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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 \$3.00 for six months; each additional line, \$2.50 per year. A copy of the paper will be sent to the advertiser during the continuance of the card.

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We offer choice selections from our grand herd, headed by a great imported boar. New blood for Kansas breeders.
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Breeder and shipper of prize-winning
Large Berkshire Swine.
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Headed by King Lee II. 29801, Mephistopheles 32412.

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

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Satisfaction guaranteed. Write for what you want.

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Poland-China Hogs, Holstein Cattle
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REGISTERED POLAND-CHINA SWINE.
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Breeder of
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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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Registered Poland-China Swine.
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REGISTERED POLAND-CHINA SWINE
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Breeder of high-class pedigreed Poland-China swine. Herd headed by Tecumseh Grand 9178 S., assisted by Guy Wilkes 3d 12101 S. Fifty choice April pigs ready to go. Write, or better, visit the farm.
E. A. BRICKER.

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WILKES, FREE TRADE and U. S. BLOOD.
Everything reserved for Public Sale, October 30, 1895. Catalogues ready in September.
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Breeder of
Poland-Chinas.
Won seven prizes at World's Fair—more than any single breeder west of Ohio.

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Eighty head, headed by Royal Perfection 13159 S., a son of King Perfection 11315 S., that won sweepstakes St. Louis fair, 1894. Twenty-one April pigs, thirteen May farrow and twenty-five later, all by Royal Perfection. Write or come.
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For first choice pigs from stock producing winners of seven prizes World's Fair. Darkness 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

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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.]

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J. P. KILLOUGH & SONS,
mond, Franklin Co., Kansas,
PO ND-CHINA SWINE.

Headed by Spright Wilkes 13246 and assisted by Victor 13739. Our brood sows are all richly mass individuals. A fine lot of fall pigs, both sexes, ready to go at reasonable prices.

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of the Tom Corwin and L. 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.

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CHAS. A. CANNON, Proprietor,

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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 S., 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.

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

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

(Breeder's Directory continued on page 16.)

Agricultural Matters.

WEEDS, AND HOW TO KILL THEM.

Investigations of Lyster H. Dewey, Assistant Botanist, United States Department of Agriculture.

(Continued from last week.)

CHONDRILLA (*Chondrilla juncea*).

This is an almost leafless, branching biennial weed, introduced from Europe and now abundant on clay knolls in the middle Atlantic coast region and in northern West Virginia. It has a rosette of root leaves similar to those of the dandelion, but the rigid, branching stems are bare except for the inconspicuous linear bracts and the small, yellow flowers. The lower part of the main stem is clothed with small prickles. The plant begins to bloom in June or July and continues to flower and produce seeds until killed by frost. The akenes (cases containing the seeds) are nearly black, oblong and prismatic in form, roughened at the summit with small projections, from among which springs a slender beak bearing a tuft of fine, white hairs, or pappus, at its apex. This pappus enables the akenes to be carried a considerable distance by the wind.

As the plant is usually most abundant in neglected pasture land where the soil is somewhat impoverished, it seems probable that cultivation and a supply of fertilizer would soon subdue it. Left unchecked it not only occupies all the space where the grass has become thin but encroaches aggressively on strong grass sod.

WILD CARROT (*Daucus carota*).

The wild carrot is by no means a new weed, but it is spreading to new localities, and has consequently been the object of considerable attention during the past season. It is one of the most aggressive weeds of the Eastern States, and is rapidly spreading westward, having been found at several points west of the Mississippi river. It seems to thrive well in nearly all kinds of soils, and in all climates from Maine to Georgia. As capable of becoming troublesome over a wide area, therefore, the wild carrot is probably one of the worst weeds that we have.

Its flat cymes of white flowers, usually with a small purple flower in the center of each cyme, appear from June until September, and they are followed by contracted, cup-shaped clusters of small bur-like, one-seeded fruits, usually called seeds. These seed-fruits are readily attached to passing animals and are distributed in that way, or they often remain undisturbed on the plant until winter and are then blown across the snow. Too often they are found in poorly cleaned clover and grass seed. The seeds inclosed in their hard, spiny coat retain their vitality for several years, and when once abundant in the soil they are likely to cause trouble during several seasons, even though fresh seeding is prevented.

In permanent pasture the persistent mowing of the plants as often as the flower appears will eventually destroy them. They will continue to branch out from the base after each cutting until finally exhausted, so that the first mowing will often appear to increase rather than diminish their numbers. The root may be cut off with a spud some distance below the surface of the ground, a process that usually kills them at once. Pulling the plants by hand when the ground is wet, although somewhat laborious, is one of the surest methods of eradication. Sheep eating the young plants will aid considerably in keeping them down. The wild carrot is seldom troublesome in cultivated fields, which indicates that even moderate cultivation will partially subdue it, and that thorough cultivation of the fields, accompanied by the destruction of the weeds in waste places, would reduce it to comparative harmlessness.

WILD OAT (*Avena fatua*).

Whether the wild oat and wild carrot are retrograde developments from the cultivated oat and carrot are questions still unsettled, but doubtless both were introduced into this country as weeds, and they have certainly been propagated here as such. If the wild oat or wild carrot has appeared in the cultivated field it is because the seed of the

wild oat or the wild carrot has been sown. The seeds of both are nearly like those of the cultivated plants, and in case of the oat the seed of the wild plant may easily be sown mixed with good oats.

The wild oat has become most abundant and troublesome in the regions from Minnesota to Oregon and California where spring wheat is grown. In the East, where winter wheat is grown and some regular rotation of crops generally practiced, it is almost unknown. It is, of course, most troublesome in oat crops, not only crowding out the true oats, but also reducing the grade of the threshed grain by the admixture of its inferior, lighter grains. Their stiff, twisting awns sometimes cause trouble by irritating the nostrils and mouths of animals.

Three species of wild oats have been introduced into this country, all quite similar in appearance and all annual weeds. The most common species, *Avena fatua*, is readily distinguished from the cultivated oat by its usually larger size and earlier and irregular ripening, by the separate florets falling as soon ripe, and by the long, stout, twisted and bent awns borne by the first and second florets. The floral glume, inclosing the grain, is hairy below the middle, usually nearly black at maturity, and is harder and tougher than that of the cultivated oat, while the grain is very light in weight, much lighter than in any of the cultivated varieties of white oats.

The grain retains its vitality much longer than does the common oat, and may remain buried in the soil several years without germinating. It germinates best when there is an abundance of moisture and the soil is warm. To clear the seed out of the soil, therefore, the land should be stirred when it is warm and as moist as will permit good cultivation. It is understood, of course, that cultivating the land when wet, especially in clay soils, is bad policy, and it is advocated in this case only for a special purpose. The clearing of the soil can be accomplished in conjunction with the cultivation of corn or root crops. If summer-fallowing is practiced, the land should be rolled after cultivation, when not too wet, to conserve moisture and pack it closely about the seeds near the surface. Where winter wheat and rye may be grown profitably the land should be plowed as soon as possible after the spring crop is harvested, and harrowed about once a week until time for sowing the wheat or rye. Oats should be left out of the rotation so far as may be until the wild oats are subdued, as the latter growing among the cultivated oats are difficult to detect for removal, and after harvesting and threshing it is practically impossible to separate completely the two kinds of grain. In other grain crops the wild oat may be pulled or cut and removed by hand before maturity in the same manner as wild mustard or rye. Where it is very abundant, however, this plan would be too laborious to pursue with profit, and the crop would better be mown for hay or plowed under. No oats should be sown coming from farms where the wild oat is known to grow.

FALSE FLAX (*Camelina sativa*).

This plant, a member of the mustard family, has been introduced into Europe, where it has long been known as a troublesome weed in flax fields. It resembles flax somewhat, but has much smaller flowers and seeds, and its seed capsules are pear-shaped instead of spherical. It is an annual, like shepherd's purse, peppergrass, and most of the other troublesome weeds of the mustard family. In the northern part of its range, at least, the seeds are seldom matured except on plants which grow as winter annuals. The seeds germinating in the fall produce a rosette of leaves in the same manner as the dandelion. In the spring a seed stalk is developed from the midrib, and after the seed matures the plant dies. The seeds germinating in the spring produce plants that usually blossom during the same season, but seldom mature seeds, being killed too early by the frost.

The false flax has become abundant and troublesome as a weed in some

parts of Michigan and Minnesota. It is also present in several other States, but not yet abundantly enough to cause any appreciable damage. It is most troublesome in flax and in winter wheat and rye. Pastures and meadows are also injured to a considerable extent. The seed occurs as an impurity in flaxseed and clover seed and in some of the grass seeds, especially timothy.

Where the false flax has become abundant it may be necessary to omit winter wheat and rye from the rotation for a few years and raise crops that will permit cultivation in autumn. Spring grain crops may be grown, or hoed crops may occupy the ground during the summer. Hoed crops may be employed to best advantage, as the cultivation given to these crops will induce the false flax seed to germinate and thus clear the land sooner. In pastures and meadows the weeds may be pulled if they have not become too abundant; but if this work has been long neglected it will probably be necessary to plow and cultivate the land.

The false flax, like most of the other weeds here treated, is not yet one of our "worst weeds." In fact, where it is most abundant there are probably other weeds that outrank it in bad qualities. This and most of the others are either of comparatively recent introduction, or are as yet troublesome only in rather restricted localities. They are spreading and becoming more abundant nearly every year, however, and a knowledge of their habits of growth and noxious characters may aid in their detection and suppression in new localities, and possibly lead to their subjection in the areas already infested.

Thistles.

EDITOR KANSAS FARMER:—Is the enclosed a Russian thistle? There is quite a start of them in northeastern Shawnee, southeastern Jackson, and in Jefferson county, adjoining. Please give us an article on the subject and the outline of late law passed on Russian thistles. A. F. CULVER, Meriden, Kas.

—This letter was referred to Mr. B. B. Smyth, of Topeka, Secretary of Kansas Academy of Science, who replies as follows:

The piece of a leaf sent in by your correspondent, A. F. Culver, of Meriden, Kas., is not a leaf of Russian thistle, but of our common thistle, to be found almost anywhere in eastern Kansas. There are half a dozen different species with us, differing somewhat in height, thorniness, wooliness, etc. The particular kind sent by your correspondent is *Carduus undulatus*, otherwise "wavy-leaf thistle."

These thistles are biennial. They are no special harm, although they are objectionable to children on account of their long, sharp spines. They grow mostly in rich neglected lands, in fallows, in shades or copses, in fence corners and ungrassed roadsides, in damp places, etc. They are an accompaniment of man's cultivation in all northern countries. The seeds, like those of cottonwood trees, may be found thickly covering the ground everywhere at thistle-seeding time; but unless cultivation of the soil, soil itself, and weather, are just right at that time, they do not grow at all, or only in limited numbers.

If a rich field, not far from a thicket or other neglected lands near a creek, were plowed in July or August, and followed by two or three showers in as many weeks, and otherwise neglected, it will have a splendid crop of thistles on it next year. If, then, the crop be cut and burned or plowed under, whether the seeds are ripe or not, and the ground cultivated properly, there will not be a thistle to be seen next year. If neglected for two years scarcely a thistle will be seen. Some other weed will monopolize the patch. If in the same field winter wheat be sown after the fall plowing, whether it rains or not, the cultivation necessary to sow the wheat, and the wheat itself during the winter, will choke out the thistles so that none will appear next year except where the wheat is thin. Thin wheat early sown is more liable to have thistles than late-sown wheat.

The thistle generally indicates a rich soil. It is related of an old man that, when his son started out to find a new farm, he advised his son to travel until

he found a thistle large enough to safely tie his horse to while the young man ate his lunch, and there select his farm.

Half-starved donkeys are said to be fond of thistles; and though, like lettuce, they may be edible by animals, they are somewhat bitter and not enjoyed much, to say nothing of their thorns. Cattle do not touch them and sheep do not except when young and tender.

The principal objection to a thistle patch is that it forms a safe cover for rabbits, as it is almost impenetrable by boys and dogs. No one need worry on account of its contiguity. Plenty of thistle seeds will fall on your farm whether your neighbor has a thistle patch or not.

The Canada thistle is a perennial, and therein lies the objection to it. Ordinary cultivation does not kill it. It has extensively creeping underground root-like stems that, though cut to pieces and turned over by the plow or harrow, start up a young plant from each piece. It is growing in Atchison, Leavenworth, Wyandotte and other counties. It is known, in addition to its being a perennial, mainly by its being lower than most thistles and by its having a flower head that is scarcely prickly, while the flower heads of our common thistles have many long, sharp prickles.

The Russian thistle is an annual and like a tumble-weed. It has no thorns, but its little short leaves, half an inch long, have sharp points, and when the plant gets old or dry its leaves are so stiff the plant is a terror to horses and men.

The law, as passed last winter, provides, in section 1, that every person and every corporation shall destroy, on all lands they may own or occupy, all Russian thistles and Canada thistles, at such time as the Board of County Commissioners may direct, notice to that effect to be printed in the county papers not less than three weeks before the time fixed upon for their destruction. Section 2 makes it the duty of the County Commissioners to fix a time for their destruction so as to prevent their bearing seed. Section 3 makes it the duty of every overseer of highways to destroy all Russian thistles and Canada thistles in the highways and on unoccupied lands in his district. It allows the overseer or persons employed by him \$1.50 per day, or \$3 for man and team, for labor in destroying thistles on unoccupied lands on which the owner or lessee neglects or refuses so to do; the money to be paid out of the general county fund. Sections 4 and 5 provide the manner in which moneys for such labors are to be collected by tax against such unoccupied or other lands. Section 6 provides for destruction of these weeds on lands of any railway company or other corporation when not done by the company or corporation, the money required to pay for the same to be taxed against the company or corporation and raised as other taxes. Section 7 prescribes the County Clerk's duties in levying taxes. Section 8 provides penalties for neglect of duty, and makes it the duty of the County Attorney to prosecute. Section 9 makes the County Attorney liable under his bond for neglect. Other sections repeal all other laws in conflict and enforce this law. Approved March 6, 1895, and went into force April 19, 1895.

The common thistle is not considered a nuisance, generally. It is the emblem of the Scotch people.

B. B. SMYTH.

Winter Oats.

EDITOR KANSAS FARMER:—Farmers in this locality want some information in regard to winter oats. Are they suited to this climate? How do they yield? Would you advise them to be grown?

Newton, Kas. S. LEHMAN.

—This inquiry was referred to Prof. Georgeson, who replies as follows:

Referring to the enclosed card, I will say, that I know of no variety of winter oats that is hardy enough to live through our Kansas winters. The so-called hardy or winter varieties can live through the winter only in the South.

C. C. GEORGESEON.

Manhattan, Kas., July 24, 1895.

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 Meisenheimer, 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 SHEEP INDUSTRY.

BY G. W. GLICK, ATCHISON, KAS.

It is said so often that sheep husbandry and wool-growing will not pay, and the unthinking, without inquiring into the reasons for such assertions, take it all for granted, simply because partisans say so to impose upon those who are governed more by sound than facts. When sheep husbandry is considered under its present conditions there can be no reason for assuming that it can be a success or make profitable returns to the one who thinks he is in the sheep business.

Now, what are the conditions? There are over 35,000,000 sheep in the United States, and 34,000,000 of them are the veriest scrubs. Their carcasses weigh from fifty to 100 pounds. Such sheep are nearly worthless for mutton and worth less as producers of wool, in the whole United States giving an average of four and one-half pounds of wool per head. Such sheep produce an inferior quality of wool that is not wanted in the market, save at the lowest price. The mutton sold in the Chicago market in the third week of October, 1894, at prices ranging from 75 cents to \$3, making a difference of \$2.25 between a poor sheep and a poorer one. The cattle market at the same date showed the same difference between good steers that sold for \$6.15, and the lowest, though the most numerous class, sold for \$2.50, a difference of \$3.65 between the poor and the good. These facts from the daily markets teach us that both sheep and cattle are unprofitable when raised as "scrubs."

But the sheep industry is profitable to the man who raises good sheep and gives them good care. On small farms, raised in flocks from fifty to seventy-five head, they pay for their keep with their wool, while the lambs will be a net profit of over 100 per cent. To conduct this industry profitably, the shepherd must adopt the plans and methods of the Englishman. The mutton must be the important part of the industry and the wool clip the secondary consideration. This method involves the raising of the best classes of mutton sheep—thoroughbreds. Not that they should be all registered in the herd book, but that they should be of the same quality and grade as those that are registered, by always using the best obtainable bucks. This point is illustrated by the fact that almost every farmer in Kansas is raising thoroughbred hogs, that bring top prices in the market and are always salable and profitable, though they do not register their hogs, but always buy their males from the man who does keep his herd registered.

Such sheep of the approved mutton breeds of the down families will shear ten to fifteen pounds of best quality of "medium" wool and bring the highest price for the carcass, which will weigh 200 and 250 pounds, and by extra feed and care of lambs they can easily be made to weigh 300 pounds, and 400 pounds has been reached by a skillful feeder. The lambs of this class can be made to weigh 100 and 150 pounds at five to seven months old. Such lambs sell readily at 5 to 6 cents per pound, and often more. I read in an English agricultural paper, a short time since, that lambs of the kind and weight mentioned, sold as high as 15 cents per pound. I noticed a sale of rams made in England the past summer, when Shropshire rams sold from \$250 to \$600 for the highest. These facts indicate that our English cousins understand

that only the best quality of thoroughbred males are profitable to use. When we adopt the plan of raising thoroughbred mutton sheep, the returns, both of wool and mutton, will be a remunerative business.

We all know that Kansas, as a State, is especially adapted to sheep husbandry. The conditions for sheep-raising are all favorable. A dry climate and very healthy, with soil that seems to be a sure preventive of foot-rot, and when other diseases occur they only prevail where they are introduced and are easily eradicated.

There are potent reasons why the sheep industry has not assumed greater proportions. Cattle will not thrive and do well on pastures where sheep run. The droppings and the scent of the sheep seem to render the grass offensive to cattle. Therefore the man who goes into the sheep business to any great extent must arrange to raise only sheep, or have separate pasture for his cattle. Folding at night is required as a necessary protection against wolves and dogs. Other conditions prevent sheep and hogs from running together, as hogs soon learn to kill sheep, and lambs are never safe in pastures with grown hogs. These facts have prevented the extension of sheep-raising in Kansas. Farmers found that cattle and hog-raising was the most profitable business, as hogs and cattle could be run together very profitably, especially when the cattle are corn-fed. Hence it was not the objection to sheep, *per se*, but because the cattle and hog business combined was the more profitable. These conditions will change in time and then men with small farms will engage in the sheep industry, while those with large farms will stick to cattle and hogs.

There is another question that affects the sheep industry, or rather that part of it that relates to the wool clip. The wool product of the United States is over 165,000,000 pounds. It has been iterated so often, and by those whose opinions people thought they could rely upon, that a protective tax levied on foreign wools made wool-raising profitable, and if that tax was removed the price of wool would be seriously reduced. This theory is plausible and has been taken advantage of by partisans to deceive the people and mislead them as to the real facts as they are shown to exist by the statistics of the wool trade in this country. If I should say that a protective tariff depressed the price of American wool, I know some one who is perfectly honest in his opinions would assert that such a statement is untrue. Nevertheless, it is a fact established by statistics and market reports so conclusively that no one who cares to know the truth can doubt. It is also a fact, established by the same kind of evidence, that a protective wool tariff depresses the price of wool. This assertion I know will be doubted by many who are equally honest in their opinions. The great trouble in America is that we take wild and unauthenticated statements for granted without applying to the true sources of information for verification. We have had a duty levied on all foreign wools since 1862. The duty was then increased in 1867, and so continued up to 1883, when another slight increase was made, when in 1890 the highest duty ever imposed was laid.

