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

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If you fail to order some of those Langshan, Buff Cochins or White Wyandotte Cockerels. Don't be too late. They are going fast. Also
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One pen headed by E. B. Thompson Ringlet cockerel; one by a grand Lash cockerel; one by a bird of the Conger strain. My White Rocks are from Madison Square Garden winners—large, pure white birds. Eggs, \$1 for 13, \$2 for 30, \$3 for 50, \$5 per 100. White Guinea eggs same. Write for descriptive circular and prices. Printed recipe for making and using Liquid Lice Killer, 25 cents. Address
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KAW VALLEY HERD POLAND-CHINAS.—One of the best sons of Chief I Know at the head. Pairs and trios not akin; of all the leading strains. M. F. Tatman, Rossville, Kas.

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

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

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

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Stock for sale. Correspondence and inspection invited.

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Three hundred head, six good spring boars, good bone, large and growthy, very cheap. Six June boars, very heavy bone and fancy, four of them will make bred, good ones, at from \$12 to \$15. One hundred and fifty of the finest fall pigs we ever produced. For sale cheaper than you ever bought as good pigs be fore. WAIT & EAST, Altoona, Wilson Co., Kas.

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

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

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Boars and gilts for sale.
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For sale now a grand lot of pigs by Combination F. F. 18069. He combines the "first families"—Chief Tecumseh 2d and Black U. S. We have the produce of the greatest Poland-China hogs in the world all ways on hand. Prices moderate.

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

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

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

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Scotch and Scotch-topped, with the richly-bred Cruickshank bulls, Champion's Best 114671 and Gwendolne's Prince 130913, in service. Also high-class DUROC-JERSEY SWINE. Can ship on Santa Fe, Frisco and Missouri Pacific railroads.
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Percheron and Roadster Horses and Shetland Ponies; also one Denmark Saddle Stallion; also Shorthorn Cattle. Stock of each class for sale.

Also a car-load of young Shorthorn bulls for sale. Pedigrees guaranteed. Address
O. L. THISLER, Chapman, Kas.

Agricultural Matters.

PLANT BREEDING.

Plant breeding is the artificial direction and utilization of the reproductive tendencies in such a way as to originate and fix desirable characteristics in plants. The principles of biology govern the plant breeder in his operations. For the requisite knowledge adequate to the successful pursuit of this interesting avocation, he must draw largely upon the sciences of physics, chemistry, and botany. The breeder of plants should be a scientist in the truest sense of the word, believing that science should be applied to the betterment of mankind. He should make his special department of science a gospel for the multitudes and should never tire of preaching its doctrines. In accordance with this spirit, the botanical department of the Kansas State Agricultural College, in conjunction with the farm and chemical departments, has inaugurated a series of breeding experiments for the purpose of originating improved varieties of cereals.

It is only within the past few decades that botanists have found any very extensive practical application of the science of plant life to the problems of human life. Most of the early botanists pursued the study in an aimless way and followed collecting as though it were the only object of life. A joke has been told upon Asa Gray, the father of systematic botany in America, which illustrates the effect of making the aids to a study the chief end of the study.

Once upon a time, an assistant of Professor Gray brought in a common green plant, with the request that the Professor name it. The Professor looked at it a moment puzzled, and then ordered the assistant to press and dry the plant. After it was dried, he identified it without any difficulty. Many bright men have spent their whole lives in collecting, identifying, describing, naming and re-naming the corpses of plants, herbarium specimens, without grasping a single one of the countless possibilities for making this queen of the sciences a blessing to the human race.

The so-called Hatch Bill, which became a law March 2, 1887, has almost revolutionized the science of botany in America. This law established agricultural experiment stations in every State and Territory in the Union and provided, "That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; * * * the capacity of new plants or trees for acclimation; * * * the adaptation and value of grasses and forage plants; * * * and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective States and Territories." Under the provisions of this and subsequent laws, a division of vegetable physiology and pathology was established in the Department of Agriculture in Washington, which has been the means of stimulating investigation along similar lines in many of the State stations. Since the organization of the various stations, bulletins, good, bad, and indifferent, have been issued on almost every conceivable subject expressed or implied in the law. The breeding of plants, which can only find its legal justification in the clause, "and such other researches or experiments," etc., has not yet been attempted by many of the stations. Doubtless the reason it was not specifically mentioned in the law is that ten or twelve years ago few American scientists had ever dreamed of breeding plants artificially for practical purposes. It is admitted by many to-day, however, that plant breeding offers a very promising field for the application of the principles of botany to the practical problems of life.

Most of the facts associated with the practice of plant breeding have been known to scientists for years. It will be the effort of the writer to collect and digest those facts during the next few months for the benefit of the readers of the Kansas Farmer, and for the use of experiment station workers at the State Agricultural College.

The laws of nature are usually expressive of contradictories. Unless the plant breeder is aware of this duality in nature he is likely to be unsuccessful in his attempts. The following are some of the natural laws that every successful plant breeder should understand:

1. The law of sex, or the union of two individuals to form one.
2. The law of divisibility or the separability of one individual into two or more.
3. The law of heredity, or the power of parent to transmit qualities to offspring.
4. The law of individuality, or variation, which is the ability of offspring to differ from parent.
5. The law of crossing, or the "revitalization of the species." Darwin's statement of the law is as follows: "Nature abhors perpetual self-fertilization." This law governs a creative process.
6. The law of close fertilization, or the cumulative or conservative process.
7. The law of the struggle for existence. This law may be said to govern the selfish or egoistic tendencies of living beings.
8. The law of the struggle for the preservation of the life of others. Henry Drummond calls this "the law of self-sacrifice." It is founded in reproduction and is the altruistic tendency of nature.
9. The law of the survival of the fittest, or natural selection.
10. The law of the survival of the unfit. This law might better be called the law of the love of life. It emphasizes the need of artificial selection, if we are to accomplish anything of value in plant breeding.
11. The law of evolution and adaptability to environment.
12. The law of devolution, or reversion. Atavism is an example of reversion.
13. The law of the fixedness of plant forms.
14. The law of the flexibility of plant forms.

THE LAW OF SEX.

All of the higher plants in a state of nature have sexual organs, and these are necessary for the reproduction of the species. The male organs are called stamens and the female organs pistils. The stamens produce pollen and the pistils produce ovules, or rudimentary seeds. An ovule will not develop or grow into a seed until it has received into itself the contents of a pollen grain. The reception of the contents of a pollen grain by an ovule is called fertilization; the application of the pollen from the male to the female organs is called pollination. Some plants have both male and female organs in the same flower, as in wheat, oats, rye, barley, beans, peas, apples, peaches, pears, plums, etc. Others bear these organs in different flowers of the same plant, as in maize, cucumbers, melons, squashes, oaks, walnuts, hickories, beeches, birches, alders, etc. Other plants bear the two kinds of sexual organs on different plants, as the willows, poplars, Osage orange, mulberry, sassafras, hop, and hemp.

Sexuality of plants is one of the wonderful facts in nature. Prof. L. H. Bailey says that sex has two offices—"to hand over, by some mysterious process, the complex organization of the parent to the offspring, and also to unite the essential characters or tendencies of two beings into one." Sex is not found in the lowest orders of plants. It appears only after there has been a considerable progressive differentiation of the body of the individual into members and organs. It is intimately associated with the law of self-sacrifice, whereby one individual willingly gives up its life in order that others may survive. It provides for variation, thereby increasing the chances of offspring to survive. This great law is at the foundation of all the other laws that obtain in plant breeding.

THE LAW OF DIVISIBILITY.

Plants increase in numbers by the division of one individual into more than one. Upon the tiny, one-celled bacterium and the mighty Sequoia of the Sierras, the law works just the same. No new plant is formed which has not prenatally been a part of a pre-existing individual called its parent. This law holds good in sexual as well as asexual reproduction. The horticulturist makes use of the law very extensively in bud propagation. Plants propagated from buds usually vary from the original type much slower than plants propagated from seeds. This law might be called with propriety the law of the conservation of the variety. When reproduction is limited for a number of generations to the kind of division known as bud propagation, either artificially or by means of conditions imposed upon the plant by physical nature, the tendency is for the species or variety to lose the power of reproduction by seeds. This is a mark of decadence. A fact of such import should be understood by every plant breeder.

THE LAW OF HEREDITY.

At least since the times of Moses, man has recognized the truth of the law as it was recorded by the inspired writer: "And God said, Let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit after his kind."

If there were no such law as heredity, there would be no use for us to exercise any intelligence in the selection of parents from which to breed. Every characteristic of offspring would then be a matter of chance. We could not predict whether an apple seed would produce an apple tree, a peach tree, an oak tree, or a pumpkin vine. Louis Leveque de Vilmorin says: "The tendency to resemble its parents is generally the strongest tendency in any plant." Man is never possessed with sufficient information, however, to enable him to breed plants or animals with a certainty that definite results are going to be immediately forthcoming. Darwin says: "Inheritance is not certain; for if it were, the breeder's art would be reduced to a certainty" (p. 447, Vol. I, "Animals and Plants Under Domestication"). The law is probably just as definite and fully as easily comprehended as any other law of nature.

THE LAW OF INDIVIDUALITY.

To see that living beings are unlike, we only need to open our eyes and look. No two leaves are alike, no two blades of grass, no two grains of corn, no two mustard seeds. Every bud on that apple tree is different from every other bud. This law, in a measure, contradicts the law of heredity, and it is right that it should. If the young had not the power to differ from its parent, it could exist only in the same environment that surrounded the parent. Such a condition would cause the greater part of the world to be uninhabitable, unless the Creator would step in and make new plants and new animals from time to time, for all the different environments. A world of such a nature as this would be like a human heart controlled only by volition. If the owner should forget to tell his heart to beat for a few moments, he would die from heart failure.

A living being feels the pressure of environment and strives to adapt itself to that environment. Material life strives to adapt itself to its surroundings just as certainly as does intellectual life. Both abhor discord, both are possessed of an inward power which strives to change the outward individual self so as to bring that self into harmony with the rest of the world. Plants vary because variation is one of the attributes of life. Not only do they vary when contrasted with each other, but each individual varies at different periods of its own life when contrasted with itself at other like periods. The Jonathan apples that I ate from my favorite tree last year were not just exactly like the Jonathans that I ate from the same tree this year. Nothing possessing life is absolutely stable. Equilibrium is a characteristic of inaction—of death.

The principal variants outside of the plant itself are soil and climate. Darwin stated Knight's law of the excess of food supply in the following words: "Of all the causes which induce variability, excess of food, whether or not changed in nature, is probably the most powerful." Excess of food may be caused by a number of different circumstances, of which the following are chief: Artificial fertilization, tilling the land so as to promote the weathering processes, isolation of the plants so as to give each plant a monopoly of a large quantity of food, natural fertility of the soil as we find on our Western prairies, variation in the taste of the plant by which it selects some element from the soil which its competitors do not want. Cultivation, by furnishing this excess of food supply, is a very potent cause of variation. Cultivated plants puzzle the botanists because they refuse to be classified. This proves them to be the most natural of nature's products, for nature does not concern herself with the production of species or genera. These are the mental products of man.

Eugene Warming, a great German botanist, has written a book on ecological plant geography, which proves that a majority of the differences in appearance which plants manifest are due to the physical or chemical nature of the soil and to climate. Mr. Darwin says: "The experiments of Vilmorin and Buckman on carrots and parsnips prove that abundant nutriment produces a definite and inheritable effect on the roots with scarcely any change in other parts of the plants."

Again I quote Darwin: "Separate growth is the first step in cultivation. Wild plants flourish vigorously when placed by themselves, even on poor land." Professor Bailey says: "Rich and moist soils tend to 'break' the type—or to cause initial variations—to produce verdant colors and loss of saccharine and pungent qualities, to induce redundant growth, and to delay maturity and thereby to render plants tender to cold winter climates."

The variations of plants due to a change of climate, generally, are not as erratic as those called forth by a change



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of food supply. They are of vast importance, however, to the agriculturist. Climate modifies the stature, form, leafiness, fruitfulness, colors of leaves, flowers and fruit, and length of life of the plant.

"Metzger obtained seeds of maize from various parts of America and cultivated the offspring in Germany for several years. A tall, broad-grained, white variety from the warm regions of America underwent such a marked change that in the sixth generation it had become a dwarf, flinty, yellow variety. Fritz Mueller says that a dwarf variety with rounded seeds taken from Germany to south Brazil produced plants as tall as the native sorts and seeds as flat" (Darwin, "Animals and Plants Under Domestication," Vol I, p. 341.) Mr. Darwin also says, in the same volume: "It is notorious that the proportion of gluten of wheat differs much under different climates." Experienced farmers well know that the semi-tropical climate of Kansas has a tendency to retard the time of ripening of choice early sorts of all the grains. The longer an early variety of wheat or corn is grown in our State, the later it seems to get. For early varieties, it will be necessary for us to import seed from Northern States until we learn how to control the conditions of growth much better than we know today.

GEORGE L. CLOTHIER.
Cornell University, February 13, 1899.
(To be continued.)

Soy Beans, a New Crop for Kansas.

Press Bulletin Kansas Experiment Station.

The Kansas Experiment Station has been growing the soy bean for the past ten years, starting with a small patch, and increasing the area until last year 35 acres were grown. It is a good drought-resister, is not touched by chinch bugs, and the beans are richer in protein than linseed meal. With sufficient moisture to germinate them, a crop can be grown after wheat and oats are harvested. In 1896 the yield on ground after wheat was 8 bushels per acre, in 1898 6 1/2 bushels. With linseed meal at \$25 per ton, these crops after wheat would be worth \$6 and \$4.68 per acre. When planted earlier in the season, the yield of soy beans is from 10 to 20 bushels per acre. The soy bean not only furnishes a crop rich in protein, but at the same time enriches the soil. Henry Rogler, one of our graduates, reports an increase in large fields of 5 bushels of wheat per acre on land where soy beans had previously been grown, over land that had not been in soy beans.

With dairy cows, soy bean meal takes the place of linseed meal, being somewhat richer in protein, a laxative feed, and softening the butter fat. Not over 3 pounds per day should be fed to a cow, and the softening effect on the butter may be overcome by giving feeds having the opposite tendency, such as corn, Kaffir corn, and cottonseed meal.

In the winter of 1898, in fattening 7 1/2-months-old pigs, the gains per bushel of feed were:

Kaffir corn meal	Pounds.
Shelled corn	11.7
Kaffir corn meal four-fifths, soy bean meal one-fifth	12.3
With pigs 6 months old the gains per bushel of feed were:	

Kaffir corn meal	Pounds.
Shelled corn	9.4
Kaffir corn meal four-fifths, soy bean meal one-fifth	11.2
With both lots the pigs having soy bean meal made the most rapid growth and were ready for market much earlier.	

With weaning pigs the gains per bushel of feed were:

Kaffir corn meal	Pounds.
Corn meal	10.4
Kaffir corn meal two-thirds, soy bean meal one-third	11.5
Corn meal two-thirds, soy bean meal one-third	15.4
In the fall of 1898 this station bought of farmers 60 ordinary stock hogs of	

mixed breeding. The gains per bushel of feed in fattening these hogs were:

Pounds.	
Kaffir corn meal	7.5
Kaffir corn meal four-fifths, soy bean meal one-fifth	12.0

The hogs fattened with soy bean meal have just been marketed, while those not having it will not be ready for four or five weeks.

The soy bean is an erect-growing plant, 1½ to 3½ feet in height, with stiff stem, having branches thickly covered with pods. Cold weather hinders its growth, and for this reason it is not best to plant until the middle of May; and if the rainfall is sufficient a planting may be made as late as July 1. The ground should be in good tith, and the weeds thoroughly killed just before planting. Plant in drills, the rows 32 to 42 inches apart, dropping seeds 2 inches apart in the row. One-half bushel of seed per acre is required. Cultivate as for corn, using small shovels on the cultivator, and being careful not to ridge the ground. When the pods turn brown, cut either with a self-rake reaper or with a common cultivator rigged up with two horizontal knives bolted to the inner shanks. Put the stalks in cocks, where they should be kept until cured. Thresh with a common threshing machine. Run slowly and use all blank concaves. The beans may be fed whole or ground.

We believe the soy bean is worthy of a trial in all parts of this State, and that the trial should not be made on less than an acre; five acres would be better. Hundreds of people have tried planting a quart of seed, with the result that grasshoppers and rabbits harvested these small patches.

The Hedge Question Again.

Editor Kansas Farmer:—If this is a desert land, I fully agree with Mr. Kershner, in his reply to my article on groves and hedges, in the Farmer of January 19th, but as this is not a "desert" land, but one with a good soil, climate, and an industrious people, I cannot think the points in his article are well taken.

To show that conditions have changed, I will point to the Kansas Statutes of 1868, page 495, on hedges: "That any person planting an Osage orange fence * * * will receive an annual bounty of \$2 for every 40 rods so planted and kept up." And Statutes 1868, page 1094, on trees: "Every person planting one acre or more of prairie land * * * and every kind of forest trees * * * and every person planting, protecting and cultivating for three years one-half mile or more of forest trees along any public highway * * * shall be entitled to receive * * * an annual bounty of \$2 per acre for each acre so planted, and \$2 for each half mile so planted." And then to Kansas Statutes of 1897, Vol II, page 845: "Owners of real estate in any county in the State of Kansas shall keep all hedge fence along the public highway cut and trimmed down to not over 5 feet high. * * * All brush cut from said hedges shall be cleared up and removed or burned," and on trees (Vol. I, Statutes 1897, page 289): "It shall be lawful for the board of county commissioners in any county in this State to offer a bounty to any person in said county who shall hereafter plant one or more acres of land with forest trees. * * * Here we have the laws on these subjects, about thirty years apart. On trees, a change from a direct and positive bounty, general in application to every person complying with its terms, in 1868, to a simple, "It shall be lawful, etc." in 1897; and on hedges, a positive bounty "that any person" so planting Osage orange fence shall receive a bounty for every 40 rods of it so planted to the extent of \$2 per annum in 1868, while in 1897, or thirty years later, the tune is "Owners of real estate * * * shall keep all hedge fence trimmed and cut to not exceeding 5 feet high, and the brush removed or burned." In one case, paying a man for improving his land, and in the other requiring him to work "free gratis and board himself."

