get at home and making prompt returns. The verdict has created consternation among Wool Houses here, but rejoicing among wool growers. We receive more shipments of wool direct from the growers than any house in this market. We make quicker sales and quicker returns than any house in this market. Don't dispose of your wool until you write for our Wool Report, giving prices and the verdict of the jury over their own signatures. Sacks furnished FREE.

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COMMISSION MERCHANTS,  
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We charge no commission for handling wool.  
Returns made in full 48 hours after receiving your wool.  
96 leading Bankers attest to our responsibility.

Send for our free circular with list of references; also large list of satisfied shippers, and other valuable information. Ship us your wool and immediately upon its receipt it will be graded and a check sent for the proceeds.

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We Refer You Particularly To The Union National Bank, Chicago,

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can be made and saved by corresponding with us before you arrange to market your season's clip of wool. Our 29 years of experience in the business makes it possible for us to substantiate this statement. Our reliability is vouched for by all the commercial agencies and numerous Chicago banks and business houses. We charge you smaller commission and still get you larger returns, because being the largest wool house in the west, we can supply the largest manufacturers with any amount of stock at any time. We furnish sacks free to all our shippers, honor your sight drafts with original bill of lading attached, make you liberal advances on consignments and give you the latest and best information on the wool situation in our circular letter. Write.

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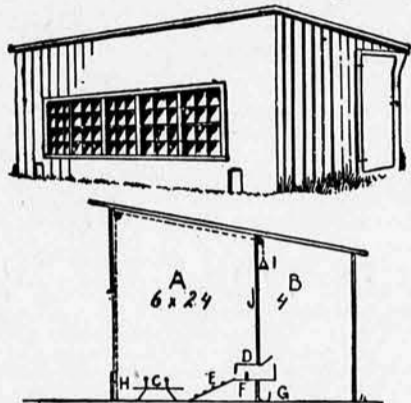
29 Years  
Business

## The Poultry Yard.

### PURE-BRED POULTRY.

To Keep It Is Profitable as Well as a Source of Pleasure.

In this age of progressive stock-raising it is food for reflection why so many farmers who pride themselves on the pedigrees of their cattle, sheep or swine pay little or no attention to the breeding of their poultry. Every farmer has more or less poultry and it is safe to say that less than one-half of the farmers who are breeding blooded stock can make any claim to having pure-bred poultry. Nothing is more pleasing to the eye on a fine-stock farm than a flock of pure-bred poultry



and nothing is more disgusting than to see a farm with a herd of blooded cattle or swine and a lot of uncared-for, scrawny, mongrel fowls running about the yards.

Any farmer by the outlay of from \$3 to \$10 for eggs or \$10 to \$25 for fowls from some reliable breeder can lay the foundation for a stock of pure-bred poultry in one year. The cockerels can be sold from \$1 to \$3 each by expanding a small sum in advertising and should bring more than enough to cover first cost. But even if they are sold on the market it has been demonstrated beyond a question that pure-bred poultry will bring from one to three cents more per pound than common barn-yard fowls. Of course they will require a little more attention. The poultry-house should be made warm, with plenty of light, and should be as convenient as possible.

A cheap and convenient poultry house that can be built by any farmer is illustrated in the figures 1 and 2. The building is 10x24, and should stand facing the south. The sides and ends can be made of rough boards, and the cracks battened with lath or strips inside and out, or matched boards can be used and lined inside with building paper. It can be made any height desired, and the roof can be made of shingles or matched and grooved boards well painted.

Fig. 2 gives an end view of the inside. A partition should extend the full length, four feet from north side. This will make an entry (A) 6x24 and a room (B) 4x24, which can be made in two pens, 6x12, if desired. C is a movable floor with two roosting poles attached. D is nest boxes extending into entry, with lid, so eggs can be gathered without going inside the pen. E is cleated board leading to nest. The space F is made of slats, so fowls can reach through to drinking trough. G. H is sliding door for ingress and egress of fowls, which can be opened and closed from entry by means of cord. I. J is door leading from entry to pen.

With a convenient poultry house and first-class stock fancy poultry will be found not only profitable but a source of pleasure as well.—R. J. Goreth, in Breeders' Gazette.

### THE POULTRY YARD.

TURN down the flame of the brooder lamp and look out for a sudden rise in the incubator's temperature when a warm day comes.

Put a pan of fresh water near the hen house where the poultry must pass in going to roost, that none may go to bed thirsty. Many will stop any drink in the morning when they come out.

POULTRY that is yarded often fails to thrive from lack of grit. Ground shell does not furnish sufficient. Provide sharp gravel or some of the granulated rock now made and sold expressly for poultry.

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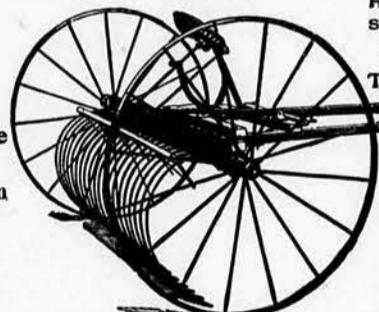
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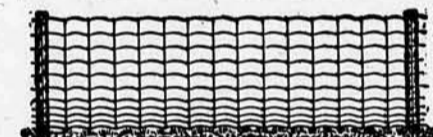
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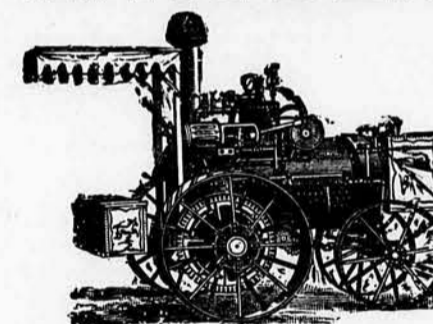


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(Continued from page 1.)

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All ages for sale. Herd headed by Dandy Jim Jr. and Royalty Medium, a son of Free Trade.

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ROYAL HERD  
POLAND-CHINAS and  
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Choice 13731, from the herd  
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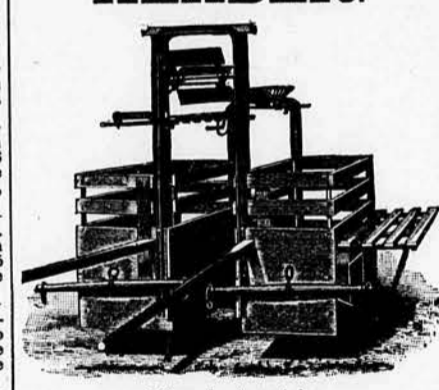
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Official Receipts, 1894.....	1,772,545	2,547,077	589,555	44,237	107,494
Slaughtered in Kansas City.....	869,646	2,060,784	387,570		
Sold to feeders.....	808,181	11,496	68,816		
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Total sold in Kansas City, 1894.....	1,677,792	2,530,896	503,116	28,903	

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