From Manger & Avery's annual wool circular (a standard authority on wool statistics) we find that in 1865 the price of fine wool was \$1.02 per pound, medium \$1 per pound and coarse 96 cents per pound. In 1867, when the duty on wool was increased, the price dropped in 1868 to 48 cents per pound for fine wool, 43 cents per pound for medium and 38 cents per pound for coarse. The price continued to decrease until 1889. Wool was quoted by the same authority in October of that year at 33 cents per pound for fine wool, 37 cents for medium and 31 cents for coarse wool. We find by the same authority that, notwithstanding the highest duty ever levied was put on wool by the law of 1890, and yet during the same months in 1891 prices dropped 2 cents per pound, and yet 2 cents more in 1892, and still a greater decrease in 1893.

From the report made to the United States Senate by its Committee on Ag-

riculture and Forestry, February 15, 1894, I make the following quotation from page 20: "The average price of fine wool in January, during the period of seven years from 1864 to 1870, was 66½ cents per pound; during a period of seven years from 1886 to 1892, it was 32½ cents—a decline of more than 50 per cent., and it was much greater for the other months. The average of same grade during the years 1850 to 1860, both inclusive, was 55½ cents." These facts, if they do not convince, ought at least to induce people who care to know the facts in such matters, to examine into them before assumptions are made on which business ventures are approved or condemned.

There are two important facts that this erroneous idea about wool tariff has produced in this country. The first is that it has deterred many people from entering intelligently into the sheep industry and conducting it on a business basis by raising thoroughbred mutton sheep and using only the best males in their flocks. The men now engaged in the sheep industry, who are conducting the business on the methods indicated, are making money rapidly. The other effect of a protective tariff was to build up a shoddy industry, so as to furnish a market for the rags of Europe out of which to make cloths for Americans.

We are told by the census report of 1890, that \$96,000,000 are invested in shoddy mills. What becomes of the shoddy or ground-up rags made by those mills? We all know it is sold to the manufacturers of supposed woolen goods, at an average price of about 5 cents per pound. They mix it with wools and manufacture it into the counterfeit woolen goods that we have been clothing ourselves with, instead of genuine woolen goods, that would keep people warmer and last twice as long.

It was given in evidence before the Committee on Finance of the United States Senate that each mixed lot of wool and shoddy prepared for spinning contained from 200 to 400 pounds of this shoddy for each 1,000 pounds made into yarn and woven into cloth, making about 49,000,000 pounds used in working up the wool clip of America. The unthinking man who takes it as conceded that a duty on wool increases the price, I think, on reflection, will conclude that 49,000,000 pounds of shoddy used as wool has more to do with the depression of the price of wool than any tariff duty can make good. The high duty on wool stimulated the manufacture of shoddy and induced the manufacturer to use it on account of its cheapness as compared with wool.

All political economists concede that where tariff duties are too high "smuggling" will be practiced. The American people are learning that a protective policy as to wool induces the use of shoddy, and for the same reason. Therefore, I think that if the shoddy mills had not produced and sold shoddy in competition with American wool that the prices of American wools would have been about 30 per cent. higher than they have been since the woolen manufacturers have been smuggling it into woolen cloths.

Now, do not misunderstand me. I do not claim that this great depression in wool is all due to the wool tariffs, but I do claim that with every increase of duty on wool a fall in the price has occurred. This is proven by the records of Manger & Avery, of Boston, Mass., kept for the past forty years.

There are other matters than the duty that affect the price of wool. Wools are mixed by the manufacturer in the making of all kinds of cloth. This mixing of wools is absolutely necessary in the manufacture of different kinds of cloth, hence many kinds of cloths can be made only by admixture of foreign wools. This affects the price of American wools, for if the kinds of mixing wools cannot be had at a fair price, the American wool used in such cases is not wanted, hence the price is depressed.

Supply and demand materially affect the prices, as indicated before. The use and price of shoddy has affected and depressed the price of wool about 33 per cent. The large increase of

The Only One To Stand the Test.

Rev. William Copp, whose father was a physician for over fifty years, in New Jersey, and who himself spent many years preparing for the practice of medicine, but subsequently entered the ministry of the M. E. Church, writes: "I am glad to testify that I have had analyzed all the sarsaparilla preparations known in the trade, but



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is the only one of them that I could recommend as a blood-purifier. I have

given away hundreds of bottles of it, as I consider it the safest as well as the best to be had."—Wm. COPP, Pastor M. E. Church, Jackson, Minn.

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sheep, making a large increase in the wool clip, depresses the price by an over-supply of the lower and coarser grades of wool. The coarse wool being used largely in the manufacture of carpets, therefore the carpet trade materially affects the price of the coarse or low-grade wools. Wars have also had the effect of increasing the price of coarser wools by the extra demand for army clothing.

There is no industry that has more outside contingencies to affect the price than wool, and if I have been able to present some of them so as to make their effect clear to your minds, I am well paid for my labor. Yet with all these contingencies (and all other business have equally as effective ones), the wool business and the sheep industry is a profitable one if managed according to good business conditions.

In Consequence of the Rains.

EDITOR KANSAS FARMER:—The mud is now as thick as the dust was, and still pouring down more rain every night, and it has caused something to affect our nice corn fodder, in the way of a swelling two feet or more long, coming out about half way up the stalk. We have not noticed this for years. Guess before we cut it for fodder we will have to dehorn it or go through and knock them off with a club—horse can't go through between the rows.

It is "just immense," "just beautiful," to see these corn fields loaded down with fruit again. Just think! big, fat cattle, lard hogs, and the old mule's ribs covered over again. And won't my Short-horns be happy, and those steers I shall full-feed, and the herd of Poland-China hogs that I could not sell for no one had the "stuff" to buy and feed them. And won't it look nice to see the ribs of the old corn-cribs springing out instead of in, as they do now. I feel kind of spry when I get up from the table after devouring eight to ten of those big roasting "swellings," all caused by a little rain, the beautiful rain. Let it come! But the sandburs wink at the sunflowers and say: "Dig in; they can't come in with their cultivators to rip us up and we will choke this late corn and feed, and will climb the apple trees." ELI BENEDICT, Medicine Lodge, July 21, 1895.

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Irrigation.

SUBSOILING AND IRRIGATION IN OSBORNE COUNTY.

Special correspondence KANSAS FARMER.

In my last contribution I gave some account of conditions in Jewell county—alfalfa, etc.—but space did not permit me to tell of an interesting fact communicated to me, in relation to subsoiling, by Mr. R. F. Vaughan, editor of the Jewell County Monitor.

Mr. Vaughan says he subsoiled fifty acres of corn land. He ran the subsoil plow in the furrow of the lister, about twelve inches below the bottom of the furrow, and planted the corn with drill in the same furrow. He planted about two acres with lister, the usual way, without subsoiling, to see the difference, if any there may be, in favor of subsoiling in the results obtained; and the difference, whatever there is, in the growth of the plant is in favor of that which was subsoiled. In another respect, however, subsoiling has scored a big point. A portion of Mr. Vaughan's corn field is rolling, and some of his neighbors said to him: "If we get heavy rains your subsoiled furrow will wash out to the depth the subsoil was loosened up." Well, the heavy rains came. In the part of the field which was not subsoiled, the furrow was washed out to the depth the corn was planted and the plant was also washed away. On the other hand, on that area which was subsoiled no portion of the soil is washed out of the furrow and the plant, of course, remains unharmed. This is so because the water, as it came from heaven, found the way open to easily get into the reservoir below, and not running away, as it otherwise would, the soil in the furrow remained unmoved.

This corresponds with the theory of those who advocate subsoiling. It, therefore, has a higher value than is usually accorded to it. It not only provides a convenient place for the reception of water as it falls and where it falls, but it is the means of saving the rich surface soils of the farmer from being carried away to his neighbor's farm on a lower level, or possibly into the bed of the Atlantic ocean, to be used in building a new continent for the new world we are to have by and by. But we must abandon this tempting line of thought.

I want to give the readers of the FARMER some fresh thoughts on irrigation and alfalfa-growing, as I gleaned them from men in Osborne county who do things. Every man who assists by carefully-conducted experiments in the solution of problems in the interest of a higher and better agriculture is a public benefactor. We have many such in Osborne county. I will speak of but three at the present time, who are among the most enthusiastic over the results obtained from sub-irrigation. These are Andrew Linn, Dr. M. F. Hudson and John A. Fouts.

Andrew Linn, with an investment of \$1.50 in tiling a year ago, had such surprising results that he was thoroughly convinced of the superiority of sub-irrigation, so much so that he invested last spring about \$165 in tiling and proceeded at once to irrigate with tiling two and a half acres. He now has a plant which is ideal in every sense of the term. When the soil lacks moisture, he draws one plug and the water goes singing on its smoothly-paved way to perform its mission in the world. When there is an excess of water, by heavy rains, he draws out a plug at the other end of tiling and the soil is relieved of its superabundant moisture. This model plant has already been shown to the readers of the KANSAS FARMER, and no account in detail is needed now. I will only add that Mr. Linn is as enthusiastic as ever over the results of his experiment in sub-irrigation. Notwithstanding the heavy loss, through a cruel hail storm, which he sustained recently, he says his two and a half acres will yield him a revenue above a living for his family of about \$500. Mr. Linn keeps an accurate account of his expenses and of the revenue derived, and at the end of the season will make an exact showing of the profits of the enterprise.

Mr. John A. Fouts, one of the enter-

prising business men of Osborne, finds time to irrigate nearly a half acre for a garden. With Mr. Fouts it is recreation rather than labor to look after the wants of growing plants, and a fine assortment of fresh vegetables and fruits on his table nearly every day of the growing season is compensation many times over for the small expenditure of money involved.

The most enthusiastic, however, of all, and the one who took hold of the new idea of irrigation by tiling, with the firmest grip, and who had done most to induce others to make the experiment, is Dr. M. F. Hudson, of Osborne. Dr. Hudson is a broad-minded, intelligent, public-spirited man. His great interest and enthusiasm in irrigation has overcome his aversion to appearing in print, and for the first time he comes out, and the readers of the FARMER are treated to fresh, clean-cut thoughts which are carved out of his own experience in the ideal way of irrigating. The area irrigated, comprising the garden of Dr. Hudson, is small—only thirty by fifty feet, about one twenty-fifth of an acre—but it is the most interesting and highly instructive object-lesson in irrigation I have yet seen. There are just two things that make it so. The one is the introduction of water to the place below the roots, where the plant can best utilize it in its growth. The other, the application of a fertilizer—stable manure—to the surface. You see in that small area growing to the highest degree of perfection all of the vegetables that usually grow in a garden, and in addition, celery, spinach, etc., and in such quantities that a family of seven feasting on the choicest vegetables every day in the growing season cannot equal in consuming capacity the producing capacity of that little garden. For instance, the first planting of peas, which it was thought would furnish one or two good messes for the family, when one mess was taken off another mess quickly came, and so that first planting of peas continued to furnish all the peas the family wanted for most two months—May and June. The Doctor says he invested \$3 in tiling. The labor of caring for the garden for him is pure recreation, the most healthful kind, too, and the annual revenue from the investment is at least \$120, or at the rate of \$10 per month the year round.

Now, a few words about Dr. Hudson's experience in alfalfa-growing. As usual, some persons in Osborne succeeded last spring in getting a good stand of alfalfa, and some did not. Dr. Hudson got a good stand. He sowed sixteen acres on bottom land, on his fine farm, southeast of Osborne eight miles. He plowed his ground deep in March. Soon after he levelled it with planker, then harrowed it thoroughly and repeatedly. His plan was to repeat the harrowing about every week until the soil was in proper condition for planting. The harrowing was done to prevent weeds from starting and to pack the soil and make a firm seed-bed. But, in addition to this, one of the essentials of a proper condition was a sufficient amount of moisture in the soil to enable the seed not only to sprout quickly but to sink its roots so deep into the subsoil that a cessation of rainfall and consequent drought which might follow, would not seriously affect the vitality of the plant. Good rains fell on the last day of May, and on the third day of June he put in the alfalfa seed with a grain drill, putting seventeen pounds to the acre. The Doctor kindly proposed that I accompany him in his buggy to the farm and see the alfalfa for myself. It was an extremely pleasant ride and the alfalfa I found was an extremely good stand. It stood about eight inches high and comparatively few weeds on the ground. "There is but one fault to find with the stand; it is too thick," the Doctor said. With that he took the measure of six inches in the drill row and counted the plants. "There are just twenty-nine plants, and that is about twenty-five plants more than there ought to be," he said. These plants must be thinned out, and they will be by the survival of the fittest before the plants can strike down strong roots into the sub-

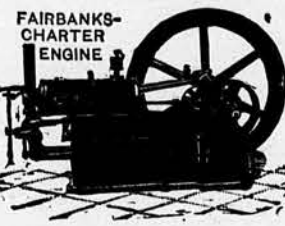
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soil deep enough to withstand the trying ordeal through which the plants will be required to pass in the years to follow. The Doctor says: "Why sow so much when more than half must be killed out?" He says Mr. Brown, of Beloit, is right when he says five pounds is enough.

There are persons in Osborne who subsoiled in the spring and labored at great cost to put their ground in good condition for alfalfa and failed to get a stand. Subsoiling in the spring, with dry weather following, puts the soil in worse condition for germination and growth than the soil would be without subsoiling. The dry weather in the spring up to May 30 accounts, in my judgment, for the failure to secure a stand of alfalfa last spring on ground which was subsoiled. Subsoiling can only be beneficial to growing crops when the reservoir made thereby is well filled with water.

July 24, 1895.

M. MOHLER.

Sub-Irrigation Experience of Dr. M. F. Hudson.

EDITOR KANSAS FARMER:—The past twenty-five years have so fully demonstrated the fact that our present system of farming in central and western Kansas has been a failure that any discussion of this proposition is unnecessary at this time.

The question now arises as to what is the solution? The first answer would effectually settle that, viz., "Emigrate." But many of us have spent the best years of our lives here and don't like that ending, so we have been trying to solve the problem in another way. A large and intelligent class of our citizens feel that they have found it in conservation of moisture, which includes subsoiling, irrigation, intensive cultivation, tree-planting, impounding of water, etc. Any one of these present subjects for many papers, and have, in fact, been exhaustively discussed.

But there is one branch that seems to me to have been neglected. For that reason I wish to call attention to it. Some of us have tried it and found it effective, and if it continues to prove to be the good thing we think it will, we desire that all can have the advantages of it. It is sub-irrigation. It has been partly condemned in the west, but the criticisms there are not applicable here, because our soil is altogether different. Conservation of water being so important a factor in Kansas, we, in this system of irrigation, feel that it is the ideal way, only requiring, as compared with surface irrigation, one-fourth to one-third as much water and about one-third as much work to keep the ground properly mulched and free from weeds. The thorough saturation of the soil makes it practicable to use fertilizer freely, especially barnyard manure, thereby giving prolific yields. No storage ponds are needed, the earth itself proving to be the best of reservoirs into which you can pump your

water the year around, regardless of zero or torrid weather. The effective storing of water to the depth of several feet during winter, when the highest winds prevail, requires but little additional water in the summer to mature your crops. With us it gives results beyond the most sanguine expectations, and relatively much better than surface irrigation. With all the advantages enumerated above, the extra expense is no consideration. For \$200 you can put in an eight-foot steel wheel and tile two acres, and with \$30 to \$50 per acre more, you can add to your area, running up to probably five acres. I have no hesitation in saying that your \$200 plant will make more money than the average quarter section in central and western Kansas.

Aside from the relative value of this system of irrigation it has a value of the greatest importance, not only to western Kansas but to all sections of the country, for the purposes of the disposal of sewage, in small towns and country residences, which probably can be best illustrated by my own plant. I carry the water of a bath tub, wash-bowl and kitchen sink through a two-inch galvanized pipe to the back part of my town lot and connect with three rows of tiling, laid level, thirty inches below the surface, twelve feet apart. This arrangement at the same time disposes of my sewage and irrigates a garden thirty by fifty feet, doing away with the expensive and foul death-breeding cess-pool. The amount of water used is about equivalent to what a family of same size throws out at the back door, creating the unsightly fly-breeding pool that we too frequently see. The results of that small quantity of water are marvelous. I have a family of seven and it has given all the vegetables that we can use since the first of May, and will continue to do so until the hot-beds of next spring come into use. Heretofore it was impossible to get good vegetables, the price high, quality poor. To be brief, it has cut my grocery bills in two.

The results of this system have been greater than our expectations, and if other sections of the State should wish to experiment, my neighbors or myself will gladly enter into the details of expense, distances, depth, etc., in some future number of KANSAS FARMER.

Osborne, Kas. M. F. HUDSON.

State Irrigation Convention.

The third annual State Irrigation convention is hereby called to meet at Garden City, October 1 and 2, 1895. All who are interested in irrigation from any standpoint, and all who want to see Kansas restored to her rank as an agricultural State, are invited to be present to see what is being accomplished, and how.

The Kansas Irrigation Association, by its Executive committee.

JNO. E. FROST, Chairman.

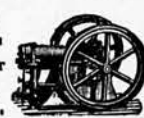
H. V. HINCKLEY, Secretary.

Topeka, Kas., July 27, 1895.

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Wind Power and Irrigation.

Abstract of graduating thesis of Fred E. Rader, of Manhattan, at Agricultural college commencement, 1895.

There was a time when wind and water were the only motive forces at man's command. During that period the old "Dutch" windmill came into prominence as a utilizer of wind force. For ages they were used in Holland and adjacent countries, but, upon the discovery of the use of steam, further improvement upon them ceased, and it was left for the skillful, energetic "Yankee" to develop this form of motor. To-day we find, placed within easy reach of the farmer, wind engines that are marvels of industry, if properly handled and cared for.

Since the irrigation question has been causing so much agitation throughout the semi-arid West, the windmill has assumed a new economic value, as one of the possible solutions of a question upon which depends the future development of western Kansas land, aggregating several million acres.

Underlying an unknown area of this country, water, in abundance, can be found at depths varying from a few feet to several hundred. There are comparatively few places where this subterranean supply can be utilized, directly, so, if any large part of this territory be irrigated, it must be by lifting the water from wells. It is unnecessary to emphasize the importance of cheap power for this purpose. Fuel is scarce and dear upon the Western plains, prohibiting the use of steam by the single-handed farmer. The wind is undoubtedly the cheapest form of power known at the present time, and the plan of putting a part of the wasted energy which annually sweeps over our prairies, to such a good use, is one that appeals strongly to the farmer. Both he and the manufacturer are interested in the successful solution of this problem, and the State Legislature has manifested an interest in it by authorizing the establishment of twenty experimental plants, with a view of determining its practicability.

The depth from which water can be profitably pumped is not settled, and probably will not be so long as improved pumping machinery is made. Practical experience seems to show that from a depth of fifty feet, windmill irrigation is an assured success. In some instances water enough has been obtained from wells 200 feet deep to irrigate several acres, besides furnishing water for the stock.

It is well for the farmers to be somewhat conservative about embarking in an enterprise of this kind. Let us go slow and make our progress sure. We must get experience first. If you have a windmill standing idle three-fourths of the time, when it might be running, make use of it, and learn the proper use of water. Any man who cannot thus supply his table with fresh vegetables has only himself to blame, even in dry, windy Kansas.

In a few years the Southwest will be full of these small irrigating plants, owned and controlled by the farmers. This means success every year; it means the intensive farming of small tracts of land; it means the establishment of many small homes; it means a more desirable, habitable country, with superior educational facilities. Irrigation in western Kansas means all possible things. Water we must have. Without it we have nothing; with it, everything. Without it, we must emigrate; with it, we can irrigate.

Invention--Its Relation to the Farmer and Farm Laborer.

Abstract of graduating thesis of E. C. Trembley, of Council Grove, at Agricultural college commencement, 1895.