No, the fact is, the day for hedge fences is past, and they are being now removed in many parts of the West, and post and wire fences substituted. Wire fence is now much cheaper than hedge fence, both as to first cost and annual repair, and yet there is room for some wide-awake inventor to find out some cheap and permanent corner post for wire fence that will not give to the pressure of the wire. Some practical woodsmen believe there are more cords of wood now growing in the State than ever before. It is well known that since the ravages of prairie fires have been greatly reduced the area of forest trees has greatly increased. This is true all over the eastern part of the State, and, while there has been some land cleared up that was once forest, there has, I think, been more allowed to go back into forest trees. I know of acres that you could drive over

with a team and wagon thirty years ago that now are covered with a thick growth of forest trees. So, let public sentiment still continue to change against setting out hedges, and also trees, except for shade, and while we have more wood than ever and less and less use for it, as iron and steel are now used where wood used to be, let Arbor Day be done away with and let no one be encouraged to set out a hedge or a forest tree save for some special purpose. A. C. SHINN. Ottawa, Kans.

Relative Cost of Raising Kaffir Corn and Corn and Comparative Value of Crops.

Editor Kansas Farmer:—Like many other farmers, I am deeply interested in this subject, so thought I would take a little time and commit my thoughts to paper, expressive of my own observations, together with some important results bearing on these subjects obtained from experiment stations. First, as to methods of planting and soil preparation: If listers are used for planting, the cost is practically the same for Kaffir corn and Indian corn, but, while listing seems best for Indian corn, surface planting is probably best for Kaffir corn in this portion of the State. Many farmers, however, think it advisable to occasionally plow their fields intended for corn. Where the ground is plowed and harrowed well before planting, the shoe press drill comes into good play in getting the best distribution of Kaffir corn seed, and, at the same time, accomplishes more than can be done with a corn-planter, putting the rows nearer a proper distance apart, and securing better germination. One bushel of Kaffir corn will plant a third greater acreage, so that it is cheaper than corn for seed purposes. From 3 to 5 pounds of seed is considered enough for a good stand.

The Oklahoma station secured the best yield of fodder and seed when stalks were 2 to 3 inches apart in the row. Kaffir corn can be planted later in the season than corn, say from the middle to the last of May. Plowing at this time helps to get rid of the weeds, so that while the Kaffir corn may grow slower at first there is practically no greater difficulty experienced in keeping out the weeds than in corn fields.

Kaffir corn is usually laid by later than corn, and thus the ground is left more exempt from weed seed the coming year.

Cutting up Kaffir corn is more expensive than corn, as it produces about twice the fodder, but, as the shocks are much closer together, the cost of putting it up, ton for ton, is not so great as corn fodder. A man and a one-horse sled will cut about 3 acres of corn per day or about 2 acres of Kaffir corn. When Kaffir corn and Indian corn are bound with corn binders the cost of twine for the Kaffir corn is practically double that for the corn. Kaffir corn fodder is as good as the generality of corn fodder, as it is nearly always cut green and nice, while corn fodder may be seriously affected by drought or winds. Kaffir corn stands up much better than corn and the fodder handles much better in winter, as it is heavier and lies closer together, so that the wind does not blow it around so much. Kaffir corn can be headed as cheaply as corn can be husked, either in the shock or standing, but the heads must not be put in too large a pile if headed while yet standing, nor placed in the granary any great length of time after drying out, as mice are liable to become very bad in it.

This leads up to threshing, and we find that it costs practically twice as much to head and thresh Kaffir corn as it does to husk and shell field corn, so as to get them in to grinding condition. Kaffir corn makes good yields on badly washed slope lands or high uplands and impoverished old fields where corn almost fails, upon which I have hardly seen a good crop of corn in the last ten years.

The farmers here are putting in a larger per cent of their poorer land to Kaffir corn yearly and confining their corn to the very best part of their farms, and, even when this is considered, Kaffir corn has almost doubled on the corn crop this year, in yield of both seed and fodder.

At Manhattan, 52 pounds more pork was produced from one acre of Kaffir corn than from one acre of corn. At the Oklahoma station, steers made practically as good gains on ground Kaffir corn as upon ground corn. Corn meal seems to have somewhat the preference over Kaffir corn meal as an article of human consumption. There is hardly any doubt but what work horses do as well on Kaffir corn heads as on ear corn, and no doubt it is better for chickens. Farmers are fast learning the advantageous effects of combining feeds into balanced rations when fed to animals kept both for breeding and feeding purposes, and when this is done Kaffir corn is brought into still closer rivalry with corn. Black-hulled

white Kaffir corn can be ground some faster than corn, as the small seeds work farther down into the ordinary feed grinders than corn. Experiments indicate that a larger per cent of Kaffir corn than of corn passes through animals undigested, either ground or unground. It is more difficult for hogs to gather up the waste grain when running after cattle fed on Kaffir corn than corn. If it be true that Kaffir corn can be grown successfully on poorer land than corn, the rental charge against the crop should not be considered so high as corn. If we should make some allowance for the lack of digestibility of Kaffir corn as compared with corn, say one-fifth, and omit from our calculations the expense of planting and cultivating both crops, which are practically identical, we have the following:

Value of average corn crop of 27 bushels per acre, at 25 cents	\$6.75
Value of average fodder crop of 1½ tons per acre, at \$1.50	2.25
	\$9.00
Rent for corn land, per acre	\$3.00
Cost of harvesting crop	.75
Cost of husking and shelling at 5 cents per bushel	1.35
Balance	\$3.90
Value of an average Kaffir corn crop of grain, 35 bushels per acre, at 20 cents	\$7.00
Value of an average Kaffir corn fodder crop, three tons per acre, at \$1.30	3.60
	\$10.60
Rent of Kaffir corn land, per acre	\$2.00
Cost of harvesting crop, per acre	1.25
Cost of heading and threshing, at 10 cents per bushel	3.50
Balance	\$3.85

This estimate of yield of Kaffir corn is nearly 11 bushels under the average yield at Manhattan, while the yield of corn is only about 7 bushels under, the yield there being 45.9 for Kaffir corn and 34.2 bushels for corn for nine successive years, which is above the average for the State.

If some cheaper means could be found for heading and threshing Kaffir corn, I am of the belief it would nearly supersede corn; at any rate, the average yield of corn for Kansas will be raised by the introduction of this crop. In time that will render her more enviable as a corn-raising State by utilizing her poorer corn lands to a better purpose than has been done heretofore. ALBERT ROGLER. Matfield Green, Kans.

Disposing of Corn Stalks.

Editor Kansas Farmer:—As it is about time for the tiller of the soil to hunt up his old rusty stalk-cutter, or, in case he used a rake, to be on the alert for suitable poles to supply missing "teeth," I thought I would give a little of my own experience in regard to cutting stalks.

Since I have been farming here I have used a stalk-cutter part of the time, but have found that it worked very unsatisfactorily—except an occasional year, when it was too dry to grow a decent crop of stalks—and when I had a heavy crop I would be compelled to resort to raking and burning them in order to cultivate the ground successfully. Now, I am well aware that we ought not to burn anything in the way of refuse that would tend to loosen the soil or make it more "friable," so, the past two years, I have come to the conclusion that there is a much better way to dispose of the crop of stalks than by either burning or cutting with stalk-cutter. I find most farmers use a two-horse machine that takes but one row at a time, and it is a slow job, and, to say nothing of the jolting one gets, it is not a pleasant job. When in town, a few days ago, I saw a number of new stalk-cutters—both two- and four-horse—being put together for the spring trade, and I wondered if it was possible that the farmers did not know that there is a better way. For the past few years I have used several methods, and have come to the conclusion that an 8-foot 20-inch disk harrow is the best of all. On a large ranch one twice as large would not come amiss, but on the average Kansas farm 8 feet, or 16 disks, are enough. The field should be gone over first with a long pole, or heavy drag, lengthwise of rows; then the disks should be run at right angles or crosswise; then, after the field has been gone over, go back to place of beginning and split the ridges, so to speak. By this I mean, run the middle of the machine where the "lap" or the ends met in going over the field the first time; this, instead of leaving the land in "ridges" and "furrows," will leave it nice and level, and you will not only have the corn stalks "pulverized" but the land as well. Most farmers double list their corn land. I would much prefer the disk to the extra listing, even if there were no stalks in the way. I speak from experience, for I have tried both. In fact, there is not a machine made that will save the farmer more

FACTS ABOUT HEALTH

It is Easy to Keep Well if We Know How—Some of the Conditions Necessary to Perfect Health.

The importance of maintaining good health is easily understood, and it is really a simple matter if we take a correct view of the conditions required. In perfect health the stomach promptly digests food. The blood is employed to carry nourishment to the organs, nerves, muscles and tissues which need it. The first great essential for good health, therefore, is pure, rich blood. No medicine has such a record of cures as Hood's Sarsaparilla and it is because it is the one true blood purifier. Hundreds of people are alive and well today who would have been in their graves had they not taken Hood's Sarsaparilla. It is depended upon as a family medicine by thousands.

Hood's Pills are the only pills to take with Hood's Sarsaparilla.

than a good disk harrow. But I cannot too forcibly impress upon the mind of the investor that he should get a large-sized disk, not less than 18-inch, and the 20-inch is to be preferred. There is not much difference in the original cost of the stalk-cutter and the disk-harrow. The disk will run longer and do better work than the stalk-cutter without re-sharpening, but it costs more to sharpen the disks. They should never be put into the fire but should be ground on an emery wheel. As to the kind to get, it would be hard to say. Nearly all of them are good; some, of course, are better than others. I would prefer one that threw the dirt away from the center, instead of the opposite, as it is less liable to clog, and would select the plain bearings, well protected from dirt, in preference to the ball-bearings, as they invariably "wear flat" from the tremendous side draft. Leon, Kans. J. W. MARTIN.

Taking Care of Kaffir Corn.

Editor Kansas Farmer:—As there has been so much said about harvesting Kaffir corn, I will tell my experience with it. I planted 20 acres on sod, with a two-horse corn planter, 3 feet 8 inches apart, using drill plates. It did not require any cultivation on sod.

When the corn was about half ripe, I took a McCormick wheat binder and bound it. (I say wheat binder, because we have corn binders in our country, but a farmer who does not raise more than 30 or 40 acres can not afford one). I cut two rows at a time, shocked it and stacked when dry. Stacked where I wanted to feed it, in narrow ricks or round stacks. Put up that way it will keep over summer if it is not needed. I had some stacks left over last season and fed it this winter, and it was as nice as when put up. It must be dry when stacked.

There is no loss in feeding if fed where poultry and hogs can get to it.

It can be threshed the same as wheat, but I do not think it economy, for any kind of stock will do well on it without threshing.

I like to plant thick, for it makes more foliage and smaller canes. Alert, Okla. L. YOUNT.

The Discussion on Alfalfa.

Editor Kansas Farmer:—I have read with interest the report of the discussion of G. W. Watson's paper on alfalfa in last week's paper. I notice that some statements credited to me were certainly misunderstood by the stenographer. I claimed that the value of alfalfa was often overrated, and, in answer to a statement that it would grow anywhere in Kansas, I stated that on the high uplands in the part of the country where I lived it has not been a success, although those same lands would raise fairly good sorghum, Kaffir corn, and corn. Our bottom lands raise as good alfalfa as any in the State, I think, seldom failing to produce four crops if cut at the proper time, and it sometimes attains a height of 4 feet, instead of 4 or 5 feet, as I was reported to have said. I am a firm friend of alfalfa and believe, taken all around, it is the best crop raised in Kansas, but if all the extravagant reports that have been circulated about this valuable grass were true, we all could amass fortunes in a short time by putting everything into alfalfa. I do not refer to any statements made at the breeders' meetings. I believe they were made by careful and honest men and were probably correct, yet even they could hardly be applied to all parts of the State, even where the soil is of the best. Alma, Kans. A. M. JORDAN.

Men, take notice, our catalogue explains how to learn barber trade in eight weeks, mailed free. Address, Moier Barber College, St. Louis.

The Stock Interest.

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

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JUDGING AT SWINE SHOWS.

By H. M. Kirkpatrick, of Connor, Kans., read before the Kansas Improved Stock Breeders' Association.

The exhibition of swine or other domestic animals, the products of the soil, the factory or the mine, at a public gathering, is a praiseworthy thing to do.

I am to discuss the showing of swine and the judging of it, but what is true of swine exhibits is practically true of all classes. The primary and outstanding object is probably education; next is the advertising the exhibitor hopes to obtain out of it. The hope of reward by winning the prize money is another object.

In its educational features, we have, in my judgment, the greater value. The larger the territory represented by the exhibits, the greater the educational advantages. There is no other practical method of seeing so much of our competition; seeing ourselves as others see us; seeing others with their best foot foremost; seeing the best the county, State, nation or the world can produce against us; seeing the ideals built up by those we have to meet in the field of trade; judging of their methods; the cultivation of your judgment by comparison; the discovery that every exhibitor makes at every show, that there are others. Go into the veriest wilderness, climb the highest mountain, only to discover that someone has been there before you. It is no mean courage that nerves a breeder to make his first show, and after defeat it is simply heroic to make his second one. The only thing casting a shadow over the heroism of it is that which nature has implanted in every parent's breast, the conviction that their offspring is the nicest, sweetest, and fattest, and even in defeat this conviction is still with us. Nature has been very kind with us in this respect. She heals our wounds received in the ring by assuring us that the judge does not know a sheep from a goat; that he is swayed by prejudice; that his type of a hog is not the modern one; that his ideal runs back to old Lall's Victor, long since superannuated; that the judge was from Missouri, and you did not have a chance to "show" him; that he was a disciple of Calhoun on State rights; that bias and revenge run riot with his judgment; that an amateur has no standing with old "vets;" and that money settled it.

But, my dear sirs, I desire to make most out of the educational features of the show. A just and true award is the great object to be attained. A judgment fully alive and educated to the conditions requiring the best type and an eye capable of discerning it, the courage of a Hobson and the honesty of a Lincoln, are some of the virtues that qualify the judge—but, alas, so rare.

The management, say, of a Trans-Mississippi show cast about for a judge. Various communities in interest throughout the Trans-Mississippi Valley write their wants to said management. That's all right. The management wants a good judge. That's all right. But they don't know a good judge when they see him. They have to guess at it. So, they guess one in, and for fear they haven't guessed right and the wanted exhibitor will know it, they "sh-sh-sh," until the day the curtain rises, so that no one will be scared away from coming up with their pigs and helping to make a great show and filling the pens—(at 30 cents a front foot. Pens 7 by 8, the long side in front, \$2.40 per pen. Exhibitors having 10 pens entitled to three admissions to the grounds, at \$2 per ticket, including photograph, or 60 cents a pen. Total, \$3 per pen, said to cost \$2.75). If the judge was known to the exhibitor he could defend himself from the known incapacity, prejudice, set on his type, revenge against a fancied wrong, or other disqualifying thing, by staying at home. Yes, but that would militate against the success of the show, and you would miss your education.

But, my dear sirs, I don't believe in this hush system of appointing judges. My sense of justice and fairness cries out against it. My desire is to have a judge appointed that can stand the scrutiny of the public "before" as well as "after taking." I care not by what method he is selected, I want to know who he is, and I want to know it before putting up my entry and pen fees. I can think of no good reason why they should not be known, excepting a financial one, where, say, a Trans-Mississippi management should make a poor selection that would threaten the success of the show. But is that not quite as good an argument against the secret sys-

tem? If a mistake has been made there ought to be an opportunity for correcting it. If a judge has been appointed that an exhibitor knows is at enmity with him, he should have the privilege of staying away, saving the burdensome expense always attending and the mortification of his failure. If the judge appointed is known to have a certain type of a hog as his ideal, and I do not raise that kind, I want an opportunity to keep away from the buzz saw.

To do justice to this subject it is not necessary to mince the matter. It is a well-known fact that all judges have not been free from bias, revenge, ignorance, and dishonesty, and when I have reason to believe that any of these disqualifying conditions exist, I ought, in all fairness, be permitted to withhold my patronage. Therefore, I declare now that I will never make an exhibit of my stock at a show where the name of the judge is not published or announced in the beginning.

It has been said that there is no success like success. The successful exhibitor on this basis, no matter how unworthy for whatsoever cause, gets the full benefit of his award, but the public is misled, and the lessons we would have taught are wrong. The whole structure of education falls. It not only falls, but the lesson is false and the show fails of its great purpose. (The selection of the judge, therefore, not only as to the fair treatment of the exhibitor, but for the correctness of the things taught, is the greatest problem so far as the public is concerned, of all the conditions of the show. To choose an honest, upright, competent judge should be the most carefully considered act of the fair management. Select him of such character that you will not be ashamed of him. Publish his name, and address, too, if you please. Don't say that if you do he will be approached by the dishonest exhibitor. If he is an approachable man, all the more should he be known, and, moreover, if of such kind, somebody will get there with him before the show will have given its first example.

Then comes the question of the single judge, or the trio. I have never been quite able to go back on the old trio system. It's a little cumbersome, sometimes difficult, and more expensive, the latter always a consideration with most fair managements. (The Trans-Mississippi, again, for illustration, could never have been induced to have more than one judge at a time. But, while these are objections, we have, on the other hand, a compromising of radical ideals, a majority of judgments, and three times as much honesty, three times less approachability, and three times as many to kick. But, sirs, if it is to be a single judge, tell me who he is, and I will tell you whether I put up my pigs in the raffle.

DISCUSSION.

Mr. Allen: The only objection that I make to that paper is, that Mr. Kirkpatrick has shown discredit to his paper, by saying that he wrote it last night. I think he did good work in that time. Several years ago I was managing editor of a paper in this city, and my assistant wrote an article that was all right. I examined and put my "O. K." on it. I spoke to him about that article, and he said: "It did not take me over twenty minutes to write that article." I reached up on the hook and took it down, and said: "If it only took you twenty minutes to write that article I want a little more time to examine it in." "Well," said he, "I have been thinking about it for quite a while." Of course, this is a well-delivered paper, but I think it ought to be discussed. We are going to have a series of State fairs in Kansas, and I wish you to discuss the paper. It will do us all good.