We are familiar with the crude tools and machines used by the soil tillers long ago. Cultivation was difficult then, but the inventive mind comes, and gradually greatly improved plows, seeders, cultivators and harvesters come into use. Social and physical changes result; the inside and outside of the farmer's home are alike beautified. The mold-board plow was introduced. Man was taken from the harness and domestic animals used instead.

Our improved listers enable us to

plant corn by the hundreds of acres where before we planted but five or ten acres. From the hoe and double-shovel have come our corn cultivators, and to run them is a comparatively easy task. The sickle and cradle are used by us no more. An improved mowing machine cuts our grass and improved rakes put it in windrows. The binder comes, a most wonderful invention, tying as delicate yet as firm a knot as human fingers. Scarcely one-third of a century old, yet how indispensable. Intelligent cradle-swingers welcomed this machine. There can be so much more grain grown that the labor in caring for it is sufficient to provide employment for all. Within the last five years corn harvesters have become numerous; every implement dealer handles them. By them the work can be done cheaper, easier, and in the proper season. In the place of the flail we have great steam threshers, without which our Western wheat farmers could never have existed.

Conveniences, numberless and varied, are now placed at the farmer's hands where not one was there before. Our Western prairies are decked with towering windmills which are pumping the water for thousands of head of live stock. A good windmill, with care, will last eight or ten years, at least, and with small reservoirs, hand pumping need not be done. The investment is small, but the returns great.

Go into the farmer's house. He has good furniture, good literature. Friction matches were not in use three-quarters of a century ago; the sewing machine duplicates hand work; the spinning wheel is only a relic; washing machines, churns, creamers are all found there.

There comes now that problem of transportation. Without our transporting facilities we could never raise wheat or corn as we do. Transportation would be too high. For the same reason, much that we now have would never have been brought to us.

From a mere slave, the farmer has come, with all these conveniences, to be a respected and intelligent individual. He has been emancipated from severe manual labor and has become independent. By machines, his intellect is refreshed, his home made pleasant. The farm laborer has not been thrown out of employment by the introduction of these machines. His labor has been of a different kind, only.

Invention has had a great hand in development, greater, perhaps, than any other factor, and were it not for this our present state of advancement would be impossible.

The "Hopper-Dozer."

Here is a sample of the fine literary style of the gifted writer, Noble L. Prentiss, as applied to an ordinary subject:

"When the grasshopper made his memorable campaign in Kansas in 1874, public opinion was divided as to the feasibility of fighting him. A minority, a very small one, believed that provided the grasshoppers were not reinforced human skill and industry might devise means to destroy them, and fire, smoke and certain machines were proposed, but the much greater number of farmers and others held to the ancient belief that man is powerless as against 'natural' calamities, and that it would be of no more use to contend with the grasshopper than with lightning.

"It is now reported that in Minnesota, in view of the presence of a great army of hoppers, this ancient superstition has been discarded and that Prof. Lugger, State Entomologist, has taken the field at the head of the brave farmers of the Red River valley, to give the hoppers a turn with a machine called a 'hopper-dozer.' The 'hopper-dozer' is a huge tin dust-pan mounted on low runners and drawn by horses. At the back of the pan is a trough filled with kerosene. As the 'dozer' moves, the miserable hoppers are swept back into the pan, and as soon as they touch the kerosene they are killed or seized with locomotor ataxia and are done up. The machines cost \$1.50 each, are furnished by the State, and Prof. Lugger has 400

'hopper-dozers' at work in the infested section. Prof. Lugger claims that with this number of 'dozers' he can destroy from 800 to 1,200 bushels of grasshoppers every day. When one considers the number of grasshoppers in a bushel it will be seen that no army of grasshoppers that ever flew can long sustain such ravages.

"It may be remembered that in 1874 a machine resembling the Minnesota 'hopper-dozer' was employed in Dickinson county, Kansas, and was said to have been a California invention. It was, however, constructed of cloth, and it was complained that it passed over the ground without making a clean sweep of the hoppers, and a very few of the machines were used. The Minnesota 'hopper-dozer,' made of tin and with the kerosene attachment, and used by hundreds, inaugurates a new style of warfare which promises to be effective. It is a most hopeful indication that the Minnesota farmers are willing to make a fight for their fields, and not lie down and take the injuries of the hoppers as a 'visitation of Providence.' Providence is as much on the side of the farmers as the grasshoppers."

August Notes.

Push the plowing for fall wheat.

It is not too late yet to sow turnips.

A good corn harvester will save time and labor.

Do not allow the millet to get too ripe before cutting.

Hogs intended for early market can be pushed now.

After plowing the wheat ground is a good time to haul out manure.

Rush the stock intended for early market. It is a good time to commence now.

Rather than to let the fruit in the orchard go to waste, turn in the hogs and sheep.

Commence feeding new corn gradually and increase until animals are on full feed.

If a green crop is to be plowed under, try to do the work when the plants are in full bloom.

This month is usually hot and dry. Be sure that the stock has plenty of good water.

Sow a good patch of rye. It will make good pasturage both this fall and next spring.

When the threshing is done, see that the straw is stacked so that it will keep in good condition.

Select out the stock intended to be kept through the winter. Let the supply of feed determine the number.

Especially with the dairy cows, if the pasturage gets short it will be best to commence feeding some soiling crop.

Generally it is best to sell a product whenever it is fully ready; but if considered best to store, be sure to store so that it will keep.

When oats are to be used for feed it is of no special advantage to thresh them. They are a complete ration in themselves when fed in the straw.

If early lambs for market are to be raised, now is the time that the ewes should be bred. Be sure that the ram is a full-blood, and in addition possesses individual merit.

Take a little pains now to keep the cows giving a full flow of milk. It will be easier to maintain a good flow than to allow them to run down and then attempt to get them back again.

Where several brood sows are kept a good plan is to discard one or two, according to the number kept, of the older and less vigorous ones and put in a young one to take her place.

When the second growth of clover is allowed to mature seed as little handling as possible should be given. A good plan is to cut with a self-rake reaper and let cure well and then gather up and haul direct to the thrasher. Every time it is handled there is a loss.

It is poor economy at this time to allow the stock to graze down the pastures too close, and especially so when the weather is hot and dry. The small amount of feed secured does not pay for the damage done to the grass plants. N. J. SHEPHERD, Eldon, Mo.

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

"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.

No Risk

in Vacuum Leather Oil. 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.

Kansas Money.

Wanted—applications for loans on good city or farm property. Interest 6 to 7 per cent., according to size of loan. Oscar Bischoff, agent for Kansas capitalists, 628 Kansas avenue, Topeka, Kas.

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

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

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

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

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Rubber and Gandy Belting.
Thresher Tank Pumps.

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CRANE COMPANY, Kansas City, Mo.

The Home Circle.

To Correspondents.

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

RUSTLING CORN.

When the long, bright day is done,
And the last rays of the sun
With a fading light the hill-tops fair adorn,
It is sweet to rest a while,
And a moment to beguile,
In listening to the rustling of the corn.

Oh, that music soft and low,
When the summer breezes blow,
Bringing back the happy scenes of childhood's
morn.
When through all the summer day
I have whiled the hours away
Playing hide-and-seek amid the rustling corn.

Through the dim, uncertain light,
I can see the phantom bright,
Of a loved one who, in childhood's rosy morn,
From our home was called away,
And her shout and laughter gay
Seem to echo faintly through the rustling corn.

Like a dream those pleasures flew,
With the years returned anew;
Little ones within my cottage home were born,
And once more I hear the shout,
See the running in and out,
Happy children hiding in the rustling corn.

Many years have passed away,
And my hair is turning gray,
Gone are all the loved ones of life's rosy morn,
But I feel their presence near,
Long-forgotten voices hear,
While I listen to the rustling of the corn.

—Hannah B. Strout.

GREEK MYTHOLOGY.

Abstract of graduating thesis of Mabelle G. Selby, of Manhattan, at Agricultural college commencement, 1895.

To the Greeks, nature overflowed with deities. Every stream had its protecting god, every fountain its presiding nymph, every grove and forest was the home of some deity that the Greeks loved as ardently as they did their nearest friends. Their gods were intense personalities, possessing human passions, human desires, and holding council on the summit of Mount Olympus, which was beyond the impenetrable mists.

The Greeks had implicit faith in these legendary personages, and actually existing work was ascribed to them. Was the fair youth drowned in the sea, the sea nymphs, seeing his beauty, took him to their blissful abode, where he would no longer feel the pains of earth. A lovely maiden, gathering flowers on the plain and is lost. Is she dead? She was claimed by gay spirits who took her to their home, where she is now reigning in pomp and grandeur.

This was the noblest form of idolatry. They thought of God as a father of their deities and superior only in years. The Greeks nourished the germ of true religion. There was a worship of humanity. No one can worship something of which he knows nothing whatever, and so the Greeks attributed to their gods those qualities of which they were conscious. They worshiped man as he is—pure or inebriate, generous or selfish, benign or rapacious, with his foul appetites and vile passions. Their gods are represented as being easily influenced and readily provoked, as ideals of physical perfection. It is not strange that the Greeks loved beauty in form, beauty in dress, beauty in everything, since their surrounding scenery was so well adapted to the cultivation of the aesthetic side of their natures. Their temples were made by the best sculptors in order that the gods might be pleased to dwell within. They were not massive, tomb-like structures, nor were they edifices with pinnacles and domes towering toward heaven. They were simple and artistic, ideal homes, well worthy of the gods, who were simply deified men and women.

But in succeeding generations the faith began to recede. The oracles became voiceless, the temples which had been made for the abode of their gods were deserted and the religious feeling of the people was less capable of being influenced than their patriotism.

Greek mythology had prepared the way for Christianity by bringing about an intellectual change. It helped to abolish the worship of material things which had previously been such a great barrier to Christianity. It was a practical religion, making the hearth seem the shrine of domestic affections. It looked forward to greater than human power, and above all it revealed that grandest of all grand ideas—the idea of immortality.

What Shall Our Pleasures Be?

Abstract of graduating thesis of Lucy Ellis, of Havensville, at Agricultural college commencement, 1895.

Pleasure is a kind of feeling which stimulates the will to action, tending to sustain or produce it. It is that which is pleasing to the intellect or the senses.

Our conceptions of what constitutes enjoyment and our capacity to enjoy, is so varied and numerous that it is difficult to say what our pleasures shall be. The un-

educated rich man's pleasures are not those of the active, imaginative man. All the wealth of the one is nothing, only as it adds to his personal comfort or selfish ambition; while to the other, so small a thing as a wooden toothpick will suggest the tranquil forest where, as a part of some noble tree, it grew and spread its green branches by the side of some soft murmuring brook. He sees beauty and finds pleasure in everything; even the smallest weed has pleasure for him. Many of us do not realize how much pleasure nature has in store for us. She is ever ready and waiting to comfort, soothe or inspire.

The pleasures in which we indulge, whether physical or mental, should be those that will strengthen and make more perfect, both body and mind. The laughing, happy-hearted child is the one who most enjoys physical pleasures, such as running, jumping, etc. His are very different from those of the aged man, who finds his in memories of the past. The middle-aged man's are found in active work and in the thought of duty well performed.

The pleasure of imagination is one of the simple ones and may be indulged in without causing trouble or weariness to the body and soul, as do the pleasures of the senses. The ones that bring us most joy are those of reason and discretion, those that teach us to command ourselves.

The pleasures of the senses are enjoyed by many young people, and Burns thus truly says of them:

"But pleasures are like poppies spread,
You seize the flower its bloom is shed;
Or like the snowfall in the river—
A moment white, then lost forever."

Not so of mental pleasure. It is increased by repetition, approved of by reflection, and strengthened by enjoyment.

But the real true pleasures, the ones we long remember and so often think of, are the quiet, unassuming pleasures of home, and we scarcely realize how great they are until gone from them forever.

But we must not overlook the pleasure of reading, for without it our lives would be narrow and dwarfed.

The last of which we will speak, the most delicate, the most sensible of all pleasures, consists in promoting the happiness of others, in lifting up and helping to make light the burdens of toiling humanity, and although what we accomplish seems so small, let us remember

"No stream from its source
Flows seaward, how lonely so ever its course,
But some land is gladdened.
No star ever rose
And set without influence somewhere.
No life
Can be pure in its purpose and strong in its strife
And all life not be purer and stronger thereby."

The Hypnotic Medium.

Abstract of graduating thesis O. A. Otten, of Brenner, at Agricultural college commencement, 1895.

Would you walk through subterranean canals, through caverns deep in the earth, through dungeons shut out from the light of the sun, through the dark and gloomy paths in the investigation of an individual in the hypnotic state, with no candle to illuminate the surrounding? Then make prominent superstition; draw close the obscure veil of mysticism, and cling to the old dogmas of previous ages. But, would you see clearly the way, and avoid the dangerous passages and pitfalls flanking either side, turn on the search-light of science; throw aside your crude, uncouth theories, and look not to the supernatural for an explanation of these phenomena.

When Mesmer propounded his theory of mesmerism, there were supposed to be currents of fluid circulating between the hypnotist and the hypnotized; to-day they say it is suggestion acting through the mobile elements of the soul that makes the phenomena of hypnotism possible. Then, only hysterical and irritable individuals and people of weak minds were liable to hypnotic influence; now, the strong and healthy, of vigorous minds and bodies; men and women of educated brains and hardened muscles succumb to the influence of the hypnotist and do his bidding in every particular, even more nearly than the child obeys his father. True, all are not hypnotized with equal ease, just as all are not susceptible to suggestion in the same degree, but an idiot he must be who is not at all susceptible to the suggestions of an able hypnotist.

Wonderful, you say, it appears to be, the hypnotist gains control of an individual by simply making a few passes of the hands before his face, and impressing upon his mind the fact that such and such a state exists, or is about to exist. Wonderful, indeed, to see the hypnotized exerting every effort, straining every muscle to do what the hypnotist says he cannot do; to see that vacant stare, that blank expression on his face as he tries in vain to recall his own name; to see him exhibit all the emotions indicative of the enjoyments of a delightful sleigh-ride, and to see him stand with unchanged countenance as the cruel knife lacerates his flesh. Yet, wonderful as are these things, they are no more wonderful than the successful treatment of disease by the Christian Scientist, and but little more than the production of laughter and tears in others by laughing or crying. The first time a person is hypnotized,

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

Royal Baking Powder

ABSOLUTELY PURE

peculiar feelings, weird thoughts and strange fantasies, never before experienced, crowd themselves upon his mind for recognition. It is the attempting of the individual to account for these new sensations or the connecting of them with mysterious, that unbalances the weak minds and makes the hysteric more hysterical. However, few people suffer any deleterious effects from hypnosis, and danger never arises from the inability of the hypnotist to bring the medium out of the hypnotic state, for if a stimulus of a kind opposite to that which produces the state, or a snap of the finger fall to awake him, he passes into a normal sleep and awakes as in the morning.

But in order to protect people from the impositions of fads, from the carrying out of a command to murder, from the impression of ideas upon their minds foreign to their belief and opposed to their welfare, stringent laws should limit the practice of hypnotism to physicians of reputation and ability.

Holland's Great Pianist Coming.

The musical season of 1895-96 will not be lacking in pianists. Among others, Martinus Sieveking is to be here. Sieveking is a Hollander by birth, coming from an old and aristocratic family, which dates its ancestry back in the fifteenth century. From his earliest infancy he displayed characteristics indicative of his future career. He is a man of magnetic temperament and striking personality, being over six feet in height and magnificently proportioned. Mr. Sieveking will come to the States in the fall and play throughout the country. He will make his debut in New York city.

Harvest for the Laidress.

The revival of the white skirt is assured. Single skirts of percale finished with a fine scallop around the edge of the hem and a ten or twelve-inch scalloped flounce above it will be worn in the street with summer dresses. With more elaborate house dresses a skirt of gainsock is worn. This is finished with three, four, or five overlapping flounces, about five or six inches deep around the bottom. These ruffles are quite generally trimmed with edges of French valenciennes or frills of point d'esprit.

As to Renovating Mattresses.

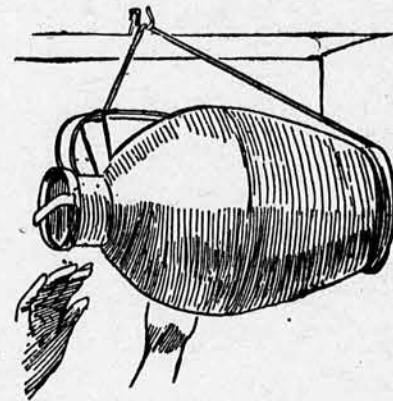
Mattresses are a source of vexation to many housewives who cannot afford to send them every year or two to the upholsterer to be renovated. The thrifty German woman, who never considers any kind of housework too laborious to be undertaken by herself or daughters, empties the mattresses to be cleaned; sees that every particle of the hair filling is picked apart and shaken free of dust. Then, after washing in strong soap suds and rinsing in lukewarm water, the filling is squeezed as dry as possible and then hung up to dry in the sun and air in large bags made of mosquito netting. In the meantime the ticking has been washed or a new one substituted, and she is ready with her long, strong needle and twine to sew together again as well as any upholsterer.

MAKE YOUR OWN BUTTER.

Here is a Handy Churn, Small, Cheap and Effective.

This illustration represents an ordinary Jersey milk jug converted into a churn. It is fitted with a view-glass and made air-tight by a simple arrangement of the lid.

When suspended, as shown in the cut, it will swing with a range of several inches, and, although it has no internal



beaters or dashers, it will make butter in from five to ten minutes.

Of course, a device so small as this is not intended for making butter in great quantity, but as much as five pounds may be made in it readily. The illustration is taken from Cassell's Magazine.

Deafness Cannot be Cured

by local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the eustachian tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars, free.

F. J. CHENEY & CO., Toledo, O.
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HIRE'S Rootbeer

A 25 cent package makes 5 gallons. Sold everywhere.

The Chas. E. Hires Company, Philadelphia, Pa.

The Young Folks.

SUMMER.

When summer brings the roses
At first her steps are slow;
Her beauty she discloses
In glades and valleys low—
In leafy nooks bestowing
Her beauties—half concealed
As though afraid of showing
Her charms at once revealed.

But ere we miss the sweetness
That haunts the steps of May,
She dawns in full completeness
In all her fair array;
No longer half beholden,
But fully shining forth,
In emerald robes and golden
She clothes the joyful earth.

A bounteous hand she reaches
Across the gladdened plain,
The soaring lark she teaches
A new and sweeter strain;
She lingers where the rill glides
Beneath the alder screen,
Or dances down the hillside,
Where ferns are cool and green.

She veils the thorny hedges
With hop and bindweed wreaths;
Among the gray rock ledges
A sweet perfume she breathes.
With no bare spot neglected,
She works with silent speed,
Till beauty is perfected,
And summer reigns indeed.

—Susan Jardine.

DOG ENJOYED HIMSELF.

Mrs. Lyman's Protector Was More Playful Than Useful.

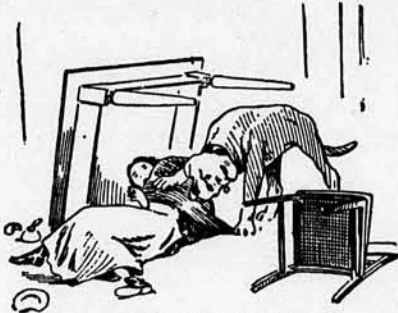
"When we moved up on the brook farm," said Mrs. Lyman to a friend, "Aaron was determined for me to have a good dog to protect me in case he was away, and so he got a big mastiff. You know men that are real smart about some things will be sort of weak where pets are concerned.

"Now, for clear intelligence and gentleness I should have much rather called in the heifer; for of all the awkward, lumbering things, that dog was the leader.

"He seemed to grow in spots. First his head was too large for his body, and then his legs grew long; and then there were times when his feet looked big enough for an elephant. He was a playful creature in his heart, but he couldn't gambol much more than one of the oxen.

"He had a noble, expansive kind of a bark, though, that showed his breed, and so when Aaron went away I did feel a little safer.

"The first morning, when I got up to make the fire, he came walking round and seemed as clever as could be. The



THE DOG ENJOYED IT.

wood I was using was rather green, and so I decided to put a little kerosene on it. I suppose I got on more than I thought, for it flared up awfully when I put a match to it, and the first I knew my sleeve was all afire.

"I didn't lose my presence of mind at all. I got down and rolled myself up in a rug, head and ears, and began to roll over the floor.

"It put the fire out, but that dog thought it was something to amuse him, and began to be playful. He gave a curious sort of a howl, and landed his fore paws, which weighed ten pounds apiece, on my chest, and lolling his tongue out, looked down at me.

"I tried to beat him off, but he took it for play, and rolled me over and jumped about me until I was completely bound up in the rug.

"He would give a short sneeze, and dab his paw into my hair. He scratched my face, and tore my dress into strips.

"Every time I tried to rise he would give a little bark, and butt me down again with his head. The more I shouted, the faster and louder he barked, and, springing about, he overturned chairs and tables.

"I don't know where it would have ended if one of the farm hands hadn't heard the commotion, and come in. I was bruised and torn and in a terrible temper.

"Aaron sent the dog off, and we haven't had another; but he is like

most men about a dog, and says now: 'He was only a little playful.'—Youth's Companion.

ADVENTURE IN PERU.

A French Savant Rescued from Certain Death Just in Time.

A French archaeologist, M. Charles Wiener, had occasion to measure the height of an interesting Indian observatory in Peru. The ancient structure stood at the top of a precipice, at the foot of which ran a river. The undertaking seemed simple enough, but it proved to be an exciting adventure, with some painful results. M. Wiener thus describes it:

I proposed to take the elevation by a simple sounding, using for the purpose a rope knotted after the manner of a log-rope, and weighted at the end



JUST IN TIME.

with a bar of iron. As I approached the edge of the cliff I was seized with an attack of dizziness. I stepped back, therefore, and lying flat upon my stomach, slipped forward until my head was over the abyss, and my arms were supported by the last available rock.

Then I let down the rope and in six minutes the iron struck the ground on the shore of the river. Satisfied with the result I started to draw up the rope; but the iron, without my knowing it, had caught in a fracture of the rock, and my sudden pull upon it gave me such a jerk that my left elbow lost its point of support, and I fell flat upon the shoulder and began sliding forward.

My constrained position for the last ten minutes had partially benumbed me; it was impossible for me to get up on my feet; and here I was slipping over the edge of the precipice.

Instinctively I put out my hand and seized the only object within reach.

It was a cactus, of the sort known as the torch-thistle. The thorns were driven into the palm of my hand. I cried out with pain, and happily my mule-driver, who had kept prudently in the rear, rushed forward, seized me by the legs, and drew me back to safety.

It took me three hours to extricate the hundreds of spines, barbed like so many fish-hooks, and it was more than three days before I recovered from the torment they had caused me.

Mountain Goats Are Stupid.

Although the mountain goat is a very sure-footed and level-headed animal, he is said by those who have hunted him (of whom I confess I am not one) to be a very stupid animal and easily killed when once the hunter reaches his haunts. In actual weight he is about the size of the Virginia deer, but in bulk he seems to be larger because of his shaggy fleece of wool and hair. The horns are small, smooth and jet black, and the hoof is a strange combination of rubber pad on the inside and knife-edge on the outside, to hold the owner on snow, ice, or bare rock without slipping.—W. T. Hornaday, in St. Nicholas.

This Cat Was Very Intelligent.

A Georgia lady has a cat named Fannie, of which she is very fond. Fannie has three little kittens, and one day the lady said to the servant: "I can't keep all those kittens. I must have them drowned." Fannie was in the kitchen, and she trotted right away to her family. The next day she and the three kittens were missing, and two days later Fannie appeared alone, looking rather hungry. Her mistress caught her up and stroked her fur. "Fannie," she said, "go right away and get your kittens, or they will be starved." Within an hour the cat was back with her kittens, and nothing more has been said about drowning them.

TWO DEVOTED STORKS.

Real Bravery Shown by Them in Very Trying Circumstances.

A very interesting tale of devotion is told of two storks, birds that are notably fond of their young. During a storm a barn in the village of Lowenberg was set on fire by lightning, and a nest containing two baby storks was threatened by the flames. The parents viewed the scene from a distance in great consternation, and after a little deliberation the mother-bird took wing, darted into the nest, and seizing one of the little birds in her beak, carried it off to a neighboring field. The father flew down to the little one, and mounted guard while the mother returned for the other. When she arrived the flames were enveloping the nest, and the young stork fell through the charred wood into the burning barn below. Nothing daunted, the mother dashed through smoke and fire, and returned bearing her second little stork in her beak, and then she flew away.

The next day some people in an adjacent village discovered a wounded stork. She was unable to stand, and on examining her, both legs were found to be badly burned. This was the brave stork which had rescued her children. The bird was removed to the Rathaus, and the burgomaster provided a bed for it, and called in the physician, who attended the wounds. In the meantime the male stork ascertained her place of refuge, and paid her daily visits to inquire for her condition, and to bring reports, after his own fashion, of the young. The school-children brought her food, the physician treated her every day, until she recovered. Finally, one bright morning, she flew away with her devoted husband.

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KANSAS FARMER.

ESTABLISHED IN 1863.

Published every Wednesday by the
KANSAS FARMER COMPANY.

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No. 116 West Sixth Avenue.

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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.

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KANSAS FARMER and *Semi-Weekly World* (N. Y.), you can have for \$1.65 one year.

A correspondent who wants to purchase, complains that the breeders of Minorca poultry do not make themselves known in the advertising columns of *KANSAS FARMER*. No doubt breeders of these fine birds would find notices in our advertising columns profitable.

"Dairying for Profit, or the Poor Man's Cow," by Mrs. E. M. Jones, is a most valuable book for every farmer's wife, that has had a large sale at 25 cents per copy. We have a number on hand which we will close out at a very low price to our readers, viz., 10 cents, or five 2-cent stamps. First come, first served. Order quick.

A bulletin on "Kansas Weeds" has just been issued from the Kansas Experiment Station, by Prof. A. S. Hitchcock and his assistant, Mr. J. B. S. Norton. The first part of the bulletin treats of "What Is a Weed?" "The Seed," "Germination," "The Seedling," and "Descriptions of Seedlings." This is followed by an extensive descriptive list of Kansas weeds, a key to our common weeds, and several pages of plates illustrating Kansas weeds. The bulletin shows much careful labor in its preparation and is so arranged that with its aid most Kansas weeds can be determined without much previous knowledge of botany.

H. V. Hinckley, of this city, who has been conducting a series of several hundred experiments on the flow of the underflow, for his own benefit, says that the value of the underflow and the extent to which it will serve in the redemption of Kansas, are not generally overestimated; that the many vague statements as to the general speed of the underflow are worse than useless; that the speed of flow in some cases is a thousand times the speed in other cases. Mr. Hinckley's results should be public property and we regret that he is not employed in a public capacity to report upon the methods of utilizing the underflow and the extent thereof.

Chicago market for cash wheat started in last week at 66½ cents for Monday and closed at 70½ cents for Saturday. The market reviews speak of the market as encouraging and cite as a basis for encouragement the fact that outsiders are again manifesting an interest. This means, of course, that there is some prospect of getting in another lot of "lamb" to be shorn. Nothing is so pleasing to the "talent" on the grain markets as an active outside interest—"investment" of money by country dealers, clerks, merchants, farmers, anybody, so that they "invest." Such investments are almost sure to result in the addition of the sums invested to the "talent's" exchequer.

SHALL FARMS BE SMALL OR LARGE?

The question of the relative cost of production on small and large farms has been taken up in Germany, with the painstaking attention to details which characterize German scientific investigations. In the matter of plowing it is well understood that on a small farm it is not possible to have as long lands as may be arranged on large farms. The question of the loss of time in the frequent turnings necessary on small farms was, by the German investigators, made a subject of inquiry. It was found that half of the time of the man and the team may be consumed in turning on a short land. Other operations of the farm give varying advantages, but always in favor of the large farm.

It has been the hope of many philanthropists that the day may come when the land shall be owned in small holdings by men who work for themselves in its tillage. This hope has presented, as the ideal condition of happiness, the home on the little farm well tilled. The fact that some of the great farming schemes have come to bankruptcy, and the further fact that many of those who have developed great ranches find the care of their varied interests irksome and seek to sell them out in smaller holdings, have done much to strengthen the view that, to be profitable, farming must be carried on only on such scale that the interest of the owner can be made effective in every operation.

The allurements of the cities for men of wealth, as well as for the tramp, are likely to continue. But the activities of the cities are rapidly concentrating in the hands of giant concerns under capable managements. The opportunities for middle-class folks are disappearing in the cities. A few are becoming owners; a few capable managers are being employed; the many are becoming wage-earners with all the uncertainties of the wage-earner's position. Commercial houses either grow to gigantic proportions or they fail. Manufacturing enterprises develop to great industries or they are absorbed or displaced. The opportunities in town for the capable man of small or medium capital are much like those Jonah experienced with the whale, i. e., to be swallowed and spewed out. The capable man is, however, produced as rapidly as ever, and when he realizes, as eventually he must, that most of his kind are taken into the maw of modern industrial and commercial development, and there to have the vim crushed out of them, so that they are not only content to become wage-earners, but even consider themselves lucky to get a chance to work under a master for low wages—when he realizes this will not the capable man of moderate means cease his determined effort to get into town?

The most inviting field to-day presented to the capable man is the agricultural, and some of the most capable, rather than enter the maelstrom of the city, are turning to the farm. But farming requires capital! Yes, and brains. Governor Morton, of New York, has a fine farm, finely improved and finely stocked. It is immensely valuable. Some years ago he sent to Kansas for the brains to operate it and secured a graduate of our Agricultural college, who remains to this day. Other illustrations might be added.

The large farm, capably managed, by the man who considers it more important to attend well to his business than to do anything else, brings success and profit, as compared with the smaller concern, just as in other lines of effort. The large farm must eventuate in much the same way as the large mercantile and the large manufacturing establishment, i. e., absorbing the small ones. The era of large farms is approaching. It may take a long time for development, and the revolutions of society which may intervene cannot be foretold. But the spirit and tendency of the age are toward large operations under capable management, and, while one of the last of human callings to be affected, the preliminaries have been laid and the movement in that direction has commenced. The fact of the almost complete appropriation of the arable

lands of the world, the fact that the owners of land will in course of time—not very long time—be able to assume the role of monopolists, these two facts make the agricultural field an attractive one for investors, and the fact that it presents the best openings for capable managers makes it an attractive one for the necessary brains; and the fact that, barring the allurements of the cities, the condition of the wage-earner is best and happiest on the farm, and the further fact that he must very soon be content to take work where he can get it, seem to settle the remaining conditions incident or necessary to the advent of colossal agricultural operations under concentrated managements.

This may not be the most desirable development for civilization, but it is the development which under present conditions is coming.

A GREAT DEBATE ON SILVER.

A notable event, which has enabled the daily papers to place before their readers matter of greater interest than usually characterizes their news columns during mid-summer, has been the great financial debate in Chicago between Hon. R. G. Horr, one of the editors of the *New York Tribune*, and W. H. Harvey, the author of the "Coin" books. Mr. Horr is a veteran debater, was for six years a member of Congress and has enjoyed a reputation for "wiping out" his opponent by his ready wit and the skillful handling of his side in many a wordy contest. Prior to the debate, Mr. Harvey had prominence because he had written and published a book—"Coin's Financial School"—which has had a phenomenal sale, and has called forth "answers" in every gold standard paper in the country, in numerous magazines and in many books which have been written for the avowed purpose of refuting it. A few weeks ago a joint debate was had in Chicago between Mr. Harvey and Prof. Laughlin, of the Chicago University, in which the friends of each side claimed the victory. Later, the Illinois club arranged for the great debate of ten days, which was closed last Monday. Singularly enough, the subject selected for discussion was the book, "Coin's Financial School," and speeches were limited to ten minutes each, so that the debate was a running fight over the statements and conclusions of the book. Mr. Horr attacked and Mr. Harvey defended them.

From the first it was apparent that the veteran debater had met, in the nervous young author, an opponent worthy of his best efforts. Very soon the leading gold standard papers began to ridicule the entire debate. The audiences, however, grew in numbers until the seating capacity of the hall admitted no further increase.

A few minor errors were found as to facts stated in the book and were frankly admitted by the author. But it is singular that, after the ten days' bombardment by Mr. Horr, the little book was left as unshaken as to its general accuracy as was "Uncle Tom's Cabin" after the slaveholders' attacks upon it.

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

It is reported that one of the Studebakers, of wagon-making fame, has determined to enter upon the manufacture of bicycles on a large scale. He finds that the bicycle has cut heavily into his buggy business and has so far investigated the matter as to assure himself that a first-class bicycle can be produced and sold at \$35 with as much profit as he makes on a \$125 buggy. It is safe to assume that if Mr. Studebaker shall make bicycles he will make good ones and have a big sale for them. It is thought by some, whose opportunities entitle their opinions to credit, that first-class bicycles can be made and retailed at not to exceed \$1 per pound, which would bring the price down to \$25 or \$30.

SYNOPSIS OF MR. H. R. HILTON'S ADDRESS AT JUNCTION CITY.

On Wednesday afternoon of last week, Mr. H. R. Hilton, of Topeka, addressed the farmers of Geary county, on the invitation of the business men of Junction City. The court house was crowded with farmers interested in the subject of "Soil Moisture," notwithstanding their fine prospects for a corn crop this season. Mr. Hilton illustrated his lecture profusely with large charts, showing influence of high temperature and evaporation on corn yields, the root growth of corn, the forms in which soil grains arrange themselves in the soil and how the water moves from particle to particle in the soil mass. Experiments demonstrating this movement were made before the audience by the application of water to soil and sand in glass tubes, showing the different movements in sand and fine soils, also in moist and dry soils of the same sample. The application of water to some local subsoils from the high prairie revealed some weak points, the knowledge of which will enable the owners to farm more intelligently in the future, as the greatest difficulty the farmers have to contend with is the inability to locate the weak spot in the soil or in their method of soil tillage.

Much of Mr. Hilton's lecture has already been made familiar to the readers of the *FARMER* by his paper on "Soil Moisture," delivered at the annual meeting of the State Board of Agriculture in this city, in January last, and it is only necessary to present the "new things" developed by Mr. Hilton in his recent studies and presented for the first time at Junction City.

By way of introduction, he stated briefly the latest theories regarding origin and distribution of plant food in the soil, practically as follows:

"Soil is composed of about 95 per cent. rock and 5 per cent. organic matter (the latter varies from 1 to 10 per cent). Of the many ingredients that have a part in building up the plant structure and developing food, three are important: Nitrogen, potash and phosphoric acid. The two last named are abundant in Kansas soils. Nitrogen, the most valuable and costly of all soil ingredients, is a product of organic matter, and its availability for use of plants is dependent, first, on amount of organic matter present, and second, on conditions favorable to soil fermentation or the decomposition of the organic matter. The main products of this decomposition are ammonia, carbonic acid and water, the active agents being micro-organisms of a low order. The carbonic acid acts on the mineral elements of the soil to prepare for the plant's use what it needs of these.

"The micro-organisms in the soil are believed to be the agents that furnish the carbonic acid and nitrogen, and the quantity of each is dependent on their activity, and this activity is dependent in turn on the presence of water, air and heat in right proportions.

"Water is the most important of all the elements because of its many offices in the laboratory work in the soil. It is necessary to aid in dissolving all plant food, which must first be reduced to liquid form. It is the transportation medium to convey the plant food to the roots, and through the roots to all the organs of the plant. It is the largest constituent of the plant itself. The micro-organisms are most active and soil most fertile where water is present in amount equal to 35 to 50 per cent. of what the soil is capable of holding when fully saturated, or from 15 to 20 per cent. of the bulk of the soil.

"Air is an important element, because it furnishes the oxygen necessary to promote activity in the organisms that convert the organic matter into carbonic acid and ammonia. The soil must be permeable and allow the air to circulate freely to insure activity in soil life.

"Temperature is an important element, as water and air alone will not insure activity in the bacterial life in the soil until a certain temperature is reached. The organisms of fermentation are most active at a temperature of 80° to 90°, those that convert am-

monia into nitric acid at a temperature of 65° to 80°.

"If any one of these three elements, water, air, heat, are deficient or in excess, that deficiency or excess controls the quantity of plant food in the soil and its use by the plant, and too much water or heat is just as injurious as too little; hence we can see the importance of the physical properties of the soil and methods of cultivation to plant nutrition.

"The farmer may not always know why he cultivates the soil in a certain way, but whether blindly or intelligently, his aim is to bring about such a condition of the soil as will insure a high moisture content, free access of air, and sufficient heat to promote activity of the micro-organism of the soil.

"In order to get the fullest benefits of applied manure these conditions must be supplied. For instance, a soil richly manured will give five times the plant food, with a moisture content of 20 per cent. that it will when the moisture content is 10 per cent., all the other elements being present in right proportion; but a soil unmanured with a 20 per cent. moisture content will give a larger yield than the highly manured soil with 10 per cent. moisture content, but under the same conditions the manured soil with most organic matter yields most food to the plant. The capacity of the soil to hold water is also increased by the presence of plenty of organic matter, so that manure unlocks fertility from the soil itself by increasing its water content as well as furnishing directly an increased supply of organic matter for decomposition."

The inference was drawn from these statements that the soil could safely be cultivated as deeply as there was evidence of organic matter in the soil, and this is rarely less than ten inches and often over two feet in Kansas soils, provided air and temperature needed for the micro-organisms could be maintained at these depths; or the surface soil could safely be turned down ten to twelve inches, if heat and air could freely penetrate to that depth. Under Kansas conditions there is no doubt as to sufficient temperature being maintained one foot deep in Kansas soil. The air supply is simply a question of cultivation. The water supply, the most important and erratic, can, by improved methods of storage and tillage, be made available to a much larger extent than at present. The physical properties of the soil and how to handle them to maintain the highest moisture content was presented practically as given already in the FARMER, and if not preserved, our readers can obtain it by sending 6 cents to F. D. Coburn, Secretary of the State Board of Agriculture, Topeka, to pay postage on the March quarterly, a pamphlet which every farmer in Kansas should have in his possession. It is a text-book on alfalfa, subsoiling, irrigation and general farming.

At the close of Mr. Hilton's lecture the farmers in the audience pled him with questions for over an hour, and whether fully convinced or not as to his deductions, went away with some new ideas as to formation and character of their soils, how water acts in the soil, how it is wasted, how it may be saved, and hereafter will have a new point of view from which to look at the problems that constantly present themselves in a new country with conditions entirely different from those presented in older States from which they came.

Prof. Robert Hay rendered valuable assistance in the collection of local soils, and the lecturer was greatly aided by Mr. J. E. Payne, of Manhattan, an ardent student of soil physics and botany, in the preparation of experiments and exhibition of charts and roots to the audience.

The FARMER hopes to present to its readers at a later date some new experiments made by Mr. Hilton and presented at Junction City for the first time, showing different effects of heavy and light showers on the structural arrangement of soil grains and how subsoiling may aid in preventing puddling and compacting of surface soils during heavy rains.

Send for our latest premium and clubbing list.

Weekly Weather-Crop Bulletin.

Weekly Weather-Crop Bulletin of the Kansas Weather Service, for week ending July 29, 1895—T. B. Jennings, Observer Weather Bureau, Director:

CONDITIONS.

The western half of the State has been well watered the past week, the rainfall ranging from one inch to over five inches, the heaviest rains reported being in the central western counties. In the eastern half of the State little or no rain fell, and on the 26th and 27th the temperature became intensely hot.

RESULTS.

EASTERN DIVISION.