Mr. Updegraff: Gentlemen, this was a subject suggested to the secretary of this association, because it was considered to be an important one. It has been a mistake, as was suggested in the paper, of fairs, both county and State, and has been, for many years past, until possibly the last two years—perhaps three years—to have not less than three judges to judge the different departments of State and county associations. Last year, by some three or four county fairs, this association was requested to outline classes for swine displays. At this meeting we have this request, which has been replied to by Brother Kirkpatrick in his paper, "Judging at Swine Shows." And the question has been brought up as to the advisability of one or more judges of the different departments. This is a question we are all interested in; it is one we should not pass by hastily. It is one that we want an expression on as coming from the swine breeders of the State. So far as I am concerned, while I am on my feet I will say that I am in favor of the one-man system. I believe there are honest and capable men who can judge each department. I believe in the one-man plan more for the reason that it lessens the expense of the association, which is

always at a great expense in all departments, more, perhaps, for that reason than any other; not that one man's judgment is better than three, but because one man is competent, honest and straightforward and, as a rule, suits the exhibitors in all classes.

Mr. Treadway: We have a most excellent fair at our place, and perhaps the judging of the exhibits has been the least satisfactory, to the association as well as the individuals, of any feature of the fair. They always tell us they will make every effort possible to secure foreign judges, and not those who are acquainted and who are local men; and they tell us if it is possible they will get an expert to judge. Then they place the matter in the hands of the executive committee of that association, and I will remember that two years ago, and last year, too, a selection was made, as usual, of three members for judges, by the committee, and they were local men, all neighbors and friends of the exhibitors, and that executive committee told us that was the best they could do. I knew the men very well. One of them was an elderly gentleman, a fine old man. We call him 'Squire, because years ago, and for many years, he had been a justice of the peace, but that old man was a Poland-China man, and a peculiar kind of a one too. I had no interest in the exhibits, but I was looking over the pens the day the judges came along to award the premiums of sweepstakes for sows, and they came to a Poland-China sow, and this old gentleman says: "Gentlemen, you need not go any further; there is not another sow in the pen that has the white spots on her sides as that one has; my decision will rest with her; you fellows can do as you please." He said it very good-naturedly and kindly, and he directed the words rather to me directly and indirectly to the members of the committee. They smiled and passed on and they put the ribbons elsewhere. Now, there is no satisfaction in that kind of awarding. That old gentleman would have awarded the premiums on simply the markings on that sow. That was a neighbor of old Billie McGee's, back in the Big Miami Valley in Ohio, and the kind of hogs that McGee had bred was in his mind. He had not kept up with the Kansas hog and style, and nothing else would do but that particular marking. So, you see, it is very plain that they should have expert judges. We have had represented there a splendid lot of hogs—good ones from southern Kansas, and from western Kansas, also, but that is the kind of judges we have. How can we help it? I am interested in the subject myself, and I am glad the secretary is, also, but what I want to know is, is there a remedy, and is there a way out by which we can escape and get on a more solid basis in this line?

Mr. Heath: I attended more county fairs this year than I have attended for the last six or eight years, and it was probably owing to the fact that general prosperity was here, and that the breeders were coining money. I visited one fair—of course, when we tell stories we never mention names or give places—and at that fair there was quite a representative cattle exhibit. They had a committee of three, as they had had for twenty years, and in their classification they had Herefords and Shorthorns all mixed up in one class. It was an old Shorthorn stronghold, but the Hereford men made the largest show of their breed that had ever been made in that part of the State, and, as a matter of fact, they really outclassed the Shorthorn exhibit, because they had an unusually good lot of Herefords. But the committee, of course, being made up of responsible citizens of the county and who had never before seen a Hereford exhibit at their county fair, awarded the premiums to the Shorthorns; and, of course, the Herefords were not in it a little bit. That was one of the most striking examples of incompetence by a picked-up committee of three that I ever saw in my life.

Mr. Snyder: I happen to be secretary of a fair association that is over a third of a century old, and has held annual fairs during all the time. We have had more or less trouble with this matter of judging, not only in stock, but in all departments, and we have decided that it would be better to have a single disinterested, unacquainted judge than to pick up three of our own citizens who were acquainted with all of the stock, and besides, that it is very much cheaper for the association. We always have visitors there who have not anybody to please and have no friends to reward and no enemies to punish, and it does not cost the fair association much, usually not anything, to get the visitors to act as judge, and we find that it is far better than to have a committee of three to do this judging. We also find that it is better and gives more satisfaction for us to pay the premiums

Veterinary Column.

J. F. H., Cambridge, Mass.—A sprain such as you describe is not incurable. Use Tuttle's Elixir.

Horseman, Elgin, Ill.—There is only one sure way to locate a lameness. Apply Tuttle's Elixir, and it will remain moist on the part affected.

Mrs. F. S. T., Richmond, Va.—If you find a case of colic that Tuttle's Elixir will not cure, it will entitle you to the \$100 reward offered by Dr. Tuttle.

Wilbur S. Davis, M.D., Alton, N. H., writes:

"To whom it may concern:—This certifies that my horse, on the twentieth day of January, 1892, ran away with a hitching post and injured her knees so badly that she was pronounced worthless by several horse doctors. I tried various remedies for six weeks and she grew worse. I at length used Tuttle's Elixir, and in three weeks from the time I commenced to use it I had her on the road ready for work. The knees healed so nicely that it is difficult to find the scars."



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It will do all that we claim for it, or we will refund your money. It will cure all forms of lameness, colic, sprains, cockle joints, etc.

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right on the ground the last day of the fair.

A delegate: I would like to say one word in regard to this judge system, in support of the single-judge system. In my observation, and at the different fairs I have attended, I find that the three-judge system works as a general rule as an injury to the stock, and does an injustice to the man having stock on exhibition, as a rule. Where there is a single judge, he is responsible for the judging of that animal, and he takes it upon himself more in that way. For instance, I could go out and pick up three men, Dick, Tom and Harry, and put them to work. These three men hardly know each other and they do not know a Poland-China hog from a scrub hog. They go to work and they start to judging, and the responsibility is thrown from one to another. They will vote and make a decision, but after that decision is made they can't give you a reason why it was made. One man will excuse himself and place the burden upon the shoulders of the other. There may be one hog there that is a little larger and has more meat on him, and one man will say: "This hog ought to have the premium," but he can't tell you why he does it. So I think the single-judge system ought to be adopted. I was at a western fair in the State, not long ago, and they had offered premiums in the interest of the hog; but one class of hogs was not in that catalogue or premium list. A gentleman there who had hogs of another breed entered those hogs which he had under the class of another breed, and he captured one of the first prizes in that breed of hogs, for a hog that did not belong to that class at all, and they had a committee of three, too. I object to that.

Mr. Westbrook: I have had a little experience in showing stock, and I want to cast my ballot in favor of the single-judge system. I don't like this three-judge system, because, when you get through showing your stock and the premiums have all been given out, and you are disappointed, you can go to the judges and single them out, one at a time, and you almost invariably find two or three of them who are in favor of giving you the prize, but they all lay it on to the other fellow. And I will just say to you, that I have shown sheep in Harvey County, and in my experience often the sweepstakes went to the poorest sheep in the bunch. I asked one of those fellows after they got through—I had not much experience then—how it came they gave the prize to that sheep, and I asked him if he had ever seen a sheep before. "Oh," said he, "I owned forty sheep once." The other fellow had never owned a sheep in his life, neither had the other one. And those were the judges at the Harvey County fair in four or five different classes of sheep. Now, I knew those men did not know anything about the sheep business, but they were 'Squire Something, and Judge Somebody else, and had been a success at something else; honorable gentlemen, but did not know anything about the sheep business. The man that got the sweepstakes on a buck said he was the poorest one he had, and you could buy him for almost nothing. Let some man that has good common sense—and the more experience he has had the better—and he will either tell you that he knows something or don't know anything at all about the sheep business. Then I will be better satisfied, and I will know who was to blame, and

then there will not be those two or three fellows that said my stock was the best, but that the other fellow decided in favor of somebody else.

Mr. Harrington: This discussion seems to be one-sided, but it seems to me there are some things that are in favor of the three judges. In the first place, when you want to hold a county or State fair, you want to entertain the crowd and you want to send the exhibitors away feeling just as good as you can; and sometimes you can have some fun out of the three judges where you cannot have any out of the one. I call to mind a point right in line. I was marshal at one of our fairs, and they called on me to select judges for sweepstakes. I got three men—one was from Nebraska, one from St. Joe and another a country man in Brown County. They brought in a fine exhibit of horses in the ring. Some of them had cost \$2,500. They awarded premiums on three different horses, and they could not agree, of course. I remember that one man put the premium on a little horse, a horse that was a roadster. That horse might have sold for \$100 or \$150, and an \$1,800 horse was ruled out. And finally I had to go and get another judge to untie the knot, and then we did have some fun. They began to swear, and the crowd began to come, and I got another man, and I asked him what he thought about it, and he said he thought it was all right. They entertained that crowd there half an hour or longer, then they were taken away, and as a matter of fact they placed it on the three poorest horses in sight. When you have the three-judge system, and the premium don't come to Mr. Westbrook, but goes to some one else, Mr. Westbrook goes to one of those judges and finds out how he stood and then Westbrook can go home and say to his people: "One or two of the judges were in favor of me, but they were overruled by the other judge, but that other judge does not know anything about it," and the people will say that they did not know anything about it.

Mr. Cheney: I am somewhat surprised that at this late day the members of the Kansas Swine Breeders' Association will commence the discussion of the three-judge system. I have had some little experience in judging stock at fairs myself, having judged not less than three times as an expert, once on cattle at the Nebraska State Fair and one or two other State fairs. My opinion is that a majority of the live stock breeders say that the only way to hold an exhibit of live stock, and have them passed upon, is to have them judged by an expert judge, one who is capable of judging the animal according to its standard and its breed. The breed that is worthy of a name should have expert judges by the association of breeders, and this man should be one who is above reproach. If this is done, satisfaction in judging will be achieved. Otherwise, I don't think it can ever be achieved. It can only be done by expert judges, who are educated especially for that purpose; who have made the judging of cattle, horses, hogs, or sheep a study, and studied it so deeply that they know what they are talking about and are able to give a reason for the faith that is in them. In regard to the judging of hogs at the Trans-Mississippi Exposition, I would say, that if those people would have known enough to have gone to the different associations and asked for a judge and appointed such a judge, the trouble would all have been avoided.

Mr. Kirkpatrick: My paper being the text on this subject, and the suggestions I threw out there being accountable for these discussions on that subject, and for fear you misunderstand my position, I just want to add a word. I am not prepared to advocate the three-judge system as it is practiced to-day, but when it comes to considering it in its true light, and you allow the presumption of Mr. Westbrook and his description of those judges, it is amusing. How much better would he be, I would like to ask him, if he had one fool instead of three. Now, sir, I would not undertake to go back to the old three-judge system, and to advocate it, but at the same time, if it was practicable to get three good, experienced judges, I think I would. But I do not consider it practicable, because it makes so much expense. I know there is a farce about this thing. There is a great deal of incompetency developed from time to time and so much dishonesty. We have many illustrations of it that I could call your attention to. There is one point that I touched on in my paper that I think can be improved upon in the single-judge system, and it seems to be gaining favor. The principal shows will hide their judge under a bushel. I would like to have that thing corrected. I believe that the judge's name ought to be given to the people. That is about the only thing I think of that we could reach that could be remedied. I am in favor of all

fair managements announcing their judges, so that the people may judge of them as to whether they are wrong, and criticize them. They are acting in a public capacity and they are public property after their appointment.

Mr. Robinson: One gentleman has got up here and spoken about the Clydesdale and roadster being placed in the same class, and the judges getting all tangled up, and he having to go out and get another judge to untie the knot. Now, those judges were not to blame for that. The management of that fair ought to have classified their stock. I think that fair managements ought to be very careful in the classification of their stock, so that an expert judge can give a fair and expert opinion on it. To be sure, hogs are not any of them raised for draft or for speed, but they are all good for pork, and different kinds of pork. But I don't think that all those hogs need to be shown for the same purpose, and it would be just owing to the preference of the judge; but he could give a practically fair judgment if they were classified. I think that the duties of a fair management in the selection of their judges is to see that each one is an expert and is able to judge upon the particular line that he is selected for.

Mr. Allen: I think it is all right if he is a competent judge. He need not be ashamed of it, and I think his name ought to be published, just the same as the premium list. When you print the premium list the judges ought to be in there, and if I was selected as a judge I would feel very reluctant to come in there on the last day, and judge at the show and make decisions, without my name being known previously. It looks something like subterfuge if each man cannot stand up and say, I am going to be a judge at that fair, and I am selected as an expert. He is not the man that ought to be called an expert judge.

Mr. Warner: I am but very little acquainted with the management of hog exhibits, but horses and cattle I have had some experience with. If any animal is brought in the ring that does not belong to that particular class, the judge has a right to rule it out. Isn't that right, Mr. Updegraff? I believe that you have had a good deal of experience. Hasn't the judge that right?

Answer: Yes, sir; I believe so.

Mr. Warner: Speaking of the single or three-judge system, I know that it is a great deal easier work for a judge to have two assistants than it is to work alone, a great deal easier. He does not have to work near so hard, because if there is any question raised, the responsibility is divided between the three, and he does not have to carry it all himself. Now, I don't know as it is so much so with any kind of stock as it is with horses. The people are so often very much mistaken—that is the outside spectators. I have been at fairs and have judged horses that were blemished, and no man, I don't care how much of an expert he was, if he was twenty feet away from them, he could not tell what was the matter with that horse; and sometimes judges are criticised by people who do not know where the trouble is. There has been some experience given in here by different gentlemen that was rather ridiculous. I was at a fair at Junction City and the president called me in the ring as a judge, and among the horses that were shown as road horses, some were good and some were poor. Robert McGregor was there. He was there to show his speed, and also exhibited in the roadster class. I was introduced to two of the gentlemen. They each picked a horse, and I took Robert McGregor. There we were, each of us with a horse apiece. I finally said to them: "Gentlemen, this is a shame. This horse is worth over a \$1,000. He is a much better animal than either of those you have picked out." "Now," I said, "do not let this go this way." I have no reason to believe that those men were dishonest. They simply did not know what was the trouble. But I don't know whether either one of those men knew a Clydesdale from a Morgan, or a Morgan from a Hambletonian. That is the great trouble, and, as I said before, I think it is a great deal easier when acting with a committee of two or three than it is to act alone.

Delegate: Did you bring them to your opinion that Robert McGregor was the best horse there?

Answer: Yes, sir.

Mr. Harrington: When I spoke about the judges at the fair in Brown County, I simply cited that to show you how much some men know about horses. Why, the horses they ruled out were worth half a dozen such horses as they kept in the ring; but I believe that those men were perfectly honest.

Mr. Glick: Do you mean to say that a man is honest who would pretend to be a judge of anything that he does not know anything about, and would allow

his name to be given out as a judge? Do you think he is an honest man?

Answer: I just picked the judges up from the ground.

Mr. Glick: They accepted with the understanding that they were judges, and now you say they did not know anything about it.

Answer: Yes, sir; but I believe they were honest.

Mr. Glick: I don't agree with my friend. I think that I am in favor of the single judge, an expert judge. If he is competent to be a judge, he thinks too much of his reputation to give a wrong decision. But I think that a man who will presume to go into a ring and judge Shorthorns or Herefords, when he does not know anything about them, does himself, as well as all parties concerned, a great injustice. He might just as well throw dice, and that is the result of your three-judge system. They will go in there without thinking about committing a wrong, that some one is to suffer on account of their ignorance. Now, fair managers understand this thing somewhat themselves. They do not usually show different classes of animals against each other. It is generally the black cattle against the black, the Hereford against the Hereford, the Shorthorn against the Shorthorn, and so on, and each one of these has a judge, just as it ought to be. You never can give a fair decision when you have all the different kinds of animals in one ring, because of either prejudice or education or surroundings or something that makes a man think he knows why one breed is better than another. Something of that kind will invariably influence his decision in favor of that particular animal, when it may be that the animal really belongs to the third or fourth class in the ring. Hence, I say, the necessity of having an expert judge in the ring. If he knows his business, you can trust him, because he thinks too much of his reputation to decide wrongly or to give a wrong decision. If he is not a judge of the animal at all, he is just as apt to give it to the roan or red animal, simply because of his prejudice in favor of the color of one animal as against the other, and it is the same way with the hogs. If a man is thoroughly honest, knows his business thoroughly, and is competent, he will give his decision to the hog that deserves it. I don't believe, nor I don't see that a man is honest who goes into a ring to judge horses when he does not know anything about whether the horse is a roadster or a draft horse. He is doing the exhibitors an intentional wrong when he goes in for that purpose, and I do not believe that any man, a self-respecting citizen, will go into the ring to judge any kind of animals when he does not know anything about the type of animals that he is proposing to judge. If he is honest, his honesty will keep him out of the ring; and if he goes into the ring without knowing anything about it, he does it dishonestly.

Purchasing and General Management of Swine.

By F. P. Maguire, Haven, Kans., read before the Kansas Improved Stock Breeders' Association.

I was solicited by your honorable Secretary to write a paper on this occasion. I reluctantly consented, as I felt incompetent to write on the most important topic, one that has reached the greatest development, beyond that of any one point of agriculture, or with the annals of farm products.

The hog, in its earliest records, is found in the Bible (Leviticus xi, 7), but in all probability the hog existed, with other animals, at a far earlier period. The hog was highly esteemed by the ancients and was the animal sacrificed to Ceres, the goddess of the harvest.

The wild hog is a native of almost all the temperate parts of Europe, Asia and Africa. Of races and breeds of hogs in different countries, the varieties are innumerable. The most delicate hogs are found in the warm latitudes, while in cooler countries of richer herbage, as Holland, Belgium, parts of Germany and northern France, they tend to become large in bulk, with long bodies and pendant ears. In Sweden and northern Russia the hogs are small and of wild habits.