The crop conditions continue favorable. Early-planted corn is about made, but needs some rain to finish filling. More rain is now needed for the late planting and for pastures and meadows. Threshing is progressing and fall plowing has begun.

Allen county.—Needing rain; wild hay very good; flax threshed an average of ten bushels.

Anderson.—Corn needing rain; flax averaging ten bushels.

Brown.—Needing rain for corn, pastures and stock water; threshing in progress; wheat averaging ten bushels, oats thirty; fall plowing begun.

Cherokee.—Heavy dews interfere with haying.

Coffey.—Needing rain to fill corn ears and make big hay crop.

Crawford.—Hay crop good, with fine prospect for corn.

Doniphan.—Corn doing well but needs rain.

Douglas.—Corn looks fine; timothy ripening.

Franklin.—Crops doing finely.

other counties favorable conditions are generally reported.

Barton.—All crops growing fairly well; good rains the past week but more needed for late corn and potatoes.

Butler.—Most corn in good condition, except in southwest part of county; more rain needed to insure a full crop.

Clay.—Splendid growing weather; early corn in milk.

Cloud.—Much of the corn killed by drought; pastures all dried up; rain needed badly.

Comanche.—Excellent rains; all crops in first-class condition.

Cowley.—Corn needs rain; sorghum and Kaffir corn doing well; late potatoes good in some localities.

Dickinson.—Will not raise enough corn for feed; heat of past week too intense; hay and pasture lands also drying up.

Ellsworth.—Early corn made; all other crops in fine condition.

Harper.—Hot winds slightly damaged late corn; broomcorn, potatoes, etc., doing well.

Kingman.—Crops in splendid condition; corn needs rain some; wheat and oats slightly damaged in the stack; grass and potatoes good.

Kiowa.—All crops in fine condition.

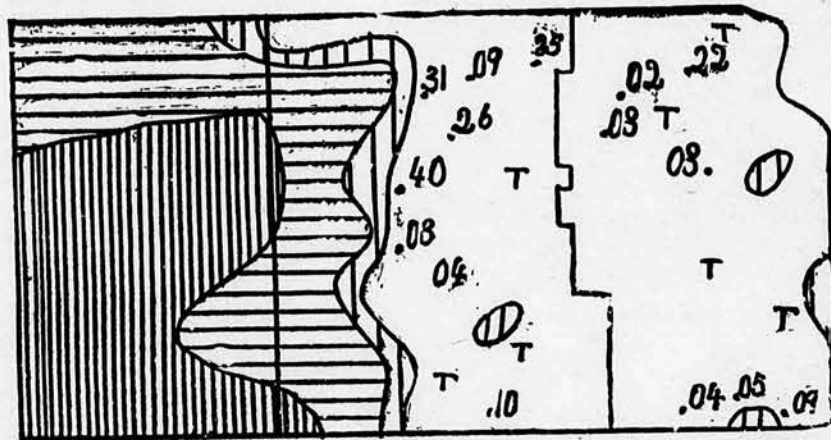
Lincoln.—Corn promises a fair crop; sorghum splendid.

McPherson.—Corn past all danger; a large yield insured; wheat turning out fair.

Marion.—No rain but corn is all right; oats yielding well.

Mitchell.—Fair growing week; late corn will need more rain.

Ottawa.—Corn will have to be cut unless rain comes soon.



ACTUAL RAINFALL FOR WEEK ENDING JULY 27.

Greenwood.—Hot winds and no rain; crops need moisture; hay will be light; in north part of county conditions are better.

Jackson.—Early corn about made in south part; rain needed now for the rest.

Johnson.—Favorable for haying; corn and fruits maturing finely.

Labette.—Pastures good; corn needs rain for filling.

Leavenworth.—Crop conditions favorable.

Linn.—Corn, pastures and stock in good condition.

Lyon.—Corn in excellent condition; flax, pastures and grass good.

Marshall.—Corn fine, pastures good.

Miami.—Rain needed for corn; fruit fine and abundant.

Montgomery.—Corn has done well but needs rain now to continue.

Morris.—Corn all right, but needs rain, except in northwest corner being cut to save fodder.

Nemaha.—Dry and hot, suffering for rain.

Osage.—Corn and meadows in good shape.

Pottawatomie.—Corn good but needs rain; haying begun; stubble plowing in order.

Riley.—Crops splendid but beginning to need rain.

Wabaunsee.—Corn mostly in roasting-ear; early corn made; all crops excellent.

Wilson.—Beginning to need rain.

Woodson.—Corn needs rain.

MIDDLE DIVISION.

Everything is in good shape over this division except in Washington, Republic, Cloud, Dickinson and portions of Ottawa and Morris, where the rains have been few and light. In the

Osborne.—Corn, potatoes and pastures flourishing; wheat harvest finished.

Pawnee.—Harvesting about finished; oats and barley fair; corn promises a good crop.

Phillips.—All vegetation is growing rapidly; corn, potatoes and sorghum in fine condition.

Pratt.—All crops in splendid condition.

Republic.—Hot winds of past few days very damaging; rain needed.

Reno.—Crops injured in bottom lands by floods, crops on upland prospering.

Rice.—Excellent growing week.

Rush.—Corn, sorghum, etc., doing well; wheat slightly damaged in the shock; harvesting almost completed.

Russell.—Corn in fair condition.

Saline.—Corn not suffering yet, but rain needed soon.

Sedgwick.—Rather dry the past week but everything doing fairly well.

Stafford.—The late rain fine for corn, sorghum and grass; harvesting about completed.

Sumner.—Most corn in roasting-ear; wheat turning out very light.

Washington.—Corn suffering from drought; some fields almost dried up; pastures becoming brown; millet poor.

WESTERN DIVISION.

The rains are proving of great value to this division and crops of all kinds are in first-class condition. Harvest is now progressing except where delayed by rains. Corn, broomcorn, the sorghums, millet, grass and alfalfa are fine.

Clark.—Too wet for harvesting, but splendid growing conditions.

Decatur.—Harvesting slightly retarded by rains; corn, millet and cane promise an immense crop.

Finney.—Wheat harvest in progress; oats rapidly improving since the rain;

second crop alfalfa slightly damaged. Ford.—Corn never looked more promising; floods in bottoms spoiled much alfalfa, hay and oats.

Gove.—Corn in splendid condition; wheat harvesting begun.

Graham.—Prospects of an immense corn crop.

Gray.—Splendid growing weather; wet for harvesting.

Lane.—Corn and oats never looked better; wheat-cutting barely begun.

Logan.—These rains of great value; wheat not yet ripe; other grain is being harvested.

Meade.—Oceans of corn; cane and potato crop assured; wheat in stack and shock badly damaged.

Ness.—The excessive rains have greatly retarded harvesting; much grain in shock badly injured.

Norton.—All crops promise well; oat harvest commenced; spring wheat not yet ripe.

Scott.—The late rain has put everything in splendid condition.

Seward.—Plenty of rain; all vegetation flourishing.

Sheridan.—Harvest progressing; some grain slightly damaged; broomcorn and other crops growing rapidly.

Sherman.—Wheat and barley harvest in progress; corn and pastures in fine condition.

Thomas.—A splendid growing week; corn could not be more promising; late wheat greatly improved.

Trego.—Corn, cane and millet growing rapidly; harvesting in full blast.

Wallace.—Wheat harvest has commenced; prospects for corn excellent; potatoes and alfalfa doing well.

Publishers' Paragraphs.

People desiring cheap land and homes will be interested in the new advertisement this week, of "Ten Acres Enough," by the Aransas Harbor Real Estate Co., Aransas Pass, Texas.

"The Book of the Fair," published by the Bancroft Co., Auditorium building, Chicago, will be prized when all other works of similar kind are discarded. Agents find it a valuable work to handle in any part of the country. Write the publishers for terms.

The Illinois State fair, to be held at Springfield, September 23-28, is characterized as "the great million dollar fair"—the value of the buildings and other property equipment of the association. The premiums offered this year aggregate over \$41,000. For further information or premium lists, address W. C. Gerrard, Secretary, Springfield, Ill.

One of the best bargains ever offered its readers by any publisher is our great Sewing Machine offer. No agency in Kansas will sell you as good a machine for double the money, spot cash. We guarantee satisfaction or will return the money. If any of our subscribers want the best sewing machine made, order our special—"The Kansas Farmer" sewing machine.

"A Few Financial Facts," by Hon. S. S. King, of Kansas City, Kas. This book is gotten up in a novel manner, with illustrative features of charts, diagrams, the parallel prices between silver and all forms of property—farms, cattle, sheep, wheat, corn, etc. It will pay to have this book in your library. We will send it to any of our readers, postage paid, for only 25 cents.

R. L. G.—Yes, the McCormick corn harvester is built by the manufacturers of the McCormick grain and grass cutting machines. From what we have been able to learn regarding the corn machine, it does surprisingly good work. The conception is novel, the stalks of corn being conveyed to the binder in an upright position, and bound standing, which results in an easily-handled bundle, square at the butts. It picks up and handles "down" corn in a very satisfactory manner, and is probably ahead of anything yet invented in the way of a corn harvester.

Bethany College, at Lindsborg, Kas., will begin its fifteenth year September 11. Bethany has had a wonderful growth, and to-day stands as one of the strongest denominational colleges in the West, with twenty-three professors and 444 students. Its college diploma is recognized by Yale, Chicago and European universities. Strong departments in Latin, Greek, French and German. Good normal departments. The business college has the finest class-room in the State. The music and art departments lead all the other colleges. In music Bethany is said to have no competition in the West. Her artists are trained in Europe. Bethany has a beautiful campus, fine, pleasant surroundings, and deserves her popularity which gave her an increase of students even last year. This summer a large gymnasium and auditorium is being erected.

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

Horticulture.

THE OLD BEN DAVIS.

"Bet a hen you don't know what a Ben Davis apple is!" said a confident Steuben county man. "Bet two hens! We people here in York State think we know a heap, but I'll make it three hens that you can take in all the country between the Hudson and the lakes and you can't find a man, woman or child that knows what a Ben Davis apple is. Leaving out me, of course. And I never knew what a Ben Davis apple was myself until I went to Egypt. That's the country they grow the Ben Davis in—Egypt, Illinois."

"Say, we use up a good deal 'o wind talking about our apple orchards along the Hudson and out in western New York, as if there hadn't been any apples anywhere else since the crop Adam and Eve gathered, but I want to tell you that we ain't in it with Egypt. No sir! Why that part of Egypt known as Clay county has got more than fifty thousand acres of apple orchards alone, and Wayne county has almost as many, with Richland and Marion counties crowding Wayne's heels pretty close. Was I set back when I went down into Egypt? Was I? Well, it takes something to set a man from old Stoooben back, and Egypt had it."

"You see, I was traveling out that way, swelled up with the feeling that I was from the garden spot of all creation, if there was any garden spot, and I felt sorry for folks I met on the way that they were so far from old Stoooben, and I s'pose I showed it. When I struck the prairies of Illinois a man who sat in front of me turned and said to me: 'Right smart turn of farmin' land, stranger?' Yes, I said, almost inclined to tell the man I'd pay his fare if he'd go back with me and take a look at some real country, but there don't seem to be much else but farming land. Now, where I live we bud and blossom! We bloom! You don't have any fruit out this way! You seem to be only of the earth earthy! Where I live we are of the fruit fruity! Ill fares the land, I said, to hastening ills a prey, where wealth accumulates from corn and hay! It used to be the caper, I said, but it don't go now! Fruit! fruit is what you want and you ain't got any."

"'Would apples come under that headin'?' asked the man. 'I'm goin' down into Egypt, now, to see some. Thar's a few down there.' I said I'd go too, for I wanted to see what they called apples there. I hadn't got far into Egypt before I heaved a sigh for old Stoooben. I tell you right now that I'd never seen apples before. You could go for miles and see nothing but apple orchards and apples. And when they told me that they didn't look on a man who only owned a ten-acre orchard as any account in the business, I didn't say a word about that four-acre orchard of mine back on the hills of old Stoooben. Well, say! I said, how long has this been going on?"

"Tom Lowe planted the first orchard about thirty years ago, and when it come in with its first crop that measured up 3,000 bushels, and Tom cleared pretty near \$2,500 on it, everybody pitched in for apples, and now these four counties is pretty much all apple orchard.' Why a hundred-acre orchard ain't anything in Egypt, and some of 'em cover 600 acres! That apple belt beats all creation, and we folks in York State never knew a thing about it! And there's where I got acquainted with the Ben Davis apple. It is big, and red, and solid, and pretty as a picture. But there's no more taste to it than a door-knob, no more flavor than a chunk of clay, and no more smell than a piece of ice! And yet they raise more Ben Davises than any other kind, and they've got as high as \$9 a barrel for 'em!"

"The Ben Davis ain't an eater. It's a cooker, and its crop never fails. And the Ben Davis never rots. Bruise any conventional apple, and that settles it. The bruise turns to rot, and the rot takes hold of all the rest of the apple. The Ben Davis doesn't put up with any such nonsense. Bruise it if you want to, but that bruise will simply dry up, and that's the end of it. The rest of

the apple will stay just as sound as ever. And the Ben Davis never freezes. Or if it should freeze it don't mind it. Freezing doesn't affect it in the least. It is just as solid after it is cooked as it was before. It never falls to pieces under cooking, whether whole, halved or quartered."

"Then, having no trace of flavor of its own, it readily takes any other flavor and becomes a novelty to the housewife and the fruit canner. Imagine having a big, whole, cooked apple placed before you, and, when you taste it, finding that its flavor is that of the most luscious peach, or juicy pear, or apricot, or orange or anything else the hostess has seen fit to make it! That's where this queer Ben Davis apple comes out strong and metaphorically knocks the socks off all other apples on the Egypt apple belt. Chicago and the South and West are dead stuck on this apple and its genus and buy it at any price. It will keep sound from one picking season to the next."

Cultivating the Apple Orchard.

Some one has said that the plow should never be used in the orchard or vineyard. The reason for this is given as being that the surface roots are cut by the plow and the growth of the trees and vines is thus injured. Following this the use of the cultivator alone is advocated. The writer has consulted several horticulturists of long experience upon this subject, and from their testimony it can be safely set down that the advice referred to is entirely erroneous, and if followed for a number of years can but result in great damage. In the first place, the effort should be not to encourage a surface growth of the roots, but on the contrary to induce them to go downward where moisture is found.

Where irrigation is practiced, unless the ground be soaked to a great depth, the tendency is for the roots to remain nearer the surface, and as a consequence the frequent application of water becomes necessary. If, on the other hand, the roots of the trees are encouraged to grow downward as much as possible, it is found that the necessity for irrigation grows less and less each year and sometimes ceases altogether. The aim of irrigation should be to allow the water to soak as far down as possible. To this end, it is essential that the soil be loosened deeply by the plow. In many soils there is a hard-pan at the depth of eight or ten inches through which the water with difficulty finds its way.

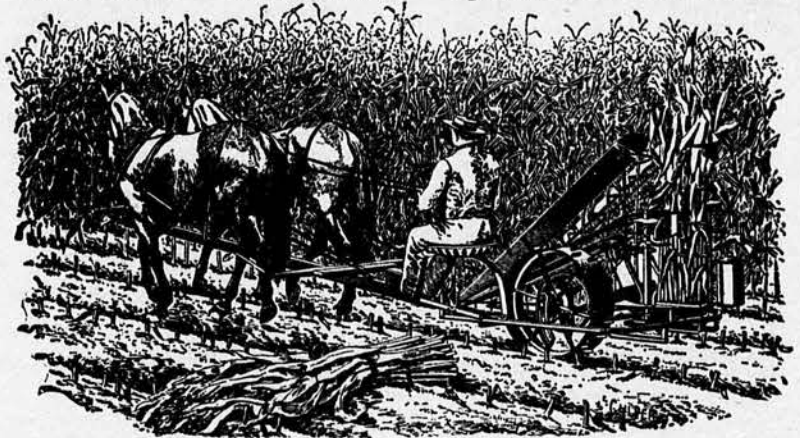
In all kinds of soil the constant use of the cultivator without the plow tends to assist in the formation of the hard-pan at the depth reached by the cultivator. This is seen in the lightest, sandiest loam. After two or three years' use of the cultivator there will be a thick shell formed, which is very apparent when a plow is used thereafter. After much experimenting, the best plan of cultivating an orchard or vineyard would seem to be this: In the early spring, when the ground is thoroughly moistened with the rains, put on a good plow and have the soil broken just as deeply as the share will go. To be sure, great masses of roots will be turned up—that is, if the plow has not been used before—but that need not give cause for alarm. After the first year of this sort of treatment the surface roots will become less in number and the plants will draw their sustenance from beneath.

After plowing, once will suffice each season, the cultivator should be kept going, and the surface for a depth of six or eight inches should be in as fine tilth as possible. This will act like a mulch, and will preserve the moisture beneath, as well as tend to attract it upward. In sections where irrigation is not practiced this same method of plowing and cultivating should be followed. Where no artificial sources of supply are available, it becomes necessary to the highest degree to take full advantage of the rainfall. Where constant cultivation without plowing has allowed the formation of hard-pan, the rain will not soak in to any depth, but will remain on the surface and run off to a lower level. But when the soil is kept loosened to a good depth it is in condition to absorb all the rain, and

"THE ONLY SUCCESS."

The McCormick Corn Binder

LIGHT DRAFT—CLEAN WORK—SQUARE-BUTTED BUNDLES



Ohas. McKissick, Supt. "Mayville Farm," Mayville, N. Dakota, says:

"It solves the question of handling corn."

Wm. E. Dana, East Avon, N. Y., says:

"I cut 24 acres of corn ranging in height from 3 to 14 feet."

P. F. Huntley Jr., Le Roy, Minn., says:

"Just what is wanted in corn districts."

A. S. Cotton, Manager "Sanitarium Farm," Clifton Springs, N. Y., says:

"Cuts and binds all corn—slightly lodged and tangled, as well as standing. Have tried many corn harvesters. The McCormick is the only success."

Manufactured by McCORMICK HARVESTING MACHINE CO., CHICAGO.

N. H. Leonard, Spring Valley, Minn., says:

"Binds the corn in great shape, with nice square butts for shocking."

Levi Wambaugh, Waterloo, Iowa, says:

"It works well and to my entire satisfaction."

J. R. McCullough, Solomon City, Kan., says:

"Two men and two horses can cut, bind and shock 12 acres a day."

John L. Taylor, Owego, N. Y., says:

"I cut 50 acres of ensilage corn (some of it very heavy). It is a machine which all ensilage growers must have."

hold it for the sustenance of plant life during the dry summer season.—George F. Weeks.

Storing Potatoes.

One of the most essential points about potato culture is to know how to preserve the crop when you have raised it. This is the more important with regard to the seed potatoes, which have to be kept from sprouting for a long period. If buried, potatoes must be covered lightly at first, so as to permit of ventilation, and the covering added from time to time, but only enough to protect the tubers from the frost. This, in my experience, is the most unsatisfactory way of storing potatoes. The next worse way is a cellar under a building. The trouble with a cellar is to give it air enough and keep it cool enough.

The most satisfactory and cheapest way that I know of is to store in a dug-out, making the roof of earth over poles and brush. In very wet weather such a roof will leak, unless covered with boards, corn stalks, straw or other covering. The best location is a slope or bank facing south. By leaving an alley through the center of a dug-out, with plenty of large ventilation shafts through the roof, a brisk circulation will be kept up whenever the end door is opened—particularly where the door opens on the level, as it will do if the building is dug in the side of a bank.

The dug-out should be built with a bin on each side of a central alley. The bottoms of the bins should be raised six inches from the ground and the sides of the bins should be clear of contact with the walls, whether stone or dirt. Both bottoms and sides are best made of fence boards, with inch spaces between. Such a building, carefully managed as to ventilation, opened up on frosty nights and kept closed during the warm days of fall and early winter, will take Early Ohio potatoes through to spring without a sprout. Early Rose, Beauty of Hebron and other such varieties may require turning over once.—Edwin Taylor.