The hog is not a native of America, but it followed very closely upon the footsteps of the white man. The first swine which came to this country were with Columbus, upon his second voyage, brought from Spain to Cuba in 1493. The next were brought into what is now Florida in 1538. In 1553 the Portuguese took swine to Nova Scotia and New Foundland. All these were doubtless of Spanish origin. In 1604 the French took swine to Canada. In 1608 the London Company brought swine from England to the Virginian colonies. In 1624 swine were taken to the colonies of Massachusetts Bay from England. The Dutch



Mankind needs a herald, like the heralds of old, to proclaim so that all may hear, the vital importance of health. The average man of to-day thinks it beneath his dignity to bother about his health until it is gone. Even then he only takes measures to restore it in an indifferent, contemptuous sort of way. Men cannot learn too soon that health is the most important thing in life—in fact, is life. Without it the most brilliant man will be a failure, and the most robust man will rapidly become a physical wreck. The man who neglects the little headaches, the loss of appetite and sleep, nervousness, hot flushings, cold chills, heavy head, lax muscles, and the multitude of bad feelings that are the heralds of approaching sickness and disease, must pay a tremendous penalty. For men who suffer in this way there is no medicine equal to Dr. Pierce's Golden Medical Discovery. It sharpens the appetite, corrects all disorders of the digestion, invigorates the liver, makes the assimilation of the food perfect, purifies the blood and enriches it with the life-giving elements that build new, healthy flesh. It is the great blood-maker and flesh-builder. It cures 98 per cent. of all cases of consumption and is the best of all known remedies for nervous troubles. Thousands have told, over their own signatures, the stories of the wonders it has performed. Honest dealers will not urge a substitute for the sake of a little extra profit.

Thomas Fletcher, of Clifton Station, Fairfax Co., Va., writes: "I suffered terrible tortures for ten years with 'gastralgia' (pain in the stomach). I then took six bottles of Dr. Pierce's Golden Medical Discovery, which completely cured me."

When the bowels are regular the body will feel good and the mind will be active. Dr. Pierce's Pleasant Pellets cure constipation. One little "Pellet" is a gentle laxative, and two a mild cathartic. They never gripe. All good dealers sell them and have nothing else "just as good."

West India Company in 1625 imported swine from Holland to what is now New York. Later, about 1637, a colony from Sweden settled in what is now Delaware, bringing with them the horse-hoofed swine of their native land. From time to time, as the various colonies settled, and emigrants from all quarters came to our shores, they brought hogs peculiar to their countries. These were turned loose to shift for themselves, to hunt for nuts, roots, herbs, etc. This condition continued until corn was beginning to be their great staple and the hog offered the best means of concentrating this crop. Transportation was limited, therefore the first improvement was toward obtaining a good traveling hog. But these were found to be unsatisfactory, as the large, coarse hogs were too long maturing. In the year 1800 were obtained the first of the large, easily-fed, early-maturing hogs, the Duke of Bedford, an English nobleman, and a friend to General Washington, sending him a pair of pigs as a present. Improvement was the spirit of the day, and hogs were imported from China, Africa and various European countries, the progressive farmer using the introduced breeds to cross on the common stock, and caring little to keep the blood pure. The hogs of that day were of mixed blood, and it is curious to note that disease or hog cholera was unknown. Between 1830 and 1840 distinct types or breeds were recognized and beginning to be perpetuated, until at present there are more than a dozen distinct types of swine, each transmitting its peculiarity with uniformity and regularity.

The desire for the improvement of the various breeds has resulted in the formation of associations of swine breeders, having for members the leading breeders of the United States. These associations register in their records the pedigrees of their different breeds which exist. These are not money-making institutions, but for the improvement of swine, and the information and protection of farmers and swine breeders from bogus breeders.

The Poland-China originated in southwestern Ohio. The name of Poland-China was adopted by the National Swine Breeders' convention, at Indianapolis, in 1872. During the last twenty-seven years there has been no attempt to introduce new blood, and to-day the Poland-China swine is a standard breed, transmitting their characteristics with certainty and uniformity. They are active and vigorous, prolific breeders and good nurses, and have fattening qualities at all ages.

Let us notice that the tide of prosperity has drifted westward. Of all the breeds, Ohio originated the Poland-China; Indiana boasted of what she would do at the Chicago fair; Illinois held some great

hogs and sold them to Missouri and Iowa, and those two States were successful at Omaha, and to invite the wave across the Missouri river is to be careful in purchasing. We should not use any false economy in buying, but buy within our means. When we buy at such extreme prices and expect that I, my, me, and mine to command the public, then some other family steps in and side-tracks us and we have to use the shades of night for parts unknown, rather than face the obligations coming upon us. We wish our sister States unbounded success, as we have chips from every family that exists, and the failure of a man hurts everyone that purchased of him. Now, that we have the foundation to success, we want to manage our herds so as to get the best returns possible. From year to year, as our country progresses, the feeding and breeding of swine keeps pace with the other industries of the country, and to-day the swine industry is the most profitable of any product of the farm. In general, he is the mortgage-lifter, the tax-payer, the farmer's friend. There is no better stand-by on the farm than hogs. The market is always open, whether you have one or fifty. The statistical table of the Government report shows a marvelous progress of the swine industry of this century from the year 1865 to 1890, with an increase of value from \$110,766 to \$295,876,592. The swine of the United States comprise about one-half the value of the principal stock producing countries in the world, and this country will easily maintain the lead because of its vast area of soil adapted to the different varieties of feed. From carefully conducted tests it has been determined that it takes six pounds and four ounces of corn to produce a pound of pork. On this basis it is easy to solve the problem of comparative profits of selling or feeding the corn crop. We now want to know what style of hog is the most profitable for the farmer and feeder, the hog that makes the best returns for the feed consumed. This ideal hog is of quick-maturing qualities, with bones solid and strong, with the largest per cent. possible of ham, shoulders, back and loin and deep sides. As the head, neck and fatty parts are detrimental to the packer, we should improve the depth and length of the side. This is the hog for the farmer, feeder, the butcher and consumer. This is the ideal hog of today.

How shall we obtain our ideal? The breeder, by careful selecting, mating and using proper proportions for growth, obtained to a high degree of success. In selecting the brood sow, let her be good length of body, not too close coupled over the loins, or, in other words, leave plenty of room between the hip bone and ribs. We want roominess in a sow. Let her be broad in forehead, with full eyes, for she must be an intelligent animal. Know that the family after maturity stand strong on their feet, and the sows that carry from twelve to fourteen teats are good milkers. Always select such sows for mothers, and they are good, careful mothers, too. At the same time, having selected your sows, the next step is to procure a suitable male to mate them to. And here I would urge you to take great care, as the male is half the herd. He should by all means be a thoroughbred, so that there will be some assurance of his get being like himself. Now, having told about the type of hogs we should select, the next step is the time of mating, which is as essential as the others. Breed the sows the last half of November and May. This gives us two litters per year to each sow. The next step of importance is the management of the brood sows, that they may be in good condition near farrowing time, for I think a great deal depends on this. From experience, I believe a sow should be fleshy enough to round up the body smoothly, for if she raises a litter of eight or ten pigs they will soon draw on the sow to such an extent that it will reduce her flesh materially. If a sow gets very poor while suckling pigs, the milk is not healthy, for the system is so drained it cannot produce good, wholesome nourishment. I believe quite often the starting of disease in a herd traces to just such a cause, for the pigs as well as the dam are in just such a condition to invite disease. There are other things to be considered under the head of condition besides fat, for a sow may be fat enough, yet, if she has been fed on corn and water alone, she is not in good condition to raise a litter of pigs, as, we have been told many a time, corn is heating and will cause too much fever, and to relieve this we must use some other kind of food, such as bran, oats, shipstuff, or any food that is of a laxative nature, so as to produce as little fever at farrowing time as possible. Feed little or no corn for three weeks before farrowing and for about that time afterward, then begin gradually increasing until you have her on full feed, for I believe corn is the proper food for hogs

and I have always fed corn to my brood sows, but there are very few days that I do not give some shorts or a variety of food, and never make the change suddenly, but by degrees. I separate the sows from the rest and put them where they can select a good bed a week or more before farrowing, and give them plenty of range. Twelve hours after farrowing I give some warm drink, with a little bran or shorts, and increase the shorts until I get her on full feed. When the pigs are three weeks old they will begin to eat. An extra shallow trough should be placed for them close to the feeding place for the sow, but out of her reach. Give them some warm slop of shorts and milk, but while the pigs are growing it will be quite an item to secure this growth at as low cost as possible. One of the cheapest of all of these is grass, clover especially; as the grasses get dry in July they may be supplemented with green oats. Keep them off the oats until June, then they have a rich pasture. As soon as corn crop is ready the pigs should have made such growth that but a short time will be necessary to finish them for market. Plenty of charcoal, salt and ashes should be kept under shelter where they can have access to it.

Some of the prominent breeders of Indiana and Ohio had a phenomenal male and a sow successful in the show ring. They mated the two; then they did not want to inbreed back to the sire, but took the pigs off and bred them; then, after one cross, they called it line-breeding back to the grandsire, thinking to get a world-beater by having three-fourths of the first male in one pig. While they had a few good pigs from this cross in a general way, they broke the constitution of their herd, causing deformities, and let their neighbor breeder take the customer away. And we should use this experience and profit therefrom, and never inbreed nor line-breed until after the fourth cross, then it is all right.

And last, but not least, provide plenty of pure water. You should have a good tank with foundation attached to it, as the water will be cleaner and cooler than in troughs, and they like it and it is much better for them. I have tried in my way to tell how to raise hogs for profit, and will say in conclusion: Do not be afraid to feed. We must not do like the man who threw a nubbin of corn in the mud and said, "Now eat until you bust," for swine breeding and feeding, like all other industries, to be successful, must be based on business principles.

DISCUSSION.

Mr. Rippey: I would like to say a word in favor of the artichoke. I have found that where you turn your hogs out on them, you need have no fear of hog cholera.

A Delegate: Tell us how you raise them. Mr. Rippey: We raise them like you do potatoes, but do not molest them in the spring. Plant them like you do potatoes and cultivate them like you do corn. You should not turn anything onto them until in October; plant them every year, but you want to be careful in pasturing them for you can pasture them clear out.

Mr. Updegraff: I was in the artichoke business two years ago. I planted a little patch and they turned out wonderfully well. I turned the hogs out to run upon them all winter. I did not pay any attention to the patch of ground, and I found this fall, upon examination of that patch, that I had another crop.

A Delegate: From my experience with the artichoke, I consider them good for hogs. But my trouble has been in storing them. Will you tell me how you do it?

Mr. Updegraff: I store them in the cellar, so that I can have them from now on to give to sows and pigs. I never saw anything so cooling to sows as artichokes. Some people do not know how good they are.

Mr. Harrington: If the hog's time is worth anything they would have to work too hard for what they get; they would get too much exercise. But it is generally the opposite, they don't get enough exercise; if they did, they would have better constitutions, stand better on their feet and be able to withstand cholera better. Very few people, can furnish artichokes, and, for the last few years, couldn't furnish clover. The most of us, however, can furnish a crop of weeds, and a crop of clover is not worth any more than a good crop of "pursley" for hogs to run in; they will do fine on it and they will grow sleek and fat. Where hogs are confined to small lots, they do not get the proper amount of exercise, consequently they lack in constitution, will lack good bones, and will not be able to stand good on their feet. And, I would like to add this, that where we can furnish them ground feeds in the summer time and plenty of exercise, we may suc-

ceed, if we have milk; and so far as we can carry it, we must have ground feeds and give our hogs plenty of exercise. It requires a great deal of work and expense and energy to furnish pasture when we are compelled to divide the herd into small lots.

Mr. Clark: I have an alfalfa pasture which gives me entire satisfaction, and I also have a fine spring, from which I have a pipe running to a tub for my calves to drink out of, and also from which I have a pipe running to a trough for my hogs; but what I want to know is, whether or not I should run that pipe up through the pen on the inside of the fence so that it makes a wallow for my hogs, or whether I should run it up on the outside of the fence. I know that hogs like to have a wallow to roll in in the summer time and during the hot weather, and I also know that a hog looks better when he is clean. Now, I would like to have some information on this subject.

Mr. Maguire: I have furnished a wallow for my hogs, but condemn it on account of its becoming stagnant. It makes a mud-hole, and I do not like a mud-hole. I would rather cool them with shade; they keep clean and, I believe, more healthy. You hardly ever see a man who lives on a running stream that has healthy hogs. It is where they have running water that the hog is diseased. I don't like a mud-hole and won't have it. I like it better to furnish them shade.

Mr. Cook: In regard to this matter, I will say: I used to think it necessary for a hog to have a wallow, but, in order to make something nice for them, I made a wooden bath. I cleaned it out every day or two. The year I used this, was the only year that I had hog cholera in my business. They were watered three times a day, but they would go to the vat. I quit the vat, and I like good shade and clean grounds, but no hog-wallow. They will drink from the wallow, and for that reason I would not have water on the ground if I can help it. They should have a fountain where they can drink from and plenty of good shade; this will do much better than a wallow to lie in.

Mr. Clark: I take notice that hogs do not like dirty places because they would wallow. I have come to the conclusion that hogs like clean things as well as anyone. This trough of mine is clean, and I never saw them drink out of the wallow while they had this trough.


Mr. Rippey: I have a running branch on my place and the hogs can go to it and drink whenever they wish to, and we have never had the hog cholera.

Mr. Coburn: My friend touched upon the matter of exercise for hogs; it was a popular idea, and I am sure that it has been so with me. I want to call attention to this fact, that the Utah Experiment Station has conducted an experiment, and, to my astonishment, they found that the mere matter of exercise for hogs has raised their money value greatly; that is to say, that in their four years experience the hogs running loose in pasture made 24 per cent greater gains than those confined in pens and having no grass. The gain was 19 per cent greater than on those confined in pens and having the grass carried to them. The average of four years showed like this: The gains per day on those in different lots of hogs that were without exercise was .9 of a pound, and the gain per day on those in pasture was 1.1 pounds per day; those which were shut up ate of corn per day 4.5 pounds; those at large 4.6 pounds per day. The feed required for a pound of gain was 5.12 with those confined in pens; those which had exercise, 4.3 pounds of feed. These certainly are wonderful suggestions as to the value of exercise to hogs grazing on pasture.


Mr. Thompson: I would like to call Mr. Coburn's attention to this, that if we raise a hog for pork purposes we cannot confine him, but if we raise a hog for breeding purposes we want a pen to put him in and not let him have too much exercise.

Mr. Patterson: I believe in not closing them up, whether they are to be fed for market pork or for breeding stock. By the time the pigs are 2 weeks old they should be allowed to follow their dam to pasture; they will make more pork and larger hogs. If we close them up, we will find that we will have hogs without constitutions. They must have shade, exercise and good water.

Mr. Cheney: I think that this is the key-note in the production of swine. I do not think that anything should be



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shut up except people who go to the penitentiary.

Mr. Jordan: I had some idea of putting in a crop of artichokes next spring, and I would like to get the opinion of some of the able stock breeders here. I have sometimes thought that the exercise that the hog gets in digging out the artichokes would not be beneficial to the hogs, but I do believe in plenty of exercise for the hog.

Mr. Updegraff: It is very natural for a hog to root when it comes to an artichoke, or a hog having a place to go and wallow. When it comes to a hog having the run of the farm and getting plenty of exercise, we have better hogs, if we allow them to run the way God Almighty intended them to.

Mr. Harrington: I do not object to a hog eating artichokes, but it was because I said his time was worth too much to dig them. I am not opposed to a hog running in the pasture in good grass, and even in running and traveling around the pasture. My experience has been that it is the weak hog that roots, and not the strong one. The idea of putting a hog out to dig artichokes and plow down in the ground half a foot, his time is worth too much to be put in in that way. I would rather feed him a little oats slop than to have him dig for artichokes. I do not believe the hog needs the artichoke as bad as he needs the oats. I raised them and abandoned them because I did not do any good with them. I have come to the conclusion that the hog was wasting his time in digging around for them, and I cannot recommend any one to raise artichokes; but put in alfalfa and clover and let the hogs run on that.

Mr. Maguire: I have a neighbor who has six or eight sections of land and who raises from 500 to 1,000 head of hogs a year. A year ago last fall he thought he would fatten a carload, and he put them in pens. Two months later he picked out a carload of the cullings and they weighed nine pounds more to the head than the seventy head picked out in the first place for fattening.

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Unique Hereford Demonstration.

A meeting of the prominent breeders of Hereford cattle, called by the executive committee of the American Hereford Cattle Breeders' Association, for the consideration of holding a Hereford show and sale, provided for at the last annual meeting of the association, convened at the Midland Hotel, Kansas City, Tuesday, February 14, 1899.

The association authorized the executive committee to go ahead with the show, and offer \$5,000 in cash premiums, but before doing so, the committee desired the advice of other members of the association. It was decided to hold the show the week commencing with October 23, the dates being October 23 to 28 inclusive. A comprehensive premium list devoting \$4,000 to the breeding classes, and \$1,000 for fat cattle, disposes of the entire \$5,000 appropriation for this purpose. The regular classification of the American Exhibitors' Association was adopted with an additional class for calves under 8 months; making two calf classes. The usual rule restricting the females in the young herd to animals bred by the exhibitor, was rescinded, it being the sense of the meeting that a larger exhibit could be drawn out, if the exhibitor were allowed to show in the young herd, purchased animals. Prizes were provided for groups of grade steers and heifer calves, and also for yearlings, with the intention of interesting breeders of grade cattle who use registered sires. There was a total absence of selfishness on the part of the breeders present, and a whole-souled determination was exhibited to do everything possible for the success of the show in the interest of the whole breed. The show and sale is essentially in the interest of the smaller breeders. A sale limited to 300 head of pure-bred cattle will be a feature of the show. Sixty head each day will be sold from Monday until Friday, inclusive; commencing at 10 a. m. A charge for cataloguing, advertising, auctioneering, etc., will be made on all cattle sold, equal to about one-half the usual expense of the leading breeders when advertising for their sales. The sellers will not need to bother themselves with any part of the details of the sale, outside of the proper preparation of their animals before arrival on the show grounds.