Remember—only such medicines were admitted for exhibition at the World's Fair as are accepted for use, by physicians, in the practice of medicine, Ayer's Sarsaparilla, Ayer's Cherry Pectoral, and Ayer's Pills being included in the list. They are standard medicines.

To succeed in the world, it is much more necessary to possess the penetration to discover who is a fool than to discover who is a clever man.—Cato.

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

Homes for the Homeless.

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

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

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

UR invited to send for my latest price list of 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.

Don't Buy Crimson Clover

Until you have read the most complete treatise ever printed. Tells you what seed is hardy. How and when to sow. How to succeed in dry weather. Free. J. A. Everett, Seedsman, Indianapolis, Ind.

FRUIT EVAPORATORS and CIDER MILLS.

BEST, CHEAPEST and Most Reliable on the market. Catalogue free. WM. STAHL EVAPORATOR CO., QUINCY, ILL.

ESTABLISHED IN 1873.

WILLIS NURSERIES.

Offers for fall of 1895 large stock, best assortment. Prices low. Stock and packing the best.

We should be glad to employ a few reliable salesmen. Address A. WILLIS, Ottawa, Kansas. [When writing mention KANSAS FARMER.]



ALL IN A NUT SHELL for 10c. to the readers of this paper: regular price 25c. First book is—"How We Made the Old Farm Pay." Second book—"Peach Culture." Third book—"How to Propagate Fruit Trees, Vines and Plants." Fourth—"Green's Fruit Instructor." Offer good for ten days only. GREEN'S NURSERY CO., ROCHESTER, N. Y.

In the Dairy.

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

THE TUBERULIN TEST AND DISEASED MILK.

At a meeting, not long since, of Guernsey breeders, at Philadelphia, Dr. W. L. Zuill, a prominent Quaker City veterinarian, was asked for a statement of his views on tuberculosis and the tuberculin test. What followed is thus told by the Philadelphia Ledger:

"There is no question," he said, "but that the danger scare which has been given to the public concerning the use of milk has been greatly exaggerated. Statistical experimentation has proved this over and over again, and it conclusively shows that the milk from a cow with chronic or encysted tubercular centers is not necessarily dangerous or unfit for food, as it may contain neither the spore nor the germ of the disease, and that tuberculin is far from being the infallible diagnostic agent that some claim for it. The first investigation in the United States to determine the diagnostic value of this medicament in tubercular disease of cattle was made by a committee of the veterinary faculty of the University of Pennsylvania, of which I was chairman. The conclusions reached by that committee have been corroborated by every similar investigation since that time. They all show that tuberculin will not give a reaction in every case of the tubercular disease, and that it will give a reaction where there is no tuberculosis, in cases of chronic pneumonia, actinomycosis, sarcoma, contagious pleuro-pneumonia, etc. Therefore it is not reliable in diagnosis.

"In addition to its unreliability it is positively dangerous, inasmuch as it may change the milk of a dairy which was perfectly pure and harmless into a noxious product by changing a chronic and encysted tubercular center into an acute miliary tuberculosis, thus filling the milk with germs and spores, rendering it dangerous, virulent and unfit for food. This form of the disease is probably never seen in cattle except as the result of a tuberculin injection, as the natural course of the disease is always chronic, and it is only when it has progressed until there is a general infection, including a tubercular mammitis, that the milk becomes dangerous. This condition may easily be recognized by the physical condition of the udder or by bacteriological examination of the milk.

"We, as veterinarians, have no right to jeopardize a man's property by injecting his cattle with tuberculin, nor to slaughter his animals in an endeavor to prove that they produce diseased milk, as the finding of tubercular lesions is not proof of this fact. Does the law allow a building inspector to tear down and destroy a man's house in order to find out whether or not it is properly built, and then ask him to rebuild it? Then why should the law allow a dairy inspector to kill a cow in order to prove that her milk product is unwholesome? Would it not be more reasonable, more logical, more in accord with the dictates of common sense to first examine that product microscopically and chemically and thereby prove that it is unfit for food and dangerous to human life? Such an examination can be made with less loss of time, with more certainty and less expense, and when made has a more definite and fixed value than any test to which the animal could be subjected. It is agreed that milk is not likely to contain bacilli unless the udder is affected with the disease, and the percentage of cows with tubercular mammitis is very small. The most recent experiments go to prove that milk containing tubercular bacilli when diluted with other milk to the extent of one part to fifty is rendered innocuous as an article of food, or at least reduces the danger to a minimum.

"There are hundreds of human beings who would be alive to-day, so far as the disease of tuberculosis (which they had) is concerned, if, in the excitement following the announcement of Koch's cure, they had not submitted

themselves to the treatment. The inoculation broke down the chronic and encysted centers in their lungs and they died within a few months after receiving the injection.

"My position is this: I cannot, do not and will not indorse the indiscriminate use of tuberculin as an agent for diagnosing tuberculosis in dairy cattle. Every new report we get of the general arbitrary use of this substance proves it unreliable. It is not used by law in any country of the old world, as far as I have been able to learn."

In reply to a question on the subject of dilution, Dr. Zuill said that it was a safeguard. He continued: "The practice of ordering one cow's milk for children is a mistake and has no sound logical reason to support it. I would very much prefer for my children the mixed milk of the herd than the product of any one animal."

The foregoing report fell under the eye of Dr. Frank S. Billings, the eminent pathologist and investigator of animal diseases, now located at Worcester, Mass., and he offers the following indorsement of Dr. Zuill's position: "As the dangers of transmission between diseased and healthy individuals have been illogically exaggerated, so have the dangers from the consumption of beef, and especially of milk, from tuberculous cattle. The danger does exist but it is so small as to bear no comparison to that from milk kept in unclean vessels and handled as it is handled by the cheap dealers. Where one child acquires tuberculosis from consuming milk from a tuberculous cow, a hundred thousand die of summer diarrhoea from milk contaminated with ordinary ferment germs. So far as disease in milk is concerned, the poor babe who has to have the mixed milk of the city, if the milk and nursing-bottle are scrupulously taken care of, is incomparably freer from danger than the apparently more fortunate child whose parents can afford the milk from one special cow."

Milking a Chinese Cow.

A correspondent of *Country Gentleman* writes: "The question as to whether or not cows voluntarily hold up their milk has been lately discussed very fully in New York papers, but perhaps a few words about cows not so high bred may add a little to the evidence already brought forward.

"The yellow cow of southern China (Zelu), unlike our Jerseys, is neither nervous nor a 'milk machine.' Like her owner, she has devoted little time to the cultivation of her sensibilities. She has fed off the coarse grass among the graves on the hillside, and at times she has given to her the vines of the sweet potatoes and the peanut. In the season she has had all the leaves from the sugar cane she has wanted. She has drawn the plow and harrow, and has helped to turn the rude sugar-mill. When old age, or perchance disease, has made her useless for work, rather than throw her away, some poor people reluctantly condescend to eat her. She has only given milk to nourish her offspring. Her owner would not eat milk even if it were running to waste. "But, at the open ports, milk is now wanted by the foreign residents, and, as it pays well, the cow owner tries to persuade her to conform to the habits of the western cow. The only way he can in any degree accomplish this is by permitting the calf to have the first pull at the teat. Just as 'calfy' has got well under way, he is ruthlessly pulled away, and the Chinaman's hands take its place. For a time the milk comes with as free a flow as the little her body contains will warrant; but as soon as she comprehends what is going on, or as soon as her nervous system is shocked, the supply falls. 'Calfy' is again brought into service and treated as before. This triangular conflict is repeated until the owner thinks there is no more milk to be obtained.

"Now, while the calf is very much disturbed by this contest, and may become nervous in the prospect of losing its breakfast, the cow usually stands very quietly, but she says her milk shall not be given on any other terms—that is, so it seemed to me."

Ask your neighbor to subscribe for the KANSAS FARMER.

A Criminal Dairyman.

California is having an experience with tuberculosis. A dispatch from San Francisco says: "Every cow of a herd of eleven at the State University dairy, in the outskirts of the city, has been condemned to death by the inspector of the Board of Health on account of tuberculosis. All the cows had the disease in an advanced stage, and the proprietor admitted that he had been serving customers with the milk, although he knew the cows were diseased. He had bought some of the cows for \$5 each. In extenuation, he pleaded that he had to support his family, but afterwards admitted that he owned considerable city property, and is far from being a poor man. The authorities will probably arrest him on a criminal charge."

Feeding Milk to Pigs.

There is an immense amount of milk wasted in feeding it to pigs by itself, as a drink. When so fed a large proportion of it passes through the animal undigested, and hence does no good. Feed milk always in connection with some ground grain, such as bran, shorts, corn meal, pea meal or ground millet seed. This method of feeding milk increases its value two, and some feeders say four-fold, an item of too much importance to be unconsidered. When skim-milk is taken home from the separator it has cost too much time and trouble to be largely wasted in feeding it unwisely. If the milk and grain slop is made long enough before eating to become slightly acid it is all right but do not let it reach the very sour or decomposing stage.

To Wash or Not to Wash Butter.

There is considerable difference of opinion in dairy circles on the subject of washing butter, the camps being divided into washers and non-washers. Those who advocate the reduction of washing to a minimum claim that much washing injures the flavor. On the other side, it is maintained that insufficient washing destroys the keeping quality. Both contentions are true. Much washing does remove a flavor that is exceedingly palatable in perfectly fresh butter. On the other hand, unless the casein be expelled by pretty thorough washing when the butter granules are small, cheesy or rancid flavor is pretty certain to develop after a brief time. The proper determination of the question will therefore depend upon the use that is to be made of the product. If the butter is to be immediately consumed a very little washing will meet all the requirements and preserve the flavor desired so much. On the other hand, if a good keeping butter is wanted, it will be necessary to remove the casein quite completely.

Feeding and Milking.

In place of a dog to drive home the cows at night, tie them in the barn, away from the flies, when milking, and give a small ration of bran and corn meal, and if the pasture fails some soil-crop fed twice a day will keep up the milk flow. Cows, to make the most of their opportunities, need to be milked in quiet, and nowhere can this be so well done and each cow receive her just share, as in the stable. Follow this up by chaining the dog to a post and set the boys to pulling weeds, and the cows will pay for the little extra hire by coming to "the bars" regularly and lowing to be let in. Getting up the cows with horse, boy and dogs should be an obsolete custom on every model farm. In this summer care of the cows their comfort should be attended to in the feed-lot, seeing that there is plenty of good water and shade of some kind. In the West, on the prairies, this is a feature to be looked after; whereas the man in the East, with his wood-lot part of the pasture, and springs by the score on the hillsides, is provided for in the bestowal of nature's gifts, no particular care need be taken except in the matter of feed.

A call has been issued for a meeting of the Executive Board of the Kansas State Dairy Association, at Abilene,

Headache Destroys Health

Resulting in poor memory, irritability, nervousness and intellectual exhaustion. It induces other forms of disease, such as epilepsy, heart disease, apoplexy, insanity, etc.

Dr. Miles' Nervine Cures.



Mrs. Chas. A. Myers, 201 Hanna St., Fort Wayne, Ind., writes Oct. 7, 1894: "I suffered terribly with severe headaches, dizziness, backache and nervousness, gradually growing worse until my life was despaired of, and try what we would, I found no relief until I commenced using Dr. Miles' Nervine. I have taken five bottles and believe I am a well woman, and I have taken great comfort in recommending all of my friends to use Nervine. You may publish this letter if you wish, and I hope it may be the means of saving some other sick mother's life, as it did mine."

On sale by all druggists. Book on Heart and Nerves sent FREE. Dr. Miles Medical Co., Elkhart, Ind.

Dr. Miles' Remedies Restore Health.

on Wednesday, July 31, at 2 o'clock p. m., to make arrangements for the annual assembly.

The pyramids themselves, dotting with age, have forgotten the names of their founders.—Fuller.

"A stitch in time."—A dose of Ayer's Pills has saved many a fit of sickness; but when a remedy does not happen to be at hand, slight ailments are liable to be neglected, and the result, frequently, is serious illness; therefore always be supplied with Ayer's Pills.

CHEESE APPARATUS

Cheese-Making is More Profitable Than Butter-Making. The process is easy. Machines are complete and substantial. A ten-pound cheese made at each operation. Nothing like it on the market. Simple directions sent with each apparatus.

No. 1, 10 Gal., with 1 press and 1 hoop,	\$15.00
No. 2, 20 " " " " " " " "	25.00
No. 3, 30 " " " " " " " "	32.00

Further information cheerfully sent by manufacturers. H. McK. WILSON & CO., St. Louis, Mo.

PROFITABLE DAIRY WORK

Can only be accomplished with the very best of tools and appliances. Cream Separator on the sure of more butter, while milk is a valuable asset. Farmers will take to get a illustrated catalogue mailed FREE. Agents wanted. DAVIS & RANKIN BLDG. & MFG. CO. Cor. Randolph & Dearborn Sts., Chicago.



KEYSTONE Corn Huskers and Fodder Shredders

are further improved for 1895. Better than ever before. You can learn all about them from the free book

"The Great Leak On The Farm."

Send for it now.

KEYSTONE MFG. CO., Sterling, Ill.

We have branch houses.

Gossip About Stock.

A. E. Staley, Ottawa, Kas., breeder of Ohio Improved Chester White and Poland-China swine, writes: "In Chester Whites I have boars ready for service and spring pigs from three different boars—Cap Finch, Osage Chief and Dorsey 6623. Moorish Pride 8405 heads the Poland herd, assisted by Riley Medium 12406, Tecumseh I. Corwin 10744 and Ottawa Boy 12436. I have seven October boars and a few choice gilts out of the above boars and such sows as Mazy 8d 6121, Black Highland, Moorish Mazy, Moorish Highland, all recorded sows, on which I will make prices to suit the times and breeding of stock. Call and see me. One mile north of town."

Geo. W. Berry, Berryton, Kas., writes: "Longfellow's Model, that won sweepstakes at the Inter-State fair, in 1891, and Kansas State fair, in 1893, is in active breeding form. Onward II., the sweepstakes boar of 1894, is in splendid form and his pigs are in demand. I have now six boars ready for service and a fine lot for fall use. There is a good yearling boar by Major Lee, three by Longfellow's Model and two by Majestic Lad, also fine young sows and pigs by this grand trio of boars. Major Lee was sold to head the Sunny Slope herd, at Emporia, and Majestic Lad went to J. S. Magers, of Arcadia. Inquiries for stock are increasing but trade is slow."

Mr. E. E. Axline, of Oak Grove, Jackson county, Missouri, reports his herd in fine condition. "The visitor," he says, "finds that the spring pig crop of 123 head are extra good ones and that they are undoubtedly the best ever on the farm. The major portion of them were sired by Western Wilkes 12846 S., who is proving himself an excellent breeder. Youngsters are now coming to the credit of Roy U. S. 24165 A., the boar that I bought in Illinois last fall. Mr. Lou Burk, America's greatest live stock artist, was here last week and made a sketch of him and said 'that he is one of the best boars in all Missouri and a hard one to defeat, either as to conformation, style and finish or in the superiority of his get.' Among the top sows that have farrowed to him are Lucy's Best 25180 S. and Duchess Girl 28007 S., that have litters of eight each, their second litters this year. My winter pigs are all sold except a few choice fall gilts. Inquiry and trade is good in spring pigs."

Jno. A. Dowell, Robinson, Kas., writes: "My hogs are in the very pink of condition and I have some of the best pigs from Black U. S. Wilkes. I never saw better. One litter out of Cantrall's Best of '94; one litter out of a young sow sired by Black Tom and out of Lady Gip—finest I ever looked at. Black U. S. Wilkes is sired by Guy Wilkes 2d 17777, owned by Cantrall & Garrett, Waynesville, Ill.—the best hog in America to-day. Whiteface and Bessie Wilkes raised litters. Whiteface's litter by Guy Wilkes 2d, Bessie Wilkes' litter by Haines' Black U. S. They are dandies all the way through. Guy's Perfection, if he keeps on, will be the best individual in Kansas. He is a better individual than his worthy sire, Guy 2d 17777. He is pronounced by all breeders that see him the best hog they ever saw. He is simply immense. I have now about 120 head, all sold. Have all ages to sell, from 3 months old to 10 months old, both male and female, sows bred or not. Will farrow from now until September. I have five fine boars, 9 to 12 months old, and good ones; one sired by General Wilkes out of Agnes, a very fine hog. Prices right."

Among others visited by our field man, last week, was Mr. E. A. Bricker, whose farm and herd of Poland-Chinas are situated five miles southeast of Westphalia, Anderson county, Kansas. Western swine breeders, especially those that have attended the Nebraska State fairs since the fall of 1888, will call to mind the several very excellent herds shown by him up to two years ago, when he sought a more congenial climate and located in Anderson county. The records will show that representatives of his herd never failed to win a first prize at Lincoln, the second largest exhibit of pedigreed swine annually held in the United States. He held three annual sales before leaving Nebraska, and the last one made an average of \$26.72. The fact is, Friend Bricker started right by securing the best. His first harem queen that he bought was Black Betty, whose sons and daughters in three years brought \$2,150, and when sold herself she went for \$44. Both males and females brought each \$50 to \$75 when they left the farm. His present herd is known as the Pleasant Valley herd, and consists of about seventy head, all ages, headed by a harem king of great form and show-yard character. He is known in the "Standard Record" as Tecumseh Grand 9178 S., by Grand Tecumseh 8058 S., and he by Business 8059 S.; dam Storm Queen 21166 S. by Storking B. 4395 S. and out of Betsey Barton 21167 S. He is now in his three-year-old form and has a very even scale, measuring, heart 64, flank 64 and length 59 inches. He won first under 1 year at the Iowa State fair, the

largest annual swine show held in the United States or the world. On reference to his extended pedigree, he traces sixteen times to Tom Corwin 2d, also to U. S. and Success. The reader will see that his breeding and show-ring record are all right. He cannot well be used to advantage longer in the herd and will be priced to some one wanting a first-class sire. The visitor will find him "an extra good one," and after looking over the fifty-one youngsters that were farrowed the first week in April, three-fifths of which are his get, will at once conclude on his worth and usefulness. Among the brood sows is Lady Finch 21031 S., that has eight pigs by Tecumseh Grand; Widow Maginty 19550 S., sired by Free Trade 4420 S., has five sons and daughters ready to go that are by the harem master; Black Beauty by Business 11037 C., has six by Guy Wilkes 3d 12181 C., he by Guy Wilkes 2d and he by the noted George Wilkes, dam Erma by North Star and out of Courtney 4th; Lady U. S. by Billy Wilkes 11784 S. and out of Nancy Hanks B. 21032 S., has seven by Tecumseh Grand. Grand breeding this and just what the up to date breeder should keep an eye on. Another one is Belle Vera 26538 S., that has six by Wilkes; Bessie L. 26539 S. by Keynote Jr. 7660 S. and out of Lady White Face 21030 S., has six by Tecumseh Grand; Lady White Face 21030 S. has eight by T. G., and the yearling Midnight 26537 S. turns out six by Wilkes for inspection by the visitor. Space forbids further notes at this time, yet the writer thinks that enough has been given that the reader interested in swine husbandry will conclude that Mr. Bricker belongs to the foremost rank in Kansas swine breeding.

A Kansas Farmer Outing.

A hot July day is not always the pleasantest time to start on a trip South; the Northern woods offer a more enjoyable prospect for comfort. But when one desires to see the land of "big red apples," he can afford to disregard the heat, for July is the time to see southern Missouri and northern Arkansas in all their glory of fruit, not only apples, but peaches, pears and plums.

We (not the editorial We, but the prospecting party from KANSAS FARMER office) landed at Mammoth Spring, Ark., on July 18, after a very pleasant ride of 335 miles over the Memphis Route, from Kansas City, and were pleasantly entertained by Hynson & Elmore, land agents, who showed us many fine fruit farms near the city.

A quarter-section shown us, having sixty acres planted with fruit trees, many of which were heavily loaded with the finest of apples and peaches, made us long for the privilege of possessing it, and only \$1,600 was the "asking price." While Kansas is all right and "the best country on earth" to live in, yet any one ought to be happy who could own and live on this 160 acres of Arkansas soil.

At Black Rock, Ark., the live land agents, Orr & Billings, showed us the country, which, while it did not flow with milk and honey to any alarming extent, was well sprinkled with apple, peach and pear trees, figuratively groaning with the weight of most luscious fruit, their limbs bent down to the ground with delightful loads.

On our return we visited one of the prettiest towns along the line, Mountain Grove, Mo., well toward the top of the Ozark hills, and a drive of two miles over a level road brought us to the fruit farm owned by Dr. I. D. Lane, who originally settled at Mountain Grove forty years ago. Robert Nesbitt, to whom we are indebted for this pleasant ride, was tireless in telling all about the fruitful glories of the Ozark country. Dr. Lane's farm consists of 142 acres of level land entirely covered with apple trees nine years old. Seven thousand barrels of apples, with a few odd ones over for good measure, is the amount the Doctor has to his credit on these trees, and he will "net" more than a dollar per barrel over all possible expense and damage. Seven thousand dollars as a profit from less than a quarter-section of land is not so bad, and is almost as good as wheat farming in Morton county, Kansas. Nice farm houses in every direction showed prosperity, the cause for which was fruit. Any one writing to Dr. Lane will learn all about it, and we need only add that our delightful ride furnished keen appetites for a most excellent supper at Central hotel, where you want to "stop over" when visiting Mountain Grove. Before going, however, write to J. E. Lockwood, G. P. A. Memphis Route, Kansas City, Mo., and he will furnish you with full information about the land of "big red apples, among the Ozarks."

Union Pacific Route.

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Dr. Hartman is the author of a little book devoted to the treatment of female diseases, entitled "The Woman's Hand-book and Guide to Health." This book will also be sent free to any address by the Per-na Drug Manufacturing Co., Columbus, O., for a limited time.

For free book on cancer address Dr. Hartman, Columbus, O.

Summer Tours.

You can get more for your money in the sure return of health and enjoyment at any of the many resorts on the Union Pacific System than anywhere else on this continent. See your nearest Union Pacific agent. Summer tour tickets on sale to September 30.

F. A. Lewis, City Ticket Agent, Union Pacific System, 525 Kansas avenue, Topeka, Kas.

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THE STRAY LIST.

FOR WEEK ENDING JULY 17, 1895.

Miami county—Jas. E. Caton, clerk.

STEER—Taken up by Dr. D. V. Mott, of Fontana, one black three-year-old steer, white face, swallow fork in right ear and underslip in left ear; valued at \$16.

Cherokee county—P. M. Humphrey, clerk.

HORSE—Taken up by George W. Glee, in Lowell tp., one bay horse, 8 years old, heavy mane and tail, saddle and collar marks; valued at \$20.

MARE—By same, one mare, 5 years old, right hind foot white, had on halter, shod all round, saddle marks; valued at \$20.

HORSE—Taken up by John Longdon, in Lowell tp., July 9, 1895, one yellow-dun gelding, branded B on left jaw, HL on left shoulder and HA on left hip, weight 1,100 pounds.

Crawford county—Peter McDonnell, clerk.

MULE—Taken up by Lyman Jones, of Pittsburg, June 28, 1895, one bay mare mule, 10 years old, branded O on right shoulder; valued at \$25.

MARE—Taken up by J. M. Richards, in Baker tp., May 20, 1895, one dark bay mare, fourteen hands high, 8 years old, star in forehead, branded O on left fore and right hind hoof; valued at \$20.

Johnson county—Jno. J. Lyons, clerk.

HORSE—Taken up by H. N. Hodges, in Gardner tp., May 30, 1895, one dark brown horse, fifteen and one-half hands high; valued at \$25.

MARE—Taken up by Darby O. Dar, in Shawnee tp., (P. O. Shawnee), June 28, 1895, one brown mare, fourteen hands and three inches high, white spot on face, branded O 8 on left shoulder; valued at \$20.

FOR WEEK ENDING JULY 24, 1894.

Doniphan county—W. H. Fornbrook, clerk.

STEER—Taken up by D. E. Hale, in Center tp., June 7, 1895, one light red one-year-old dehorned steer; valued at \$18.

Cheyenne county—G. A. Beukelman, clerk.

HORSE—Taken up by H. D. Bacon, in Jefferson tp., (P. O. Bird City), June 19, 1895, one bay gelding, 2 years old, white star in face; valued at \$15.

MARE—By same, one mouse-colored roan mare, 3 years old, no marks or brands; valued at \$15.

Linn county—Jno. J. Hawkins, clerk.

HORSE—Taken up by J. T. Tipton, in Lincoln tp., one dark bay horse, sixteen and a half hands high, left hind foot white, difficulty in left hip; valued at \$20.

Wallace county—Hugh Graham, clerk.

MARE—Taken up by C. F. Harris, in Wallace tp., (P. O. Sharon Springs), June 29, 1895, one bay mare, left hind foot white; valued at \$20.

MARE—By same, one bay mare, right hind foot white and white stripe in face, had halter on when taken up; valued at \$20.

MARE—By same, one bay mare, white stripe in face; valued at \$20.

FOR WEEK ENDING JULY 31, 1895.

Jefferson county—County clerk.

HORSE—Taken up by John H. Johnston, in Rural tp., June 25, 1895, one sorrel horse, about 12 years old, fifteen and a half hands high, white strip in face, saddle marks; also one top buggy, old; valued at \$15.

Greeley county—Robt. Eadie, clerk.

MARE—Taken up by —, in Tribune tp. (P. O. Tribune), June 20, 1895, one bay mare, branded V on left shoulder; valued at \$15.

Wallace county—Hugh Graham, clerk.

MARE—Taken up by N. W. Hayes, in Sharon Springs tp., June 8, 1895, one black mare with gray mane and tail and white stripe in face, 4 years old, no marks or brands; valued at \$15.

MARE—Taken up by William Rainbolt, in Sharon Springs tp., June 1, 1895, one bay mare, 8 years old, scar on left hind leg, star in forehead, and small white spot on left fore leg; valued at \$18.

Sumner county—Chas. Sadler, clerk.

MARE—Taken up by Henry H. Bumgardner, in Walton tp. (P. O. Geuda Springs), July 9, 1895, one light bay mare, 3 years old, star in forehead, right hind foot white, white on outside of right front foot; valued at \$15.

MARE—By same, one bay mare, 2 years old, wire out on left hind leg; valued at \$15.

MULE—By same, one brown mare mule, 2 years old; valued at \$15.

MULE—By same, one brown horse mule, 2 years old, slit in right ear; valued at \$15.

MULE—By same, one brown horse mule, 2 years old, slit in left ear; valued at \$15.

MULE—By same, one bay horse mule, 2 years old; valued at \$15.

HORSE—Taken up by Jacob Miller, in Greene tp., (P. O. Knox), May 30, 1895, one bay horse, 4 years old, white on left hind foot; valued at \$20.

MARE—By same, one bay mare, 8 years old, branded M on left shoulder; valued at \$20.

Coffey county—T. N. Bell, clerk.

COW—Taken up by H. F. Danford, in California tp., one red cow, left ear marked, dehorned, branded O. on right hip; valued at \$15.

Wichita county—W. S. Place, clerk.

MARE—Taken up by Nick Ernst (P. O. Coronado), June 19, 1895, one bay mare, five feet two inches high, star in forehead, left hind foot white, branded P. K. on left shoulder, had on head halter; valued at \$30.

Rush county—W. J. Hayes, clerk.

PONY—Taken up by George Reim (P. O. Blon), July 15, 1895, one bay mare pony, brand similar to 3D on left shoulder; valued at \$10.

Cherokee county—P. M. Humphrey, clerk.

MARE—Taken up by F. F. Burges, in Spring Valley tp., July 1, 1895, one gray mare, fifteen hands high, weight 900 pounds, shod all round, short mane, harness marks; valued at \$25.

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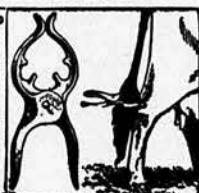
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The Veterinarian.

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the KANSAS FARMER. Give age, color and sex of animal, stating symptoms accurately, if any, has been 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.

SORE MOUTH.—I have a horse that had the distemper a year ago last spring and since then he has had what I suppose is a sore mouth, with profuse slabbering that is offensive. He has a good appetite but does not thrive. He is thin and weak. A. H. C. Auburn, Kas.

Answer.—If you examine your horse's grinders I think you will find the cause of the trouble. If you have a veterinarian near you it will pay you to have the horse examined.

LUMPY-JAW.—I have a bull with the lumpy-jaw. What would you recommend? S. D. G. Bigelow, Kas.

Answer.—Give him a daily dose of iodide of potassium equal to fifteen grains for every one hundred pounds weight of the bull. At the end of a week or ten days his appetite will begin to fail and he will become disinclined to move about. The medicine should then be withheld until the appetite returns, when it should be given again. Repeat this treatment till cured.

MANGE.—I have a number of pigs that have the mange. I have had the disease on my farm to some extent for several years. I have sprayed them with coal oil and then dusted them with dry sulphur. A tramp "hoss doctor" told me the difficulty was in the second skin and could not be reached by an outward application. How is it? J. S. Frankfort, Kas.

Answer.—Mange is caused by a parasite which burrows in the skin and can only be reached by an outward application. Take unsalted lime, 1 pound; sulphur, 2 pounds; water, 2 gallons; slake the lime in the water, then stir in the sulphur and boil till well combined. Have a tub or tank filled with this mixture and put the pigs in it one at a time and wash them thoroughly. As they are washed they must be turned into a clean place and all litter from the old pens must be gathered up and burned. This washing and cleaning process must be repeated at the end of a week, and again at the end of the second week.

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FARM RECORD.—Our "Farm Records" have been such a splendid seller because of their practical value that our supply is now quite limited. We have a number of the best binding only, which the KANSAS FARMER will deliver to any address for only one dollar.

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"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.

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

MARKET REPORTS.

Kansas City Live Stock.
KANSAS CITY, July 29.—Cattle—Receipts since Saturday, 3,474; calves, 204; shipped Saturday, 3,040 cattle; no calves. The market was strong to 10c higher. The following are representative sales:

DRESSED BEEF AND SHIPPING STEERS.			
50.....	1,356	\$4.95	138.....1,277 \$4.80
22.....	1,280	4.00	60.....1,299 4.50
20.....	1,200	4.25	21.....1,297 4.00
6.....	1,233	3.60	
TEXAS AND INDIAN STEERS.			
100.....	1,131	\$3.80	50.....1,133 \$3.70
95.....	1,075	3.60	1.....1,030 3.60
82.....	1,064	3.40	140.....1,066 3.35
3.....	1,130	3.25	18.....870 3.05

WESTERN STEERS.			
18.....	1,008	\$3.85	5.....1,024 \$3.20
COLORADO STEERS.			
26.....	1,080	\$3.85	

NEW MEXICO STEERS.

60.....	1,109	\$3.45	
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TEXAS AND INDIAN COWS.			
28 half.....	972	\$3.00	24.....814 \$2.55
1.....	720	2.50	1.....1,120 2.50
55.....	691	2.40	11.....878 2.45
12.....	821	2.35	12.....641 2.35

COWS AND HEIFERS.

2.....	1,010	\$2.85	1.....610 \$2.85
20.....	978	2.75	1.....941 2.70
1.....	1,150	2.65	1.....910 2.65
3.....	1,146	2.60	10.....880 2.60
1.....	900	2.50	6.....795 2.50
3.....	1,096	2.40	2.....870 2.40
3.....	1,040	2.35	1.....580 2.35
1.....	440	2.30	1.....970 2.25
3.....	1,000	2.00	4.....750 2.00
1.....	810	1.75	2.....790 1.50

STOCKERS AND FEEDERS.

20.....	1,003	\$4.10	7.....962 \$4.00
22.....	1,137	3.80	30.....968 3.75
22.....	1,073	3.75	10.....951 3.65
15.....	846	3.50	19.....763 3.55

Hogs—Receipts since Saturday, 1,109; shipped Saturday, 615. The market was 5 to 15c higher than at the low time Saturday. The following are representative sales:

100.....	179	\$5.02½	78.....218 \$4.97½	99.....179 \$4.97½
58.....	185	4.95	83.....189 4.95	43.....168 4.95
80.....	187	4.90	69.....242 4.90	106.....207 4.90
59.....	244	4.85	34.....201 4.85	64.....231 4.85
64.....	227	4.85	76.....199 4.85	28.....194 4.82½
21.....	340	4.80	91.....195 4.80	66.....271 4.80
57.....	244	4.80	14.....224 4.80	81.....229 4.75
40.....	151	4.75	32.....220 4.75	27.....240 4.70
34.....	177	4.70	58.....314 4.65	11.....377 4.50
10.....	337	4.40	25.....208 4.20	

Sheep—Receipts since Saturday, 1,008; shipped Saturday, 454. The market was barely steady. The following are representative sales:

39.....	66	\$4.65	30.....71 \$4.35
5.....	50	2.50	21.....83 2.50

Horses—Receipts since Saturday, 70; shipped Saturday, 148.

Chicago Live Stock.

CHICAGO, July 29.—Cattle—Receipts, 13,070; market steady to 10c higher; fair to best beefs, \$3.60@3.65; stockers and feeders, \$2.50@4.10; mixed cows and bulls, \$1.80@4.00; Texas, \$2.50@4.25.

Hogs—Receipts, 14,000; market generally dull, best firm; light, \$4.85@5.55; rough packing, \$4.55@4.75; mixed and butchers', \$4.70@5.15; heavy packing and shipping, \$4.50@4.90; pigs, \$3.50@4.75.

Sheep—Receipts, 14,000; market strong; natives, \$2.00@4.00; western, \$2.25@3.30; Texas, \$2.50@3.50; lambs, \$3.00@5.25.

St. Louis Live Stock.

ST. LOUIS, July 29.—Cattle—Receipts, 3,230; market firm; native steers \$3.75@3.75; stockers and feeders, \$2.40@4.25; native cows, \$2.50@4.00; Texas steers, \$2.60@4.25.

Hogs—Receipts, 1,200; market active, shade higher; light, \$4.90@5.15; mixed, \$4.50@5.00; heavy, \$4.70@5.10.

Sheep—Receipts, 1,000; market steady.

Chicago Grain and Provisions.

	July 29.	Opened	High'st	Low'st	Closing
Wht-July....	71	71½	71½	71	71½
Sept....	71½	72½	72½	71½	72½
Dec....	73½	74½	74½	73½	74½
Corn-July....	43½	43½	43½	41½	41½
Sept....	43	43½	43½	42½	43½
May....	35½	36½	36½	35½	35½
Oats-July....	23½	23½	23½	23½	23½
Sept....	22½	22½	22½	22½	22½
May....	25½	26½	26½	25½	25½
Pork-July....	10 72½	10 72½	10 72½	10 72½	10 72½
Sept....	10 65	10 82½	10 82½	10 65	10 82½
Jan....	10 70	10 80	10 80	10 70	10 80
Lard-July....	6 30	6 80	6 80	6 30	6 30
Sept....	6 32½	6 87½	6 87½	6 30	6 87½
Jan....	6 37½	6 40	6 40	6 37½	6 40
Ribs-July....	6 10	6 10	6 10	6 10	6 10
Sept....	6 15	6 22½	6 22½	6 15	6 20
Jan....	6 65	6 65	6 65	6 65	6 65

Kansas City Grain.

KANSAS CITY, July 29.—Hard wheat was about a cent higher to-day and met with good demand, but good soft wheat, though it was as scarce as it has been right along, sold very slowly, and was really not quotable any higher than on Saturday.

Receipts of wheat to-day, 70 cars; a year ago, 190 cars.

Sales of car lots by sample on track, Kansas City: No. 2 hard wheat, 10 cars 67c, 2 cars 66½c, 18 cars 66½c, 2 cars 66c; No. 3 hard, 4 cars 64c, 4 cars 63c, 1 car 65½c, 2 cars 66c; No. 4 hard, nominally, 59@62c; No. 2 red, nominally, 68@70c; No. 3 red, 1 car choice old 67c, 1 car 65½c, 6 cars 65c, 2 cars 64½c; No. 4 red, 5 cars choice 63c, 2 cars 61c, 1 car 60c, 2 cars 58½c, 6 cars 58c; rejected, 8 cars 57c, 2 cars 56½c, 2 cars 55½c, 2 cars 55½c, no grade, 1 car 52c, 1 car 51c, 5 cars 50c.

Mixed corn was in good demand at about Saturday's prices. White corn was ½c higher. Receipts of corn to-day, 55 cars; a year ago, 73 cars.

Sales by sample on track, Kansas City: No. 2 mixed corn, 19 cars 37½c; No. 3 mixed, 1 car 37c; No. 4 mixed, 3 cars 35½c; No. 2 white, 9 cars 37½c; No. 3 white, nominally, 37c.

Mixed oats sold at about the lowest prices paid Saturday. A good many new white oats were offered and some sold very much below Saturday's prices.

Receipts of oats to-day, 20 cars; a year ago, 20 cars.

Sales by sample on track, Kansas City: No. 2 mixed oats, 1 car old 21c, 2 cars 21c, 4 cars

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should contain a high percentage of Potash to insure the largest yield and a permanent enrichment of the soil.

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The best is none too good. DR. KAY'S RENOVATOR is the best, safest and most effective family medicine known for renovating and invigorating the whole body. It increases the appetite, promotes digestion, will make you gain in flesh, renew your blood and prevent your having a run of fever if you will take it in time. Delays are dangerous. If you would guard against fevers, so prevalent at this time of year, take at once DR. KAY'S RENOVATOR. It removes the cause and you get fat and healthy, instead of languishing with fever. It cures dyspepsia, liver disease, constipation, etc. If your children's breath smells bad and they have a poor appetite, etc., it is unsafe to neglect them. Give at once the RENOVATOR, a part of a tablet half an hour before each meal, and it will restore them to health in a few days. Always keep it in the family and by its prompt use thousands of lives will be saved, and many a doctor's bill as well.

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OMAHA, NEB., July 3, 1895.

Dr. B. J. Kay Medical Co., Omaha, Neb.: GENTS:—I had been feeling very bad for over a month, due, so my physicians said, to the change of life. I was all run down and all tired out; confined to my bed most of the time, terrible pain in my stomach and bowels which would seem to extend down into my limbs and feet. Several doctors said I had cancer of the stomach; I would bloat up and belch gas from the stomach which would leave a very bad taste in my mouth; I was terribly nervous and despondent; I had hot flashes and could not sleep nor eat and cared not whether I lived or died, as I longed to be at rest; I had severe pain in my right side and could not go to sleep on that side, but had to lie mostly on my back. I commenced taking your Dr. Kay's Renovator and I felt better right away. The cancer of the stomach has disappeared; I have no more belching of gas and no more bloat; am eating and sleeping well and feeling better than I have for years, and I feel that it is all due to your Dr. Kay's Renovator. It has done me more good than all the other medicines I have ever taken.

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This valley is in Southern Arizona, and is noted for its fine semi-tropical fruits and superior climate. Horticulturists say that greater profits can be realized here from oranges and grapes than in Florida or California. Physicians assert that the warm, dry, bracing climate excels in healing qualities Italy's balmy airs. The great blizzard of 1895 did not blight the tenderest leaf in this protected spot.