The set of committees to assist and advise with the executive committee was selected by President K. B. Armour: On sale, T. F. B. Sotham, Chillicothe, Mo., chairman; C. A. Stannard, Emporia, Kans.; Thos. Smith, Beecher, Ill. On the show, Thos. Clark, Beecher, Ill., chairman; Jas. A. Funkhouser, Plattsburg, Mo., and Jno. W. Sparks, Reno, Nev. On reception, Dr. Jas. E. Logan, Kansas City, Mo., chairman; Frank R. Hastings, Kansas City, Mo., and C. B. Smith, Fayette, Mo. On special premiums, Dr. Jas. E. Logan, Wm. Cummings, Norton Thayer, C. F. Holmes, and Frank S. Hastings, all of Kansas City.

It is expected that the officers and members of the association will cooperate with these committees in every way possible to further the success of the show and sale. The matter of judges to make awards at this show, was then considered, and in view of the fact that it was to be a show exclusively of Herefords, that will doubtless be made use of by more exhibitors of single animals than ever before gathered in America, it was deemed best to go outside of the Hereford breed for judges, that no exhibitor might consider that the leanings or prejudice of any Hereford breeder should have any influence in the awards. It was decided that only men of absolute integrity, bearing national reputations, should be nominated as a panel from which to select the jury. It also was decided that the committees should consist of three men. The following gentlemen were named as a list from which the judges will be taken: N. H. Gentry, Sedalia, Mo.; C. E. Leonard, Mt. Leonard, Mo.; Aaron Barber, Avon, N. Y.; W. A. Harris, Lin-

wood, Kans.; Wallace Estill, Estill, Mo.; W. A. McHenry, Dennison, Iowa; R. B. Pierce, Creston, Ill.; W. J. Tod, Maple Hill, Kans., and Wm. Cummings, Kansas City, Mo.

It is intended to name one or two more of the buyers representing the packing house interest who will work with Mr. Cummings and Mr. Tod on the fat cattle. It is believed that the committee in charge of special premiums will be able to raise in cash and valuable articles a list of special premiums equal to the cash prizes offered by the association. When it is considered that at the Illinois State Fair more money is offered for single breeds of cattle than at any other fair in the country, and that their offering for Herefords is \$750, the chances for showing Herefords alone for \$5,000 cash, to say nothing of the special premiums, is an opportunity never before equalled except at the World's Fair, Chicago. With the special premiums that will be offered more incentives for a large exhibit will never heretofore have been approached. The hearty interests of the promoters of this exhibition and sale, in the interests of the whole breed, and especially in the interests of the smaller breeders, is most commendable, and the enterprise is inaugurated in a spirit of unselfishness that cannot help make it a phenomenal success. Some very novel features will be introduced to interest the ladies and children in the show. An admission fee of 25 cents will be charged. A large amphitheater will be constructed and every provision will be made for the comfort of the patrons of the show.

The members of the American Hereford Cattle Breeders' Association will be furnished with badges entitling them to every privilege of the show, free. Commission firms and others have signified their intention of taking large blocks of admission tickets. A selection of cattle will be secured both for exhibition and sale that will attract every Hereford man in the United States, and present unequalled opportunity for buyers.

T. F. B. SOTHAM, Secretary.

Gossip About Stock.

The next offering of Sunny Slope Herefords will consist of 50 choice bulls and 50 females, and the sale will be held at Kansas City, on April 26, 1899. For detailed information address C. A. Stannard, Emporia, Kans.

The forthcoming Shorthorn sale, to be held at Kansas City, on April 27, 1899, by G. W. Glick & Son, Atchison, John McCoy, Sabetha, and W. A. Powell, Lee's Summit, Mo., is one of the most important sales of the season.

Walter Roswurm has recently located his fine herd of Poland-Chinas on a farm near Council Grove, Kans. His former address was Beman, Morris County, Kansas, and he wishes his friends now to address him at Council Grove, in same county. He reports his stock in excellent condition, with many fine animals for sale.

The forthcoming Annual Report by the combined breeders' associations will be a veritable live stock manual for Kansas, and will certainly prove of great value to our live stock interests. It will be printed soon by the Kansas Farmer, and be ready for distribution to the members of the Kansas Improved Stock Breeders' Association next month.

The attention of the beef-breeding public is again called to the three days' sale of registered Hereford cattle which will be held at Kansas City by Messrs. Sotham, Nave and Hornaday on Wednesday, Thursday and Friday, March 1, 2 and 3. The 150 head are as good animals, both in breeding and individuality, as have ever been offered in the public sale ring in this country. To those who have not received a copy of the three several sale catalogues there is yet time to write for one. In these catalogues complete details pertaining to the history of the herds and tabulated pedigrees of the sale animals is given. Consult the sale announcement elsewhere in this issue and govern yourselves accordingly.

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A RURAL COMEDY.

Things is never goin' right,
(Life is so contrary);
Thought I'd go that winter night
An' speak the word to Mary.

Never seen her look so sweet,
(Jest like any fairy!)
Kitten purrin' at her feet—
Me, six yards from Mary!

Told her that 'twuz like to snow—
All the weather showed it;
Looked as if we'd have a blow—
Simply said: "She knowed it!"

Talked o' this, an' talked o' that
Till my tongue got weary;
Made remarks about the cat,
But still kep' fur from Mary!

Old clock ticked an' ticked away,
(Wished her heart 'twould soften!)
Couldn't find the word to say,
Though I tried it often.

Time to go, an' leave them charms—
Since I couldn't win 'em!
Yawned, an' sorter stretched my arms,
An'—praise God—she wuz in 'em!

Don't these women know a sight?
Ain't they all contrary?
Didn't say the word that night,
An' yet I'll marry Mary!

—Frank L. Stanton, in Atlanta Constitution.

WHAT NOW AND WHERE NEXT?

By Mrs. Bina A. Otis, read before Shawnee County Horticultural Society, February 2, 1899.

Ever onward is the silent motto of all nature. Mankind is the highest organism of nature, and is subject to and should be in harmony with her laws. A retrospective view is necessary to understand the present, and an analysis of the present is essential to anticipate the future.

To understand "What Now and Where Next?" for our girls, we must take a short kaleidoscopic view of the past and present. A glimpse at the environments and character of Penelope, a daughter of the Greeks, shows how one can be bound by conditions and how strength of character will make one master of self and surroundings.

Her husband was forced into the army when their son was an infant, then for ten years was an exile and thought to be dead, enduring hardships that his companions could not overcome, while Penelope, the faithful wife, devoted mother, industrious and ever hopeful, superintended her household, directed the servants, reared and educated her son. Her beauty, accomplishments and wealth gave her many suitors, from whom she held aloof, unwilling to become the wife of another. To procrastinate, she began a web or cloth and told her admirers to cease urging her marriage until she had finished the mantle for a shroud for her hero. On this she worked during the day for three years, unraveling each night.

Our knowledge of the domestic life of the Greeks is gained largely from the poem "Odyssey," into which is woven the life of this heroic woman. At this time, in the very center of civilization, the woman was a slave to the Greek customs, regarded from a commercial standpoint, and considered useful only as servant to man. Her duties as a citizen were to bear strong, healthy children, not being permitted to rear a weak child. Confined to domestic life and shut so closely within her home that it was but little more than a prison-house, almost wholly isolated from the society of her own sex, she was usually married when from 15 to 20 years of age to some man who had purchased her, oftentimes to a stranger. Marriage being controlled by government, she had no voice in selecting a husband. The Greeks, with all their accomplishments, were unable to comprehend true womanhood. It is surprising that very many of them did not win for themselves the reputation won by the wife of Socrates.

Some years later, under the Romans, the sphere of womanhood was enlarged. Their dress was similar to that of men at first. With the increase of wealth it became more elaborate. One gauze-like fabric worn by them is mentioned by the poets, who call it "woven wind." Their large number of slaves enabled them to give much time to the care and adornment of the person. We read that sometimes four slaves had each separate duties in arranging the hair of their mistress. They admired the flaxen hair of the Germans and obtained false hair by robbing German captives. Vanity caused others to wash their hair in a solution prepared from chemicals and then submit to a bleaching in the sun. Would not a close student of mankind find a remnant of the Roman civilization in the women who are so simple as to enjoy pride in blonde hair?

Perhaps the jewels and dress of the Roman matrons was foolishly extravagant, but the manufacture of the cloth

and the fashioning of their garments was surely an art of high degree. Their chief amusements, being the circus and theater, were enjoyed equally by both sexes and both received the same debasing influence.

History tells us that "In the celebration of Trojan's triumph 11,000 beasts were killed and 10,000 gladiators engaged in human slaughter." The Roman matron, Cornelia, daughter of the elder Scipio, may well be considered one of the strong characters of the Roman women; the wife of Tiberius Grachus, the mother of twelve children, only three of whom lived to manhood. Being left a widow, the care of these devolved upon the mother. Cornelia was refined, self-possessed, and well educated for a woman of her day. She spoke of her sons as her jewels. Their glory was her glory. Their efforts in behalf of the plebeians in the contest with the Roman patricians were the natural outgrowth of her training. After her death her friends erected a monument to the memory of this devoted mother, the inscription on it being simply, "Cornelia, the mother of the Gracchii," which was exquisitely expressive of the aims of her life.

While it might be interesting and profitable to trace the evolution of woman from the beginning of the Christian era to the present time, we cannot linger in the past, but will pause a moment to consider the status of the daughters of the present century.

Among them we find one who was a devoted wife and loving mother. Some one has said that a mother-love that does not extend beyond her own offspring is not higher and nobler than that of the brute. Mrs. Stowe's mother-love was given freely to the African slaves. Her home for twenty years on the border of the slave territory gave her a knowledge of their wrongs and sufferings. Her heart was burdened because there were others who did not know their condition, so she determined to make plain to the people the inhumanity of the slave trade. This she did by writing "Uncle Tom's Cabin," the great work of her life, a book that has been published in twenty or more languages and gave its author an influence on our civilization that has not been exceeded by any other woman. This book was written when her family cares were the heaviest. We are told that she felt that she was inspired while writing it.

Lincoln Park, in Washington, D. C., is recognized as the colored people's park. In it we find a statue of Abraham Lincoln, with a fatherly look on his face, signing the emancipation proclamation. I have often felt that justice would have placed beside this statue one of Harriet Beecher Stowe, which should tax the skill of the sculptor in expressing the beaming mother-love for the downtrodden race.

The nineteenth century has been called woman's century. Surely she has opened the doors of many opportunities for herself. Very many have, each in her own way, demonstrated their ability to contribute their part in the development of humanity. Every effort for the elevation of woman has had an influence on the most degraded; every effort for a higher womanhood is bringing us nearer the ideal home; every failure of the more intelligent class of women to reach out to help the less fortunate is a sin of omission and produces a reaction, striking back with a force that, to a certain extent, closes the door to a higher freedom.

The training of the girls has been largely to prepare them for the social whirl, or for housewives—the slaves of domestic life—neglecting the necessity of woman's equality—the helpmeet and companion of man. From this sowing the present generation is reaping overflowing charitable and penal institutions.

The future is before us, like an open book, with pure white pages save the foreshadowing of the past. The question of training our girls for housekeeping is an important and vital one. The public schools now furnish an opportunity to secure the essential education. Girls, as well as boys, should be taught some line of industry for which they have a natural taste, by which they can earn a living and raise them above the degrading influence of dependence. Literary and industrial education are prime factors in successful home-making. Every girl should be in close touch with her mother, her companion, sharer of her joys and burdens, her father's pride, and a charming and sprightly associate of her brothers and sisters. She should be taught the necessity of purity of thought as well as of word, that the atmosphere with which each one is surrounded may be elevated and purified by their thoughts, taught to know herself by understanding her physical, intellectual, and moral nature, and, through self-analysis, prune carefully the imperfections of her nature and cultivate the higher and nobler qualities, and by this means ac-

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whose house is conspicuously clean, whose work worries her least, whose leisure time is greatest, how she manages. The chances are ten to one she will answer:

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quire a self-reliant, unassuming, strong character, qualified to make the ideal home of the future. A friend once said that she thought boys should marry superior girls, who would help them to develop the nobler manhood. You might as well attempt to increase the value of a grafted well-cultivated, carefully-pruned fruit tree by planting by its side one that is unhealthy, ill-shaped and dwarfed. The girl who wishes to make an ideal home will not marry a crooked stick; she will not place decaying fruit with the perfect, expecting that, by some unknown means, the poor fruit will become like its companion. Can a wife make a successful voyage on the ocean of life with a millstone tied to her in the form of a man? Can it give husbands any pleasure to feel that they are dragging down some noble woman? Should parents consent to the marriage of their daughters to men who are polluted with tobacco and strong drink and general lack of culture? Will our daughters feel that they have been properly trained if we fail to teach them so that they will not have to blushing apologize to the next generation for their choice of a husband? Is it a feeling of utmost pride that you become conscious that your son is not equal to the woman he calls wife? Nay, ten thousand nays. Teach your girl to demand in her life partner a cultured helper, one who has been equally with her trained in home-making.

Where is this home for the ideal home-makers? Some one has truthfully said that "Home is where the heart is, where its loved ones dwell." The home of Penelope, the Greek maiden, was with her hero husband. The home of Cornelia, the Roman matron, was with her jewels, the Gracchii. Mrs. Stowe's mother-heart reached beyond her individual home. Miss Anthony was never a mother but ever a mother to all women. Mother Bickerdike's heart was with the soldiers, and she will have a home in their hearts as long as there lives a soldier of the Civil War. The official position of wife and mother are the highest on earth; no other offices can present so many sacred duties.

The ideal home-maker will sooner or later recognize the world as her home, and have a love for humanity, and will ever strive to develop a higher ideal for heart and soul.

Written for Kansas Farmer.

Misplaced Confidences.

In the gentlemen's waiting-room of a railroad depot on the line of the now great Santa Fe, during the winter of 1883-4, awaiting the arrival of a west-bound train, I sat in a corner with an old book, trying to read, or at least to keep awake. It was after midnight, and the depot master had said that our train would not be due until half-past 2 a. m.

A young man of good appearance entered the room, walked up to the lunch counter, wrote on a card, "Coffee, pie and sandwich," then handed the card to a waiter and took a chair at the table. "That boy is deaf and dumb," said a little newsboy near. "Oh, no," said another. "He is a fraud. Don't ye think so, stranger," he inquired of me? "Perhaps, and perhaps not," said I. Then I watched the youth for a minute. I liked the young man's appearance, for he was neatly clad, and bore upon his countenance an intellectual look. He seemed to have been well brought up, polite in manner, with education such as the world gives one who is select of his company and travels with first-class tickets.

After his frugal repast, he summoned, by beckoning signs, a group of street-car drivers and hackmen, and again commenced writing, this time upon slips of

paper, which he passed around for the men to read. Soon I noticed one taking up a collection. There were a good many men in the room at the time who liberally contributed to the collection for the deaf and dumb traveler. However, I kept my seat, thinking, perhaps, as the little newsboy had said, "He is a fraud," for although he might be a mute, he should be at least self-supporting. Presently one of the drivers came to me and said, "Come, stranger, chip in a mite for the lad. The boys are all giving a little of their silver and we can raise a stake right here. He is down on his luck and wants to go home. That drunken yap at the door is the only man yet who has refused to chip in." "I will see the boy, and if he acts right I will risk a quarter," then I went to the mute and wrote: "Please, sir, introduce yourself and tell why you are a subject of charity." He read the inscription, and wrote quickly: "My name is John W. Minor. I am an orphan; been in Kansas City learning cigar-maker's trade. Was discharged when trade was dull. Have a sister at Santa Fe, keeps millinery store. Been sending her all my earnings. That is my home and I want to get there if possible without dead-beating my way."

After reading his story, I wrote: "Good speed," and handed him a quarter of a dollar, for which he politely thanked me by his looks. Half an hour later I wrote that I would like to hire him to canvass for books, and handed him a fine book to examine, which he took, turning first to the title page, then over leaf by leaf in good order. I was a general agent for a book subscription house and could afford him a fair commission. His answer was that he wanted to go home, but would consider my proposition. I gave him my card and saw him no more until one day about a week later, when he came to me at my boarding-house, and wrote that he would like to work for me about a month but had no money. I engaged him and assigned him certain territory to canvass in a mining town for a book entitled "Wild Life on the Plains," then went with him to the town on the evening train, engaged board and lodging for him at a hotel, gave him, in writing, all instructions regarding our business, a full sample copy of the book, worth \$3, besides a good prospectus book and a few coins of silver. Thus well provided for, I left my new deaf and dumb book agent and returned to other territory, where I had several days' work delivering books which I had sold previously. This was on Thursday of the week, and I returned on the following Saturday to see how my good fellow prospered, and was highly pleased with his success and business style. He had taken subscriptions for seven books in two days. People boarding at the hotel told me that he was a jolly fellow and was well liked in town. I left him again, returning about the middle of the next week, and to my surprise learned that John W. Minor had decamped with money and sundry valuables belonging to boarders at the hotel. He had worked his way into their confidence and trust, and has been apparently honest; then, after stealing all he could find of value and convenient to carry, packed a valise and left between two days. So goes the world.

"Charity begins at home," and while we say that it should not end there, still, it behooves us to be careful that our confidence be not misplaced, for while, with charitable purpose, we aid and try to encourage the poor and unfortunate, we may be, for aught we know, encouraging beggars and supporting thieves.

Wakarusa, Kans. JAY VEE.

We can save you money, if you want most any paper or magazine, in connection with Kansas Farmer. Write for special club list.

The Young Folks.

FOREVER.

Two little streamlets leapt and flowed
And sung their songs together;
They felt alike the summer rays,
And bore the stormy weather;
The self-same blossoms decked them both
In colors rich and rare,
And in each stream the song birds wooed
Their bright reflections there.
And on, and on, and on they danced,
Each leaping toward the river,
And then they met to kiss and part
Forever and forever.

Two human lives, two kindred hearts,
By destiny's decree,
Met in the spring of life, to learn
Its deepest mystery.
They dreamed their morning dreams of
hope.

Through fair, unclouded weather;
They opened love's bewitching book,
And read it through together;
They saw in one another's eyes
A deep unspoken bliss,
And from each other's lips they took
Love's ever-ready kiss.

And then the fate that crushes all
The sweetest pleasures here,
Turned hope's glad music to a sigh,
Its glory to a tear
It stepped between them—ah! it mocked
The love it could not kill;
It bade them in its fury live,
And love and suffer still.
They tried with outstretched hands to span
Fate's wide unyielding "Never."
The voice of destiny replied:
"Forever and forever."

Mine is no wild imagined theme,
No idle fancy flight,
It lives through daylight's busy hours
And haunts the silent night.
The wall of sorrow fills the air,
It rests, it ceases never;
It wrings some soul, it breaks some heart
Forever and forever.
—Chamber's Journal.

Boston Millionaires Tell What They Would Do If Broke.

If you were to find yourself suddenly without a dollar to your name, what would be your course to make a living for yourself and those who might be dependent upon you?

A Herald reporter spent a day personally querying ten of Boston's millionaires on the above question. Appended are their answers:

Aloch Wentworth, who made his millions in the marble business, and who was, seventy-five years ago, a barefoot boy up in Dover, N. H.—"It's rather a tough proposition to place before a man 86 years old. Allow me to be 21 years old again, and in the predicament you mention, and I'll tell you what I would do. I'd use every effort to make a beginning in some mercantile or mechanical business. I think too many young men seek the professions nowadays, and a successful professional man never secures the independence that a successful business man secures. Take a successful minister who has acquired a salary of \$8,000 per year. He is obliged to preach to suit his swell congregation or get out. Therefore, he never acquires the independence of a successful business man, who may, when he acquires a competence, travel and see the world.

"Were I to start over again I would use energy, honesty, system and economy. I would educate my hands to work with my head. I would not be a Micawber, waiting for something to turn up, but I would be, as I have been in the past, a good paymaster—never putting off the payment of a bill that could be done as well without delay. I would find someone who knew more than I did on certain matters that I was interested in, and use his ideas. As soon as I would be enabled to do so, I would travel much and keep the mind clear and unprejudiced. If I needed anything done, I would personally attend to it if possible."

Oliver Ames—"I am sure I couldn't tell what I would do. Try to hunt up a little capital some way, and go into some business that required but small investment of money."

Francis H. Peabody, of Kidder, Peabody & Co.—"I think my course in such a case would be decided greatly by accident. Accident shapes our careers to a large extent. When I was 14 years old, I had arranged to learn the carpentering trade, but just at that time there came a vacancy in a Springfield bank, and thus I got into the banking business."

Henry L. Higginson of Lee, Higginson & Co., bankers—"I would go to cutting ice. Figuratively? Any old way."

R. H. White—"I'd go to work at the first thing I could get to do. It wouldn't make any odds what the work was, and afterward, as soon as I had secured some sort of basis, I would enter the field that I was best adapted to."

Charles Francis Adams—"Gracious! At my age. Why, I wouldn't be in it. Scrape a living some way, I suppose, either on my relatives or from municipal charity. At my age a man would be of comparatively little use in beginning life all over again. Even President Elliot, of

Harvard University, with all his ability, at his age, wouldn't be in it as a teacher in competition with young men. After a man gets past 50, he isn't in it in the game of hustle."

John Shepard, of Shepard & Norwell—"I would get right to work as soon as possible in the dry goods business."

Benjamin P. Cheney—"Instead of waiting for something to turn up, I would endeavor to get a position of almost any kind, and, having found work, would try to force myself to the front, and be at least as good a man in my line as any one else. Having secured a sort of basis, as it were, I would endeavor to find out what particular kind of work I was fitted for, and, at the first opportunity offered, would take that work up. By concentration and economy, I would endeavor to push myself to the front in my business. I would always keep in mind two things, attention to business and economy. A man without much money can have almost as much practical capital if he has the personality, as one with money. This personality may be achieved partly from the unique and able conduct of one's business. In such method is friendly capital often allied. I would always endeavor to be looking ahead for possibilities."

Henry M. Whitney—"I would take the first job offered."—Boston Herald.

Experiences of Car Conductors.

The conductors of street cars say that the foolish questions which people ask of them do not make them laugh any more—they simply make them sad. They are sorry that people can be so thoughtless and illogical.

"Just to think," said one trolley car conductor to the writer, "that the experience that I'm going to tell you about is quite common, and not a single instance. You have a crowded car, and there is an almost empty one not more than two rods behind you. A lady at a street corner hails you, and you come to a stop.

"Do you go to the Park street station?" she asks.

"Yes ma'am." She starts to climb on.

"But, ma'am, you say, 'this car is crowded, and the one just behind is going to Park street, too, and it is almost empty.'"

"Hum," says the lady, scornfully, as she climbs on, but it doesn't come from the same place!"

The conductor on a Boston car was the other day quite at a loss what to say to a lady who said to him, "I'm going to a place that they tell me is about five minutes walk from Massachusetts avenue, and I want you to tell me where I had better get off."

As Massachusetts avenue is several miles long, the conductor felt compelled to ask for further information, but no more could he get from his questioner.

When people travel on street cars they should not leave their common sense behind them.—Youth's Companion.

A Sierra Bear Story.

Once I spent a night with two Portuguese shepherds, who were greatly troubled with bears, from two to four and five visiting them nearly every night. One evening before sundown a bear, followed by two cubs, came for an early supper, as the flock was being slowly driven towards camp. Joe, the elder of the shepherds, warned by many experiences, promptly climbed a tall tamarack pine and left the freebooters to help themselves, while Antone, calling him a coward and declaring he was not going to let bears eat up his sheep before his face, set the dogs on them and rushed toward them with a great noise and a stick. The frightened cubs ran up a tree and the mother ran to meet the shepherd and the dogs. Antone stood astonished for a moment, eyeing the oncoming bear, then fled faster than Joe had, closely pursued. He scrambled to the roof of their little cabin, the only refuge quickly available, and fortunately the bear, anxious about her young, did not climb after him, only held him in mortal terror a few minutes, glaring and threatening, then hastened back to her cubs, called them down, went to the frightened, huddled flock, killed a sheep and feasted in peace. As soon as the bear left him, fearing she would return, Antone called piteously for cautious Joe to show him a good, safe tree, up which he climbed like a sailor climbing a mast, and held on as long as he could with legs crossed, the slim pine recommended by Joe being nearly branchless. "So you, too, are a bear coward, as well as Joe," I said, after hearing the story. "Oh, I tell you," he said with great solemnity. "Bear face close by look awful; she just as soon eat me as not. She do so as eef all my sheeps b'long every one to her own self. I run to bear of this kind no more. I take tree every time."—Atlantic Monthly.



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Persian Ideas.

An American traveler in Persia learned that the common soldiers of that country supposed that the English practice of firing a salute at the burial of a soldier had for its object the driving away of devils. Other mistaken impressions no less absurd he reports in his "Persian Life and Customs."

A village soldier asked me if I knew of dog-worshippers. I told him I had heard of fire-worshippers, cow-worshippers, and the like, but not of dog-worshippers. He said he had seen some in Teheran. Some foreigners there had fed them, fondled them in their laps and taken them riding in their carriages. Were they not dog-worshippers?

An English sea captain, whose ship touched at Bushire, took a horseback ride through the streets of the city, but made so poor a display of horsemanship as to astonish and amuse the people. The next day a vender of fruits came on board the ship and said to the captain:

"I have made such an explanation as to free you from all reproach. There is no one who does not think that you are an expert rider as becomes one of a nation of horsemen."

"And how did you do that?" asked the captain.

"I told them you were drunk."

The Souvenir Fiend.

When the treaty of peace which ended the war between America and Spain was signed on the evening of December 10, the solemnity of the circumstances did not prevent a display of the American craze for souvenirs, and the interpreter of the American commission, Arthur Ferguson, approached Senor Montero Rios, and with due ceremony propounded this significant question:

"Have you any wish, senor, to preserve the pen with which you will sign that document?" pointing to the important papers bearing the seals decorated with the tri-colors of France.

"Not the slightest," answered the Spanish don, with a court bow and an ill concealed sneer.

It was a small thing, a trifle of history, that some of the Americans had provided themselves with splendid pens looking forward with true Yankee enterprise to the time in the years of their posterity when the "trifle" would be worth no insignificant sum as a souvenir of value, as a factor in the closing scenes in the epilogue of the Spanish-American war. The Spaniards, who had no fortunate memories connected with the event, were satisfied to avail themselves of the scattered quill pens provided for their fateful signatures, and found them all-sufficient for the bitter necessity. To throw them aside as soon as used was their dominant thought, as if they had been futile weapons of self-destruction.

The great mahogany table on which the peace contract was signed and around which the ten arbiters of the destinies of two nations were grouped should have been secured for a national museum, but there is scarcely a doubt that enough of it was—well, let us say abstracted—to make a few souvenirs, if the American souvenir hunter present did his duty. If, however, the table was left intact from courtesy to the French hosts of the commission, or an espionage that permitted no desecration, we can imagine the offers that will be made to put it on exhibition from Maine to Georgia after it shall have made its debut at the Paris exposition in 1900.—Chicago Times-Herald.

Toreador Earned \$60,000 a Year.

A successful toreador published his receipts a short time ago. During the corrida season he took part in 65 fights and

killed 133 bulls. His net profit was \$60,000, and the only injuries he sustained were a bruise on his foot and a rather bad wound in the leg.

The risks are, of course, great, but the men are so extraordinarily agile that grave accidents really seldom occur. Sometimes one will be badly gored, but a week or two of hospital will generally set him on his legs again.

These men, often uneducated and proceeding from the lower classes, are courted and feared, and even the larger newspapers of Madrid are careful to give nothing but praise to them, for fear of incurring their enmity.—Sketch.

Learn to say "No" when a dealer offers you something "just as good" in place of Hood's Sarsaparilla. There can be no substitute for America's Greatest Medicine.

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And now comes a prophet of evil in old England and predicts a great famine in 1901. The distress predicted is illustrated by another writer, by reproducing records of relief meetings held one hundred years ago.

The Omaha Exposition was so successful last year that it has been determined to make another exposition on the same grounds and in the same buildings this year, calling it the Greater American Exposition of 1899. The dominant note will be comprehensive exhibits, showing the range of products, the variety of manufactures, the extent of possible resources and status of existing social conditions—in short, all things calculated to illustrate the present state of civilization upon the islands of the sea recently acquired by the United States. Many States of the Union will also participate.

The United States Department of Agriculture has notified Secretary Coburn that the department is now in a position to expose those seed dealers who are selling seed injurious to the agricultural interests of the country, especially those who are conducting a systematically fraudulent trade. One or more correspondents will be secured in this State, reliable men, who will make purchases of seed for the Department at Government expense and assist in discovering and exposing any seed dealers who may be engaged in such business here. The botanist of the Agricultural Department will be glad, also, to secure the names of any seedsmen who are known to be conducting a fraudulent business with our people, or are popularly supposed to be doing so.

We begin, this week, the publication of a series of papers on "Plant Breeding," by Geo. L. Clothier, now at Cornell University, Ithaca, N. Y. Mr. Clothier is on leave of absence from his position as assistant in botany at Kansas State Agricultural College. At the home institution he distinguished himself for ability as a practical plant breeder. His labors have been productive of the fine start which this work has received at Manhattan. After he shall have availed of the advantages of the advanced instruction given at Cornell, he will be ready to return to the work in Kansas with no abatement of energy and with improved ability. His contributions to the columns of the *Kansas Farmer* are always read with interest. The systematic treatment of this great subject which is this week commenced will be found a valuable foundation on which the reader may base his investigations of this important and fascinating subject.

KANSAS AND MISSOURI SHORTHORN BREEDERS.

The Shorthorn breeders from the two States met in annual session at the Midland Hotel and the Live Stock Exchange Hall, at Kansas City, on February 15 and 16, 1899. It was the greatest convention of interstate breeders ever held in the West. There were over one hundred breeders from each State. The addresses, papers, and discussions presented were of a high order of excellence. There was not the least jar or clash between the breeders of Missouri and the breeders of Kansas. It was an important convention that will result in great good to the Short-

horn breeding fraternity. Everyone was enthusiastic and confident.

Strong resolutions were adopted, urging the legislatures of Missouri and Kansas to provide for representative State fairs. Col. J. F. True, of Newman, and V. R. Ellis, of Gardner, were selected as a committee to work with the Kansas legislature in behalf of a State fair.

Officers were elected as follows: President, N. H. Gentry, Sedalia, Mo.; first vice president, Geo. W. Glick, Atchison, Kans.; second vice president, B. O. Cowan, New Point, Mo.; secretary, W. P. Brush, Station "A," Kansas City, Mo.; treasurer, Jno. R. Tomson, Topeka, Kans.; executive committee—N. H. Gentry, B. O. Cowan, Geo. W. Glick, Jno. R. Tomson, W. P. Brush, secretary.

Selections from the able papers read will appear in future numbers of the *Kansas Farmer*.

EXPORTS VERSUS IMPORTS.

In the United States nearly every statistician has for months busied himself in congratulating people on the enormous excess of exports over imports. For 1898 the ratio was about as 2 to 1. So far this year this relation is pretty well maintained. In England nearly the reverse ratio prevails and that country imports far more of the products of labor than it exports. Discussing the English situation, the *London Daily Financial Times* says:

"The phenomenon presented by the constantly-increasing excess of the imports of this country over its exports has got on the nerves of many people, and has given rise of late to a great deal of controversy. Confronted by the fact that our imports of last year exceeded the exports by the huge total of 177,000,000 sterling, the pessimists shake their heads gloomily, talk about living on our capital and predict the approaching bankruptcy and ruin of the country. It was with a view to setting these alarms at rest that Sir Robert Giffen delivered a lecture on Tuesday evening before Royal Statistical Society, the subject being our excess of imports. Any fair-minded man not biased by protectionist or bi-metallic theories will probably admit after a careful perusal of Sir Robert's address that he has gone a long way towards accomplishing the object he had in view. To begin with, the adverse balance of trade is no new thing in this country. It has been going at least since 1854. The average excess of imports for the three years 1854-56 was about 37,000,000 sterling, which increased to an average of 120,000,000 for the three years 1878-80, to 140,000,000 for the three years 1893-95 and to about 160,000,000 for the past three years. At a very low computation, the excess of imports during the past forty-five years has been about four thousand million sterling, and we ought by this time to be rapidly approaching bankruptcy. Instead of that, we find ourselves, marvelously to relate, far more wealthy by every ordinary test of wealth than we were half a century ago.

OTHER SOURCES OF ENGLISH INCOME.

"Evidently there is a fallacy somewhere, and Sir Robert Giffen shows us where it lies. In the first place, the Board of Trade returns cannot be accepted as a national balance-sheet. They are nothing of the kind. They are not even an absolutely accurate guide to the values of our imports and exports, since the former are valued at the place of arrival and the latter at the place of shipment; the result being that the import returns are swollen by various charges which are not included in those of exports. Apart from exports, our other sources of income are not shown in the returns at all. Yet these revenues are very large, as may be judged from the following estimates by Sir Robert, which are probably under-estimates, though exact data are not obtainable: Earnings of our ships, 70,000,000 pounds; profits on commission business, 18,000,000; interest and profits on investments abroad, 90,000,000. Even if this were all, there would still be enough to cover the exceptionally heavy adverse balance of last year and to leave a million or so over. But there are other sources of revenue of a less obvious character, which still must amount annually to a substantial sum. It is, of course, true that the excess of imports is increasing, but, taking an average of years, only from about 17 to 19 per cent since 1880. On the other hand, our wealth has also increased, so that we are better able to pay for the excess. It is clear that the imports of the nation are but the aggregated imports of the individuals who compose it, and if the nation is living beyond its income, then so are the average persons who make up that nation. The returns of the savings banks, of the income-tax and other tests of national prosperity are sufficient to utterly disprove any such theory. Moreover, living on capital has a tendency to cure itself, and would soon show its ef-

fects in a diminution of imports. From many points of view, indeed, a large advance in imports is evidence of national prosperity, especially as in the case of Great Britain those imports, through the operation of our exchange and banking systems, are virtually paid for before they are shipped over here.

ENGLISH EXPORTS DO NOT INCREASE.

"In dealing with the alleged stationary character of our exports, the lecturer pointed out that they have always been increasing if comparisons be made over a long period. This is no doubt true, but it is also true that the rate of increase has for some time been diminishing, while during the last seventeen years at least no progress has been made. Last year, for example, the exports of British produce amounted to 233,000,000 pounds; in 1896 the total was 240,000,000, in 1894 216,000,000, in 1892 227,000,000, in 1890 263,000,000, and in 1888 234,000,000. Wide fluctuations, it will be observed, but no progression, and we are practically where we were ten years ago. Even if we take the comparison back to the early eighties we fare no better. Our exports for 1882 totalled 241,000,000 and for 1881 234,000,000. The fall in prices accounts no doubt to some extent for these disappointing results. But, apart from that question, and also from that of the competition of foreign countries, there is another and a deeper reason for the sluggishness of our exports. This is to be found in the fact that we are a great creditor nation and are every year becoming a greater. It is calculated that the amount of our capital invested abroad is about 1,500,000,000 pounds and that it is increasing at the average rate of 56,000,000 a year. Evidently this renders it less necessary for us to pay for our imports by exports, for it is the debtor countries which are forced to export largely. We do not manufacture as a pastime nor for the mere sake of occupation, but to make a profit and pay our way. The stimulus to manufacture for export is necessarily weakened by the increase in our revenues from abroad. As Sir Robert Giffen puts it, 'the tendency of the permanent condition of our trade—namely, that we receive or are entitled to receive large interest from foreign nations—is a condition likely to make our exports less than they would otherwise be, because we receive so much from foreign countries without having to give any commercial equivalent.'

INCREASE IN POPULATION.

"There is, of course, the increase in the population to be considered, but that cuts both ways, for it has resulted in a great expansion of the home market, which gives additional employment to our manufacturers. This circumstance has also weight in considering the accusations of supineness and neglect to cultivate the export trade which are so often brought against our manufacturers by Consuls abroad. 'May not the explanation of many of these complaints,' asks Sir Robert, 'then, be in part that as our trade cannot develop equally in all directions our merchants and manufacturers have let slip the trade in certain directions where they could not maintain the rates of wages and profit which they were earning in other directions?' We have no doubt that is to some extent the case, for the manufacturer who has a sufficient market at his own doors need not hanker greatly after customers abroad.