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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 100 families; any one will pay \$1 for directions when they see the beautiful samples of fruits. As there are many poor people like myself, I consider it my duty to give my experience to such, and feel confident that any one can make \$100 or \$200 around home in a few days. I will mail sample of fruit in nice case 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. MRS. A. M. CURTIS, 606 Chestnut St., Englewood, Ill.

The Poultry Yard.

HOMEMADE BROODER.

Its Designer Claims That It Is Practical in Every Respect.

Some time ago I promised a description of my homemade brooder. I wish to say on the start that while not costly it is thoroughly practical for all ordinary purposes, for it has been tested and does its work well.

The size I shall give is large enough to accommodate 95 or 100 chickens, which is as many as ought to be in one flock. To warm the brooder, I use a common tin wash-boiler with cover. In the center of the bottom I insert a 2 1/2-inch pipe, open at the lower end but closed at the top, and long enough to reach within two inches of top of the boiler. The hot

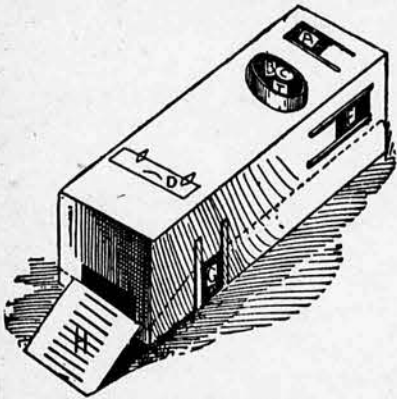


FIG. 1.—OUTSIDE VIEW.

A, glass slide for ventilation, 9x12 inch. B, top of boiler. T, tube running down through boiler. C, cover over top of tube. D, hinged trap door, to ventilate and clean. F, G, glass slides, 9x12. E, entrance for chicks to brooder chamber. H, inclined platform for chicks to reach brooder chamber. Dotted line shows where floor of brooder is.

air going into this tube from the lamp underneath heats the water that surrounds it.

The brooder box should be 4 1/2 feet long and 2 feet 8 inches wide, and as deep as the boiler is high, with room under the floor for an ordinary hand lamp with chimney; use lamp with wide wick, and let it come within an inch of the mouth of the tube. The boiler can be placed lengthwise or across the floor as one may wish, yet there must be plenty of room to let the chickens come around the boiler without being crowded.

The floor should be high enough to allow the boiler to come to the top of the brooder, so as not to let the steam into the chamber where the chickens are. Cut a hole in the floor one foot square, over which set the boiler and under it place the lamp, with the chimney under the mouth of the tube. Fill the boiler about two-thirds full of hot water, light the lamp, shut up the brooder, and in a few moments it will be warm, ready for the little chicks.

Cut a hole in top, forward of the boiler, cover nicely with a 9x12 glass, also two in the side the same size. These should be so they can slide back and forth. The top one is for light and ventilation; the side holes are for light, and through them the brooder can be easily cleaned. Another hole should be cut in the side below the floor, in order to place the lamp under the boiler, and to remove it for filling and trimming. We use glass here also, as we can more readily see how the lamp is burning.

In front is another glass door, so the chickens can come out upon the platform to eat. Never feed in the chamber. Cover the floor with sand or saw-

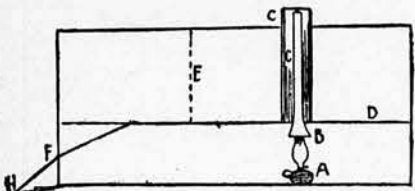


FIG. 2.—SECTIONAL SIDE VIEW.

A, lamp. B, tube running up through boiler. C, D, floor of brooder. F, entrance to brooder for chicks. H, inclined platform. E is a movable partition, to make brooder chamber smaller when desiring to increase the warmth, in cold weather.

dust so that it can be cleaned easily. The platform can be attached to the brooder with hinges so it can be lowered or raised as needed.

When the room is warm enough for the chickens they will keep away from the boiler, but when they want to be

brooded they will gather around the boiler. The lamp should not be allowed to go out until warm weather. If the brooder stands outdoors, place something over the top of the box to protect it during a hard rain. Make the brooder of matched lumber. The expense will be nearly as follows:

Lumber.....	\$1 25
Boiler.....	1 25
Tube and fitting.....	30
Lamp.....	50
Labor.....	2 00
Glass.....	20

Total.....\$5 50

If used out of doors, keep thoroughly painted. We raised a large number of ducks and chicks with one of these brooders last year, and have it in use this year. The room beneath the brooder can be used as a sleeping apartment for chicks after they get old enough not to need a heated room. I use the lower part for ducks. It is a cheap, practical brooder in all respects.—T. B. Rogers, in Ohio Farmer.

AMONG THE POULTRY.

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Do not let the chicks roost on small roosts while they are young. If they roost before their breasts become firm and hardened, they will be sure to have crooked breast bones.

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At this season of the year, when there is an unlimited range, care will be necessary to observe, by liberal feeders, not to overfeed the fowls. There will be little or no danger of overfeeding the chicks, as it takes all they can get to furnish them bone, muscle, feathers and flesh.

The success of many a man in the poultry business, both commercially and from a fancier's standpoint in show records, is due to women, who get no credit. They have been the power behind the throne many a time when men have received the honors.—Prairie Farmer.

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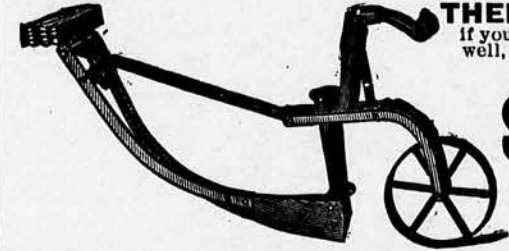


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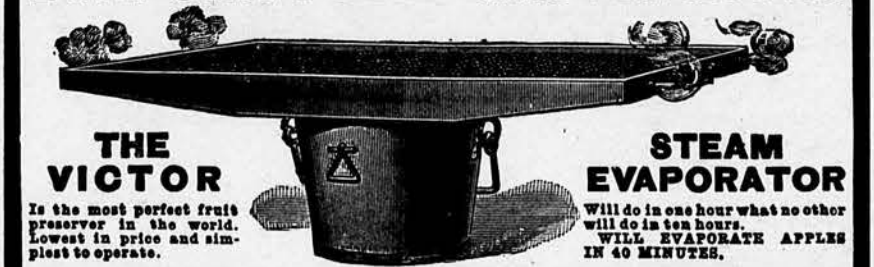


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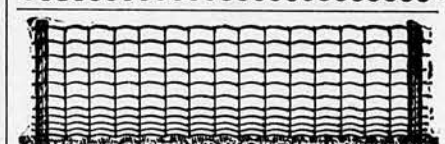
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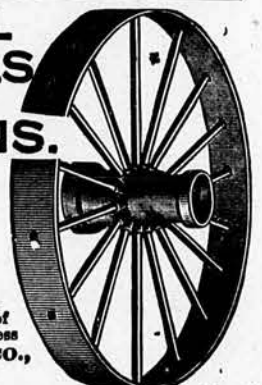


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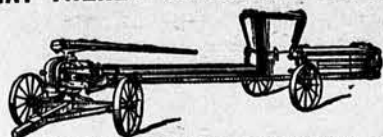
remarked a frisky young horse as he picked himself up after a brief argument with our **COILED SPRING FENCE.** Every investigator comes to the same conclusion and admits the truth of our claim for **Elasticity.** **PAGE WOVEN WIRE FENCE CO.,** Adrian, Mich.

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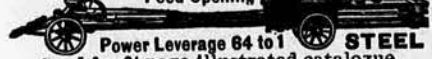
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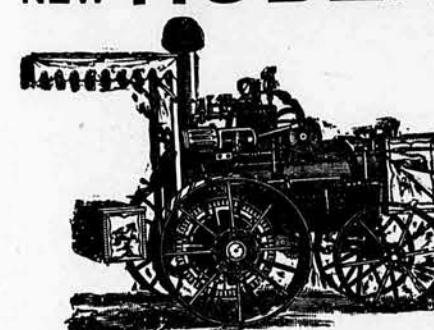


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Fifteen choice Poland-Chinas sows bred to Mosher's Black U. S. and Faultless Wilkes for sale; ten choice young boars ready to go; six young Hereford bulls. Also eggs for sale from Black Langshans scoring 94 to 96% and from a choice lot of Light Brahmas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

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.

TOWER HILL HERD PEDIGREED POLAND-CHINAS.

B. R. ADAMSON, Prop., Ft. Scott, Kas.
25 highly-bred brood sows of best strains, headed by Black Dandy 8809 S., Black Stop 10560 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.

E. E. AXLINE,

OAK GROVE, Jackson Co., MO.
Breeder of pure-bred POLAND-CHINAS of best families. Herd headed by Roy U. S. 24195 A, assisted by Western Wilkes 12847 S. Spring pigs at reasonable prices. A few choice fall gilts for sale cheap. Also breeds Plymouth Rocks of best strains. When writing mention KANSAS FARMER.

BROWN COUNTY HERD, PEDIGREED POLAND-CHINAS.

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

ELM BEACH STOCK FARM

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

1,309 POLAND-CHINAS

Shipped by express to eighteen States and Canada. Original Wilkes, Corwin, Tecumseh and World's Fair blood. Write for one to
W. S. HANNA, Ottawa, Kansas.

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SHROPSHIRE RAMS!



Fifteen Registered Yearlings, got by our imported ram, Grand Delight 2d, and out of the choice ewes of our old flock. There are no better rams in the West. They are for sale at prices in keeping with market values of sheep. Now is the time to improve and increase your flocks. Prices will never be lower than now. Write.
KIRKPATRICK & SON, Connors, Kas.

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FLEOGON OIL
No Nets nor Blankets for horses. One package lasts team a season. Cows 26 per cent. more milk, better flesh, less feed. Easily applied. Good for hair and skin. All who handle stock find it unequalled. After first application, twice a week or less. Ask us questions or send \$1.25, trial package express paid. T. Y. FROST & CO., Whiting, Kas., or 171 Randolph St., Chicago.



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

TWO-CENT COLUMN.

"For Sale," "Wanted," "For Exchange," and small advertisements for short time, will be charged two cents per word for each insertion. Initials or a number counted as one word. Cash with the order.
Special:—All orders received for this column from subscribers, for a limited time, will be accepted at one-half the above rates, cash with order. It will pay. Try it!

FOR SALE—Fine young Jersey bull. Pedigree if desired. L. Van Hook, Jr., 131 Clay St., Topeka.

WANTED—Three-year-old black bass, also bass, crappie and channel cat for fall delivery. C. F. Mingenback, Greensburg, Kas.

FOR EXCHANGE.—One thousand acres choice clear land in White county, Arkansas, to trade for horses. John G. Howard, Topeka, Kas.

STRAYED OR STOLEN.—From C. A. Johnson, Auburndale, near Topeka, one dark bay horse, weight about 900 pounds. Please return to above named party and receive reward.

TEXAS FARM FOR SALE.—Six hundred and forty acres, 350 acres in cultivation, in Wichita county, on Fort Worth & Denver railroad. One-half cash, balance on easy terms. Will take unimproved land as cash payment. A fine farm cheap. Price \$7,000. Address J. F. Cooper, Fort Worth, Texas.

FOR EXCHANGE—An improved half section, five miles from county seat, for small farm suitable for fruit. S. L. Garritt, Lincoln, Kas.

FOR EXCHANGE—Seventy-five acres best of bottom land, except ten acres, which is choice second bottom; good three-room house and cellar; never-failing well soft water; good stabling and crib; ten acres timber, mostly walnut; nice young orchard. Located two and a half miles from Topeka. Owner wants a ranch in central or western Kansas. John G. Howard, Topeka, Kas.

FOR SALE—Cotswold and Shropshire rams—2 years old, 1 year old and ram lambs. George B. Bell, Agent for Cooper's Sheep Dip, Tonganoxie, Kas.

KANSAS FARMERS WANT A FIRST-CLASS Corn Harvester. The best is made by the Blue Valley Foundry Company, of Manhattan, Kas. Single and double machines at lowest prices for successful work. Send for terms. Prices low.

HALLOO, FARMERS!—Save money by ordering a Duro-Jersey or Poland-China now. Blue blood. Cheap. Trot's Big Bone 4607 and others. D. Trot, Abilene, Kas.

SHORT-HORN BULLS—Five yearlings for sale. D. P. Norton, Council Grove, Kas.

WANTED—Young ladies and gentlemen to learn bookkeeping, stenography, office work. Limited number pay expenses by assisting two hours daily. Address H. Coon, Secretary, Kansas City, Mo.

WRITE—To Alex. Richter, Hollywood, Kas., for information concerning sub-irrigation. Enclose 2-cent stamp for reply. Manufacturer of galvanized sub-irrigation pipe.

FOR A GOOD HAND-SEWED BUCK, CALF OR kid glove or mitten, address Mrs. Ed. Warner, Lexington, Clark Co., Kas. Reference: KANSAS FARMER.

PET RABBITS—BLACK AND WHITE.—Fifty cents per pair. Can be sent by express to any point in Kansas or other State. Address Lucile McAfee, 314 West Fifth St., Topeka, Kas.

HOLSTEIN BULL—Three years old, of extra quality and breeding, for sale for much less than he is worth. H. B. Cowles, Topeka, Kas.

FOR ALFALFA SEED, DIRECT FROM THE grower, address E. G. Jones, Syracuse, Kas.

FOR SALE—Hereford bulls sired by a son of Mr. Funkhouser's celebrated Hesiod. Apply to Peter Sim, Wakarusa, Kas.

WANTED—Sale bills, horse bills, catalogues and other printing. A specialty at the Mail job printing rooms, 900 North Kansas Ave., North Topeka.

THE FINEST HONEY—Is gathered from alfalfa and clover blossoms. You can buy it of the bee-keeper, cheap and in any quantity, by freight, and know it is genuine. Address Oliver Foster, Las Animas, Colo.

FOR SALE—The tried and grand breeding boar, Kansas King 891 S., sired by Dandy Jim 5442 S. and out of Broadback (1913). Weighs 700 pounds. He is a desirably-bred hog, extra good in conformation, having broad back and extra good ham. Sunny Slope Farm, Emporia, Kas.

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WE MAKE A GOOD FARMER'S SPRING WAGON, two or four wheels and axle, for end gate, for \$55. Warranted. Kinley & Lannan, 424-426 Jackson street, Topeka.

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WANTED—Buyers for Large English 3s, 4s, 5s. One hundred pure-bred pigs, farrowed in March and April, are offered for sale at from \$10 to \$15 each. Farm two miles west of city. Riverside Stock Farm, North Topeka, Kas.

250 Farms for Sale—On eastern shore of Maryland and Virginia. Climate mild. Land cheap and productive. Send stamp for descriptive price list and map of peninsula. F. H. Dryden, Pocomoke City, Maryland.

Salesmen Wanted!

\$100 to \$125 per month and expenses. Staple line; position permanent, pleasant and desirable. Address, with stamp, King Mfg. Co., P. 29, Chicago, Ill.

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If situated on the famous Live Oak Peninsula, adjacent to Aransas Pass, to support the largest family. Do you know that for fruit and vegetables Southwestern Texas is the equal of California? Grapes and Peaches can be put on the market three weeks earlier than from any other section.

Vegetables Grow the Year Around and Northern markets supplied when prices are highest. Soil wonderfully productive. Climate almost perfect and unexcelled for health. Range of temperature 20 degrees above in winter and 45 in summer. Abundance of good fresh water.

TEN-ACRE TRACTS, \$200. One-third cash, one-third in one year and one-third in two years. The very best judgment used for those entrusting selection to us, and their interests protected. We have also for sale tracts from 1,000 to 10,000 acres and some of the choicest city property in the new resort, ARANSAS PASS, now attracting so much attention. Correspondence solicited. Maps, plats and other information furnished on application. Address ARANSAS HARBOR REAL ESTATE CO., Aransas Pass, Texas.

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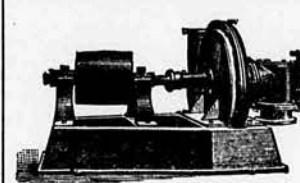
Now ready for distribution. One hundred tops out of my spring crop of 140 pigs, will be sold at PUBLIC SALE, SEPTEMBER 11, 1895. They were sired by my herd boars, Wren's Medium 12387 and Corwin's White Face 924. The pigs are in fine health and making good growth on alfalfa and light feed of slop. FOR PRIVATE SALE, fall boars and sows bred. Correspondence and inspection invited. Address W. H. WREN, Marion, Marion Co., Kansas.

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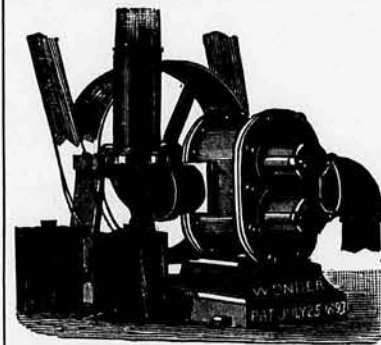
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FOR IRRIGATION PURPOSES.

Now in successful use throughout the West. For full particulars address the
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DOWAGIAC GRAIN DRILLS.

The Dowagiac Shoe Drill was the first seeding machine having runners to form the furrows. It has created a revolution in wheat sowing. Does not clog, but presses trash into the ground, and passes over it. Insures uniformity of depth and even distribution. Secures for the seed air and moisture, and for the farmer an increased yield. Either chain covers or press wheels (shown in cut). 11 to 26 shoes, 5 or 6 inches apart.
Dowagiac Hoe Drills have a perfect suction point, spring pressure, simplest and best of all spring breaks. Force feed sows beans, peas, and small seed.
DOWAGIAC MFG. CO., DOWAGIAC, MICH.

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(Consolidated in 1865.) The largest live stock market in the world. The center of the business system from which the food products and manufactures of every department of the live stock industry is distributed.
Accommodating capacity: 50,000 cattle, 200,000 hogs, 30,000 sheep, 5,000 horses. The entire railway system of Middle and Western America center here, rendering the Union Stock Yards the most accessible point in the country. The capacity of the yards, the facilities for unloading, feeding and reshipping are unlimited. Packing houses located here, together with a large bank capital and some one hundred different commission firms, who have had years of experience in the business, also an army of Eastern buyers, insures this to be the best market in the whole country. This is strictly a cash market. Each shipper or owner is furnished with a separate yard or pen for the safe keeping, feeding and watering of his stock, with but one charge of yardage during the entire time his stock remains on the market. Buyers from all parts of the country are continually in this market for the purchase of stock cattle, stock hogs and sheep. Shipper should ask commission firms for direct information concerning Chicago markets.

The Greatest Horse Market in America, the Dexter Park Horse Exchange.
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The Kansas City Stock Yards

are the most complete and commodious in the West, and second largest in the world! The entire railroad system of the West and Southwest centering at Kansas City has direct rail connection with these yards, with ample facilities for receiving and reshipping stock.

	Cattle and calves.	Hogs.	Sheep.	Horses and mules.	Cars.
Official Receipts, 1894.....	1,772,545	2,547,077	589,555	44,237	107,494
Slaughtered in Kansas City.....	959,046	2,050,784	387,570		
Sold to feeders.....	308,181	11,496	99,816		
Sold to shippers.....	490,365	488,517	45,730		
Total sold in Kansas City, 1894.....	1,677,792	2,530,896	503,116	28,903	

CHARGES: YARDAGE, Cattle, 25 cents per head; Hogs, 8 cents per head; Sheep, 5 cents per head. HAY, \$1 per 100 lbs.; BRAN, \$1 per 100 lbs.; CORN, \$1 per bushel.

NO YARDAGE CHARGED UNLESS THE STOCK IS SOLD OR WEIGHED.
C. F. MORSE, General Manager. E. E. RICHARDSON, Secretary and Treasurer. H. P. CHILD, Assistant Gen. Manager. EUGENE RUST, Gen. Superintendent.