"The productive power of the nation is not to be gauged by the fluctuations in exports alone, but is even more to be tested by its capacity to provide for home requirements. True, our imports of manufactured goods from abroad have increased, and last year reached the big total of 87,000,000, but even this figure is not excessive considering the great enlargement of the home market. It is estimated that the total value of the textiles produced annually in this country is about £175,000,000, and the shipments of this our chief articles of foreign trade average about £95,000,000. In other industries the proportion of exports is, however, greatly less. For example, of 8,659,000 tons of pig iron produced in 1896 only 1,060,000 tons were exported, and of 195,000,000 tons of coal raised only 34,000,000 were exported. Roughly speaking, it is probable that the value of the home trade is three or four times as great as that of the foreign trade. These considerations, while they to a great extent explain and even console us for the non-expansion of our exports, should not prevent us from cultivating our outward commerce by every means in our power, and, fortunately, there is hope that the increased attention devoted to the subject, combined with some improvement in the purchasing power of foreign countries, will ere long give it a fresh impetus. We may, as some authorities allege, be drifting towards a time when the nation will consist chiefly of rentiers living on incomes derived from abroad and of clerks doing the office work of the

world. But that is too dependent a position to be altogether comfortable, and is not a millennium we need desire to hasten."

STATE AID TO AGRICULTURAL EDUCATION AND EXPERIMENTATION.

Kansas farmers market their products in competition with the products of the farmers of all other States. They have better natural advantages than the farmers in most of the other States, but our neighbors are making up what they lack in natural advantages by providing thorough training in agricultural lines. New York, for example, pays special attention in her dairy school to cheese-making, with the result that New York dairymen pay freight on Kansas grains, feed these grains in a cold climate with forage raised by the help of commercial fertilizers, and manufacture the milk into cheese, while Kansas buys hundreds of carloads of this expensively produced cheese, paying the return freight; and all because her cheese-makers are not educated. The few Kansas cheese-makers who do know how to make cheese produce an article equal to the best quality produced in New York; and our short grass is particularly favorable to the production of fine cheese. This is only one of the many instances in which Kansas farmers lose through lack of agricultural education.

The following amounts have been expended for dairy buildings in the States named:

New York	\$50,000
Wisconsin	40,000
Minnesota	30,000
Kansas	Nothing.

Farmers' institutes are among the most effective means of helping farmers and are provided for annually as follows:

New York	\$15,000
Wisconsin	12,000
Minnesota	13,000
Kansas	Nothing.

The following amounts have been spent in the States named for buildings for instruction in agriculture, horticulture and veterinary science:

New York	\$257,500
Ohio	236,000
Minnesota	146,700
Wisconsin	123,000
Kansas	15,840

Instructors in agriculture, horticulture and veterinary science are provided as follows:

New York, full professors 3, half time 9.	
Wisconsin, full professors 5, half time 24.	
Iowa, full professors 5, half time 11.	
Ohio, full professors 5, half time 9.	
Minnesota, full professors 5, half time 6.	
Kansas, one professor one-half time, one two-fifths time, one three-fifths time.	

Annual State appropriations for experiments in addition to the amount given by United States Government:

New York	\$83,900
Louisiana	18,000
California	16,137
New Jersey	15,000
Connecticut	14,300
Ohio	13,950
Alabama	12,238
Massachusetts	10,000
Minnesota	10,000
North Carolina	10,000
Wisconsin	10,000
Kansas	Nothing.

TUBERCULOSIS IN ENGLAND.

The question of combating the deleterious effects of bovine tuberculosis upon human beings is reaching an interesting stage in some parts of England. It is to be expected that the war against tuberculous meats and milk will presently become acute in this country also. The methods suggested or adopted on the other side are, therefore, interesting here, and they may serve us as a guide, or as a warning against mistakes. An English Agricultural paper says:

"Owing to the Grimsby butchers having sustained serious loss through buying cattle affected by tuberculosis, their association has decided not to purchase any cattle offered for sale in the Grimsby cattle market, unless the animals are guaranteed by the vendors. Monday last being the date upon which this resolution came into operation and also Grimsby cattle market day, a large meeting of Lincolnshire farmers and others interested was held at the Ship Hotel, under the presidency of Mr. Henry Dudding. After some discussion, Mr. Macaulay moved that for two months the farmers should pay 1s. per head of cattle sold at Grimsby and the butcher buyer also pay 1s.; that the money be banked in the names of a farmer, a butcher, and an auctioneer, and that from this fund full compensation be paid when a beast was diseased. Mr. Denniss seconded the resolution, which was carried unanimously. It was also decided to petition the Government to have tuberculosis scheduled under the Animal Disease Act, and to allow full compensation for all beasts seized."

Dr. Bull's Cough Syrup helps consumptives and cures incipient consumption; it loosens the phlegm and heals. It is without doubt the best cough medicine. Price 25 cents.

Trimming Hedges Along Highways.

In response to inquiries as to the provisions of the law governing this subject, we print it in full. It is found on page 345 of Vol. II of the General Statutes of Kansas, and is as follows:

Section 47. Owners of real estate in any county in the State of Kansas shall keep all hedge fences along the public highway cut and trimmed down to not over five feet high, except trees not less than 16 feet apart, and hedges necessary as a protection to orchards, vineyards and feed lots, said feed lots not to extend more than forty rods. All brush cut from said hedges shall be cleaned up and removed or burned.

Sec. 48. All owners of real estate shall cut the weeds in the public highway along said real estate before they go to seed.

Sec. 49. In any county where the provisions of this act shall be adopted any owner of real estate falling to comply with its provisions, it shall be the duty of the road overseer in the district in which said real estate is located, to give thirty days notice to the owner of said real estate or his or her duly authorized agent, and upon his or her failing to comply with this act the said road overseer shall cut or cause to be cut said hedge not more than 5 feet high, as provided in this act; and the cost of cutting said hedge shall be reported to the county clerk of said county, and the same entered on the tax-roll against said real estate and collected as other taxes of the county are collected, and paid over to the treasurer of the proper township.

Sec. 50. Upon a petition being presented to the county commissioners of any county, signed by a two-thirds majority of all the members of township boards in said county, they shall by proclamation call an election to be held at a general election for township and county officers, and shall submit to the electors the question to adopt or reject the law for cutting hedges, and upon the ballots shall be written or printed, "For the hedge law," "Against the hedge law," under the provisions of the general election law; and the judges of election shall count the ballots cast for and against the "hedge and weed law," and make due returns of the same to the county commissioners as other returns are required by law to be made. Said commissioners shall meet within ten days and with the clerk of the county shall proceed to count said votes (canvass said returns) and declare the results in a proclamation to be published two weeks in some newspaper in general circulation in the county in which such proclamation is made. If a majority of the votes are for such law, they shall declare said law to be in full force and effect, and shall state the day on which the same shall take effect, not longer than two weeks from the date of the election; and from and after such date the provisions of this act shall be in full force and effect. All laws in conflict with the provisions of this act are hereby repealed.

Sec. 51. Nothing in this act shall be construed as to extend its provisions to any county until after the election provided for in the preceding section.

Sec. 52. Whenever any county shall fail to cast a majority of its votes for the "hedge law" the county commissioners may annually thereafter submit the same question to the electors of their respective counties, in the same manner as provided in section 4 of this act (section 50 of this chapter), and declare the results as herein provided.

Publishers' Paragraphs.

T. Lee Adams, 417 Walnut St., Kansas City, invites Kansas Farmer readers to carefully notice his advertisement this week and then write him for information and prices. His house is one of the oldest seed and garden tool establishments in Kansas City and he is known as a substantial and reliable business man.

TREES AND PLANTS.—Every description of desirable fruit and ornamental trees, shrubs, roses, vines, small fruits, hedge plants, greenhouse and bedding plants are quoted in the free priced catalogue sent to all interested, by the old established Phoenix Nursery Co., 180 N. Park St., Bloomington, Ill., whose advertisement appears elsewhere in this issue.

The Chicago Housewrecking Co., of West Thirty-fifth and Iron streets, Chicago, desire to send their illustrated catalogue to all the farmers of the West. They advertise large stocks of all kinds of merchandise at sheriffs' sales, and from bankrupt stores, all of which they claim can be sent at retail to any part of the country at prices much lower than local merchants would charge for goods of equal grade.

The Free Land of Canada.—Mr. Will J. White, Inspector of United States Agencies for the Government of Canada, writes us that their offer of free 160-acre homesteads in the Canadian West to set-

tlers has brought thousands of inquiries and that he is assured of the largest immigration ever known to the grain and stock lands of Western Canada. The first immigration party of the season in large numbers was composed of two thousand settlers from Europe, who are now in the Canadian West locating free homesteads.

CROPS OF SMALL FRUIT.—One of our regular horticultural advertisers is R. M. Kellogg, Three Rivers, Mich., a prominent grower of that State, also president of the West Michigan Horticultural Society. He is notable for the production of extra large crops of fancy fruit per acre. Write and get his book, free, about great crops of small fruit and how to grow them. See his advertisement in another place in this paper.

A NEW POTATO-PLANTER.—This week's Farmer carries the advertisement of a new sweet potato planter invented by Mr. Kuehne, of Oakland, Kans. Before planting, the land is thrown into ridges, same as for listing corn, and the machine, which is on runners, follows in the trenches, being drawn by two horses. Holes are punched in the ridge by spikes on a revolving hub, 18 inches apart. From 1,500 to 2,000 plants are carried in boxes and are handled by a man and boy, who sit facing, and deposit them in the holes, the dirt being pressed down by a roller in the rear. Four acres can be set in plants daily. The V-shaped point smooths off the ridge and throws all trash aside. Mr. Kuehne says corn stubble land can be planted without raking. Government experiments have demonstrated that more sweet potatoes can be raised where the plants are set at 18 inches than otherwise.

One of the finest business publications recently issued is N. W. Ayer & Son's "American Newspaper Annual," containing a catalogue of American newspapers, which is a carefully prepared list of newspapers and periodicals published in the United States, Territories and Dominion of Canada, with valuable information regarding their circulation, issue, date of establishment, political or other distinctive features, names of editors and publishers, and street addresses in cities of 50,000 inhabitants and upward, together with the population of the counties and places in which the papers are published. It also contains a list of newspapers and periodicals published in Hawaii, Porto Rico, Cuba and the West India Islands, compiled from the latest obtainable information. It gives a description of every place in the United States and Canada in which a newspaper is published, including railroad, telegraph, express and banking facilities; also the vote of States and counties at the presidential election of 1896.

WEIGHED IN THE BALANCE.—Our friends and patrons, the Reliable Incubator and Brooder Company, of Quincy, Ill., are rejoicing over a recent victory, and take this means of apprizing their many friends and patrons of the fact. At the recent poultry, pigeon and pet stock show given under the auspices of the Illinois State Poultry, Pigeon and Pet Stock Association and the National fanciers' Association of Chicago, at Tattersall's, in Chicago, January 8 to 14, inclusive, the Reliable people carried off the banner. There were a dozen of the leading incubators and brooders of the country in competition, and the class was hence an unusually strong one. Such victories as this one are not new to the manufacturers of the Reliable, as they have won in this and other countries under almost all kinds of conditions. We know our readers who are users of the Reliable incubators and brooders will rejoice at this new victory of their favorite.



Fooled the Critic.

Sir Wemyss Reid, in a personal sketch of his friend, the late Mr. Black, in the Speaker, tells how the novelist outwitted the Saturday Review. When "A Daughter of Heth" appeared, it took the town by storm, and as it appeared anonymously, Sir Wemyss heard for the first time from an acquaintance who the author was. It was with a certain sense of injury that I asked, "Why, if Black really wrote the book, did he not put his name to it?" "Oh, don't you know?" was the instant response. "That is the best part of the joke. The Saturday

Review has been 'down' upon everything he has written, so he purposely published this book anonymously in order to take in the Saturday Reviewers, and they were the first people to sound the praises of 'A Daughter of Heth.' If his name had been on the title page they would have damned it."

Unlike many bits of gossip about successful authors, this—as Sir Wemyss learned later from Mr. Black's own lips—was strictly true.

Woman's Rights in Burmah.

Burmah is a woman's paradise. There is no necessity to have women's rights associations. A woman is the equal of a man. There are no harems, and no restrictions to love-making, except flirtation and kissing, which are indecorous. All the business of Burmah is done by the women, while the men stay at home to smoke and mind the babies. Every woman has a shop of some sort, and when her husband is not kind she gets a divorce.

The Burmese woman is petite, and, though at first her features seem strange and are not attractive, you soon get used to them. Every girl is an artist, and she dresses artistically and in bright, shiny colors. She wears a square, loose-fitting, overlapping white jacket, short in sleeves. Her frock is a piece of red or yellow or green silk tied tightly, so that she walks with short, mincing steps. The mold of the figure is distinctly shown, but, as every girl walks with a curious twist of the heel, there is nothing immodest.

In Burmah, as in other lands, the pride of a girl is her hair, and if it reaches to the ground she has reason to be conceited. She never wears a bonnet, but there is always a rose or some other flower stuck in the folds of her tresses. She is fond of jewelry, necklaces, bracelets and rings, but she is never guilty of showiness.—Ladies' Realm.

Three of Neptune's Adopted Children.

That out of a family of four children three should be born at sea and on one ship is a remarkable occurrence, which, taken into consideration with the fact that the only child of the family born ashore did not live to be a week old, makes it more so. The children are those of Capt. and Mrs. Carson, and they first saw the light of day in the cabin of the Manx ship Manx King. Capt. Carson's family consists of two sons and one daughter—Tom, Jack and Teresa.

Tom, the eldest, was born on the Pacific ocean about three hundred miles off the coast of Chili on May 3, 1888. Teresa was born in the storm center of the most dreaded coast in the world, almost off the peak of Cape Horn, on March 24, 1891. Jack was born December 24, 1892, in the North Atlantic Ocean, in latitude 4.16 north, longitude 24.31 west.

All of the children enjoy remarkably good health, and no matter at what angle the ship may ride, nor how much it may pitch and toss, the children of the Manx King play in the ship's cabin. They have become so accustomed to the motion of the ship that not one of them has suffered any bad mishap, for, when they are thrown down by the violent pitching or rolling of the ship, they seem in some way to settle on the deck, much after the fashion of the storm birds on the ocean waves.

Tom's knowledge of nautical matters is naturally extensive. As young as he is, he knows the name and location of every line and spar on a ship, and if it came to a pinch he could give all the necessary orders for shortening sail or putting the ship on its courses.—Portland Oregonian.

It Will Surprise You--Try It.

In order to prove the great merit of Ely's Cream Balm, the most effective cure for Catarrh and Cold in the Head, we have prepared a generous trial size for 10 cents. Get it of your druggist or send 10 cents to ELY BROS., 56 Warren St., N. Y. City. Ely's Cream Balm has completely cured me of catarrh when everything else failed.—Alfred W. Stevens, Caldwell, O.

After using Ely's Cream Balm six weeks I believe myself cured of catarrh.—Joseph Stewart, Grand Ave., Buffalo, N. Y.

Ely's Cream Balm is the acknowledged cure for catarrh and contains no cocaine, mercury nor any injurious drug. Price, 50 cents. At druggists' or by mail.

We can save you money, if you want most any paper or magazine, in connection with Kansas Farmer. Write for special club list.

BLOCKS OF THREE.—Two new subscriptions for one year for \$2, and, in addition, a renewal for one year free to any old subscriber who sends two new subscriptions and \$2 in one order. Kansas Farmer Co., Topeka, Kas.

Best Seeds that Grow! Thousands of Dollars in CASH PRIZES for 1899

and many other New Features, of particular interest, presented in BURPEE'S Farm Annual Leading American Seed Catalogue Mailed FREE to all.

A handsome new book of 176 pages,—tells the plain truth about Seeds, including rare Novelties which cannot be had elsewhere. Beautiful colored plates and hundreds of illustrations from nature. Gives practical information of real value to all who would raise the choicest Vegetables and most beautiful Flowers. Write a postal card TO-DAY! W. ATLEE BURPEE & CO., Philadelphia

The Following Special Merits

Are claimed for the "Acme" Pulverizing Harrow, Chod Crusher and Leveler:

Easy of draught.—The coulters or teeth, by running obliquely, or with a long slant through the soil, have the same advantage that belongs to a sharp boat in running through the water, instead of a square-headed or blunt one.

Efficiency of work.—While many other harrow teeth come square against the soil, making hard work for the horses, those of the "Acme" turn the crumbling soil to the right and left, and have also an oblique or draw-cuts downwards, slicing and crushing the hard lumps over which they pass. A two-horse team will draw one of these harrows with the driver riding on the seat, thus rendering its downward cut more efficient, with as much apparent ease as a common square-tooth harrow is drawn without a load, and it will mellow a breadth of ground six and a half to thirteen and a half feet wide at each passing. Its draught is light when the thoroughness of its work is taken into consideration.

Its many uses.—It is a capital instrument for pulverizing inverted sod in preparing for planting corn, as it goes down several inches in mellowing the freshly turned earth, while its slanting cut prevents tearing up the sod. For this purpose alone it is worth much more than its cost to any farm of even moderate size.

It is especially adapted to cultivating apple, peach and pear orchards, as it may be graduated to move as near the surface as may be desired, avoiding any injury to the roots and never tearing out any over which it passes.

In rapidly preparing corn or other stubble for sowing fall grain: Plowing may not be necessary in some soils, if at the second and third passing the teeth are thrown down deep for a perfect pulverization.

Mellowing ground in early spring, which has been plowed the previous autumn, for the timely sowing of barley, spring wheat or oats.

These various qualities fit it for an easy, rapid and efficient preparation of land, and in cheaply working the broad fields of a large farm into as fine condition as a garden.

The manufacturer, whose advertisement appears on another page, offers to send this implement on trial to be returned at his expense if not entirely satisfactory. No pay is asked or expected before trial.

BLOCKS OF THREE.—Two new subscriptions for one year for \$2, and, in addition, a renewal for one year free to any old subscriber who sends two new subscriptions and \$2 in one order. Kansas Farmer Co., Topeka, Kas

Wild Flowers in California

are only one of the innumerable charms of that summer-land, which thousands of winter tourists find more delightful than the Mediterranean. Only 24 days from Chicago by the California Limited, Santa Fe Route.

Address T. L. KING, G. P. & T. A., The Atchison, Topeka & Santa Fe Railway TOPEKA.

KANSAS EXPERIMENT STATION SPRAY CALENDAR.

The spring canker worm, the codling moth, and the other pests will be in evidence surprisingly soon after the cessation of cold weather. To enable Kansas Farmer readers to wage a successful warfare against their enemies in the orchard, we present herewith the Spray Calendar arranged by the Horticultural department of the Kansas State Agricultural College. This is the best spray calendar ever prepared for this part of the country. It has been greatly in demand and is likely to appear in some of the papers devoted exclusively to horticulture. Be sure to save this number of Kansas Farmer until after the season for insect pests shall have passed

PLANT.	PEST.	REMEDY.	1st APPLICATION.	2d APPLICATION.	3d APPLICATION.	4th APPLICATION.	5th APPLICATION.
APPLE.....	Apple-tree tent caterpillar.....	Paris green.....	Before buds open..	Two weeks later....	Paris green when caterpillars appear		
	Apple-tree aphid....	Alkaline wash (1).... Kerosene emulsion 2	In early spring (1)..	At opening of buds 2	Two weeks later (2)		
	Bitter rot.....	Bordeaux mixture..	Before leaves expand	After fruit has set..	Two weeks later....	A month later.	
	Canker worm....	Paris green.....	When caterpillars first appear.....	One week later....	One week later.....		
	Codling moth.....	Paris green*.....	Just after blossoms fall.....	A week later.....			
CHERRY....	Scab.....	Bordeaux mixture..	When buds are swelling.....	Just before buds open.....	Ten days later.....	Same as 3d.....	Same as 3d.
	Cherry-leaf aphid....	Alkaline wash (1).... Kerosene emulsion 2	Before buds open (1)	When aphids appear (2).....			
	Curculio.....	Paris green in Bordeaux.....	When buds are opening.....	When fruit is set..	One week later.....		
	Leaf spot.....	Bordeaux mixture..	Before buds open..	Two weeks later....	Two weeks later....	Two weeks later....	Two weeks later.
CURRANT...	Rot.....	Bordeaux mixture..	Before flower buds open.....	When fruit is set..	Ten days later.....		
	Currant worm.....	Paris green in Bordeaux (1)..... Hellebore (2).....	Before flower buds open (1).....	One week later (2)..	Hellebore when worms are present	Same as 3d.....	Same as 3d.
	Leaf spot.....	Ammoniacal carbonate of copper (1) Bordeaux mixture 2	Middle of June (1)..	After fruit is removed (2).....	Ten days later (2)...		
GOOSEB'RY.	Worm.....	Paris green in Bordeaux (1)..... Hellebore (2).....	Before leaves expand (1).....	One week later (2)..	When worms appear (2).....		
GRAPE.....	Anthraxnose.....	Copper sulphate (1).. Bordeaux mixture 2	Before buds start (1)	When leaves are half size (2).....	When fruit has set 2	Two weeks later (2)	In two weeks use ammoniacal copper carbonate.
	Leaf-hopper.....	Kerosene emulsion..	When first seen.....	A week later.....			
	Black and brown rot	Copper sulphate (1).. Bordeaux mixture 2	Before buds start (1)	Just before blossoming (2).....	When fruit is set (2)	Ten days later (2)..	Ten days later ammoniacal copper carbonate.
PEACH.....	Aphid.....	Alkaline wash (1).... Kerosene emulsion 2	Before buds open (1)	Two weeks later (2).			
	Codling moth.....	Paris green.....	Just after blossoms fall.....	One week later....			
	Curculio.....	Paris green in Bordeaux.....	When buds are opening.....	When fruit is forming.....	One week later.....		
	Leaf-curl.....	Copper sulphate (1).. Bordeaux mixture 2	Just before buds swell (1).....	Just before blossoms open (2).....	After blossoms fall 2	After fruit is set (2)	
	Rot.....	Bordeaux mixture..	As buds are swelling	Just after blossoming.....	After fruit is set....	Ten days later.....	As fruit is coloring.
PLUM.....	Curculio.....	Paris green in Bordeaux.....	Before buds open..	When fruit is set....	One week later.....		
	Rot.....	Bordeaux mixture..	As buds are swelling	Just after blossoming.....	After fruit is set....	Ten days later.....	Ammoniacal copper carbonate as fruit is coloring.
RASPB'RY	Anthraxnose.....	Copper sulphate (1).. Bordeaux mixture 2	Before buds start (1)	Ten days later (2)...	After old canes are cut out (2).....		
BLACKB'Y	Rust.....	Same as anthracnose.....					
STRAWB'RY	Leaf blight.....	Bordeaux mixture..	When growth first starts.....	At opening of earliest blossoms.....	After crop is off remove old foliage, and burn it. Spray every three or four weeks.		
	Leaf roller.....	Paris green.....	By first of May.....	Three weeks later..	In July, mow the plants and rake off leaves, and destroy		
BEET.....	Scab.....	Avoid infected soil..					
CABBAGE...	Worm.....	Paris green and flour (1)..... Pyrethrum (2).....	When worms first appear (1).....	Week later (2).....	Repeat 2d when worms appear.....	Same as 3d.....	Same as 3d.
ONION.....	Thrip.....	Kerosene emulsion..	At first appearance..	Every 3 or 4 days till pest is gone.....			
POTATO....	Potato scab.....	Soak uncut seed potatoes for 1 1/2 hours in solution of one oz. of corrosive sublimate to 15 gallons of water.					
	Potato rot.....	Bordeaux mixture..	By first of July.....	Two weeks later....	Two weeks later....		
	Colorado beetle.....	Paris green.....	When worms first appear.....	A week later.....	Use Paris green for potato beetle.		
	Blight.....	Bordeaux mixture..	Last of May for early potatoes.....	Two weeks later....	Two weeks later....		

INSECTS TREATED BY OTHER MEASURES.

APPLE.....	Apple-root plant louse.....	Remove earth from base of tree, and pour in water, heated not to exceed 150 degrees F.
	Apple-tree tent caterpillar.....	Remove nests from trees by a forked stick or gloved hand.
	Apple twig pruner..	Gather and destroy fallen twigs.
	Canker worms....	Prevent ascent of female moths by traps or obstructions.
PEACH.....	Curculio.....	Jar trees so that adults fall on a sheet, where they may be collected and destroyed.
	Leaf crumpler....	Collect and destroy leaf masses.
	Tree borers.....	Apply alkaline wash or one gallon of whale oil soap-suds to an ounce of carbolic acid to trunk of tree, remove larvae with a knife.
PLUM.....	Peach-tree borer..	Apply alkaline wash, or one gallon of whale oil soap-suds to an ounce of carbolic acid to trunk of tree, mound trees in spring, remove worms by knife in fall and spring.
	Curculio.....	Jar trees to that adults fall on a sheet, where they may be destroyed.
SQUASH....	Gouger.....	Same as for curculio.
	Bug.....	Destroy vines as soon as crop is gathered; collect eggs and adults, and destroy.
CABBAGE..	Aphid.....	As soon as aphids appear on cabbages, spray with kerosene emulsion.
	Harlequin bug.....	Plant mustard between cabbages, which attracts the bugs, then spray mustard with kerosene.

FUNGICIDES.

BORDEAUX MIXTURE.	Copper sulphate, 4 lbs.	AMMONIACAL CARBONATE OF COPPER.	Carbonate of copper, 5 oz.
	Quick lime, 4 lbs.		Ammonia, 2 qts.
First dissolve the copper sulphate. This can be done by hot water, or suspending the sulphate within a sack in a bucket of water. The lime should be slaked in another vessel, and if lumpy should be strained through coarse sacking. Pour both together, add enough water to make 50 gallons, and stir thoroughly. As a combined insecticide it is often advisable to add Paris green.		The carbonate of copper should be dissolved in the ammonia, and the solution kept tightly corked till use, when it should be mixed with 40 or 50 gallons of water. To be used when Bordeaux mixture stains fruit.	
REPELLANT FOR TREES.		ALKALINE WASH.	
Soapsuds (whale oil soap) 1 gal. Carbolic acid (crude) 1 oz.		Dissolve washing soda in water till no more will dissolve, then add to soft soap till it forms the consistency of thick paint.	
COPPER SULPHATE SOLUTION.		Enough carbolic acid should be added to give a strong odor. This should be applied to bark of trees from the base up to the main branches.	
Copper sulphate, 1 lb. Water, 25 gal.			
Hot water enough to dissolve copper sulphate.			
Use only when trees are dormant.			

INSECTICIDES.

KEROSENE EMULSION.	Kerosene, 2 gals.	PARIS GREEN.	WET.	DRY.
	Water (rain), 1 gal. Soap, 1/2 lb.		Paris green, 1 lb. Water, 150 to 200 gals.	Paris green, 1 lb., to 50 lbs. of flour or plaster Paris.
The soap should be thoroughly dissolved in boiling water. Then add kerosene while emulsion is warm, and violently agitate till it reaches a creamy consistency. For use this should be diluted; one part of emulsion to 15 parts of water. This is good for plant lice or scale insects, and for all insects with sucking mouth parts.		Better results are obtained by adding one pound of lime to the above if used on trees sprayed repeatedly. [Some Kansas orchardists of large experience use London purple as follows: London purple, 1 lb.; lime, 1 lb.; water, 50 gallons.—Editor Kansas Farmer.]		
		LONDON PURPLE can be used instead of Paris green.		
		PYRETHRUM.		
		Mix with three or four times its weight of flour, and keep in a closed can twenty-four hours before using.		
		HELLEBORE.		
		When used dry it should be mixed with two or three times its weight of road dust or cheap flour. For wet mixture, one ounce to two or three quarts of water.		

NOTES.

Aim to have pumps with working parts of brass. Copper sulphate solution to be used only before buds open. *For codling moth, put Paris green in Bordeaux mixture. If trees with tender leaves are injured by above Bordeaux mixture, reduce copper sulphate one-half and add more lime. Newspaper remedies are not always to be relied on. Stir solutions thoroughly while spraying.

In the Dairy.

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

CARE OF MILK.

Paper by Harold T. Nielsen, read at Farmers' Institute, Denmark, Kans., November 28, 1898.

This is a subject of which we should have a reasonably good knowledge. By taking good care of milk, good butter and cheese can be made, and these products, when good, will command good prices; so it is really to a large extent the farmer's own fault when he receives only a low price for butter fat. Hence the importance of a good knowledge of how to care for milk.

It may be most convenient to treat the subject under different heads, such as cleanliness, feeding of cows, precautions to be taken before and during milking, Pasteurization, etc.

CLEANLINESS.

I desire to speak of cleanliness first, for, in my opinion, it is of the utmost importance. You have all heard that "Cleanliness is next to godliness," and it applies to the care of milk as well as any other place.

It might not be out of the way to here tell why cleanliness is necessary. The world is full, we may say, almost made up of minute living organisms called bacteria; so small are they that it requires a very high-power microscope in order to see them. Some of these bacteria, most of them in fact, are harmless; some are useful, absolutely necessary in life in order that refuse and waste products shall not pile up and blockade everything. Then there are those that are harmful; the ones we have most to do with. In milk, bacteria find splendid food while the milk is yet warm and at the right temperature for rapid growth. Some kinds double their number in about twenty minutes, so, when milk is allowed to stand for some time at about 75° F., an enormous number of bacteria will be found in it, sometimes as many as several hundred million in a cubic centimeter. A cubic centimeter is about a half thimbleful, if the thimble is not too large; if the thimble was to fit my finger a cubic centimeter would not fill it half full. Many of these different kinds of bacteria (there are several hundred of them) are harmful, both when the milk is consumed or manufactured. But now, coming back to cleanliness, I will say that these bacteria of which I have spoken get into the milk along with the particles of dirt. They are also to be found in immense numbers in milk pails and cans, wherever a particle of dirt is to be seen. Therefore the utensils should be well cleaned. A good method is to rinse in lukewarm water, then wash in water hot as the hand will bear and steam thoroughly, or if this is not possible (which it generally is not on the farm), rinse with boiling water and place them in the sunshine so they will drain. Having cleaned your utensils in this manner, they are clean and no trouble can reasonably be laid to unclean dairy utensils.

THE MILKING.

We now come to the critical part, milking. Generally it is regarded as the dirtiest job on the farm, and it ought to be the cleanest. I will try to give you the performance that ought to be gone through with to get the milk. To begin with, the cows should not be standing on dusty or moldy bedding, and the air should be free from dust if possible, for in this dust float millions of bacteria which should not be allowed to enter the milk. Now, let us prepare for milking. The milker must be clean, his hands washed and dust brushed off his clothes. He should also take on a clean outer garment, kept for the purpose, so as to prevent germs from his person getting into the milk, for they are the most dangerous kind. Typhoid fever, diphtheria, and other diseases have been traced to such a source. A person just recovering from one of these contagious diseases, or probably has been an attendant to a patient, has, in the process of milking, shaken some germs into the milk, where they have increased, and the milk has been consumed, with the result that some person has taken the disease and it has again ravaged. Here I may also say that healthy cows are of vast importance, as cows are liable to some of the same diseases as people; hence a disease may be transmitted that way. But to the milking—I have a queer way of rambling away from what I start to tell. After the milker is donned in his milking suit, he should take a brush and a damp sterilized cloth (sterilized means being free from germs or bacteria, and is made so by being put in boiling water). The

cow should be brushed on the flank and udder and under the stomach, so as to remove loose hairs and dirt particles. The udder and flank should then be wiped with the damp cloth, the dirt particles being then not so liable to drop off into the milk pail. We are now ready to begin milking, and I will say that the best milk pail manufactured is the one shown on the back of this evening's program, the sanitary milk pail. The first few streams of milk should not be milked into the pail, as they are rich with bacteria, and this milk is not much good anyway, showing but a slight per cent of butter fat. It might be well to tell how the first streams of milk become tainted with bacteria. The end of the teat is always moist when milking is finished, and here the bacteria lodge and then work their way up the duct in the teats and into the milk cistern, where they increase very rapidly, as the temperature is about right for them. However, it is only the first milk affected in this way. After a few streams have been milked, commence milking into the pail, holding it so as to catch as little dust as possible. When through milking, take milk outside the barn to strain, not leaving it in the barn longer than is absolutely necessary. Milk that has been secured in this manner is much purer than milk secured in the ordinary way. An experiment was made to find the difference, with this result: Milk carefully drawn, 330 bacteria per cubic centimeter; usual manner, 15,500 for the same amount.

STRAINING.

The milk should be strained through a wire strainer having at least 50 meshes to the inch, and through from two to four thicknesses of cheese-cloth. A good wire strainer is one in which the milk passes upward.

AERATING AND COOLING.

As soon as possible the milk should be aerated, and if it is not to be Pasteurized, also cooled. Aeration consists in exposing the milk thoroughly to the air. The chemical change which this process causes is not yet understood, but it makes milk far better for consumption, and, it is reasonable to suppose, better for manufacture, also. At any rate, it takes much of the disagreeable cowy odor out of the milk. One way of aerating is by pouring the milk from one bucket to another in pure fresh air. Outside is the best, though not when the wind is blowing about forty miles an hour, as it does sometimes. Another and better way, is with the Champion milk cooler and aerator. With this the milk is cooled as it is aerated. The milk should be cooled immediately after or at the same time, so as to prevent or check bacterial growth. Milk should, if possible, be cooled below 50° F. If this is not possible, cool as low as you can and keep it so, and having taken all the precautions I have mentioned, no difficulty will be found in keeping milk for forty-eight hours during summer months, providing the milk is under shade and kept constantly cool.

PASTEURIZATION.

This consists of heating the milk up to the neighborhood of 165° F. and leaving it so for ten or fifteen minutes, and then cooling rapidly as low as possible. By doing this, disease-bearing germs are killed and the milk can be used with more safety, but no piece of machinery has yet been made that will do it and make it practical, so I need say nothing more about this.

CARE OF COWS.

I will now speak briefly of the care of cows, for I believe I have used about all the time that falls to my share. I believe you will all agree with me, that milch cows should have good care, but we may differ somewhat in regard to what good care really is. Feeding cows on corn stalks all winter is not good care, and they will give little milk and of not the best quality. But I am not to discuss the feed they are to have, but I will say that they should have more than one kind of feed in order to keep them in a healthy condition, and if they are not so, they will not give good milk, and good milk is what we want, for it pays best. If one of the cows seems to be sick, do not mix its milk with the milk of the others; you may ruin the whole lot. When in the stable, the cows should be well bedded and be able to lie down comfortably, and without soiling their udders and flanks with manure. Do not feed the cows just before milking, especially not any dusty feed. Dust should not be raised during milking time. When the cows are thus cared for they will give good milk, and your creamery checks will show that you are being well paid for treating the cows so kindly and well.

When the milk is to be delivered to a creamery, it should be in good condition when it arrives there. In the summer, cover with a wet blanket to keep from souring; in winter cover with a dry one

to keep from freezing. After it is in the creamery, there is little to say of its care, only keep everything scrupulously clean and there will be no difficulty if the milk is good when it gets there.

One more thing, and then I will close. The skim-milk should not be carried back in the same cans that the whole milk is brought in, for this reason: One patron may bring milk infected with an obnoxious bacterium, typhoid fever or something else, and by all the milk being mixed together this particular kind of bacteria may be spread around to all the patrons' milk; a few will lodge in a can and there live till new milk is strained into the can, when they will increase and all the other patrons' milk be infected with such kind of bacteria. But I believe the day is far distant when each farmer will be supplied with two sets of cans; hence I believe that the cheapest, quickest and best way is for each man to separate his own milk with a hand separator and be saved much of the trouble he now has. I hope to soon see the day when only the cream is hauled to the creamery, but until that time comes let us do everything possible to bring good milk to the creamery, by having taken good care of it on the farm and on the road to the factory.

The Creamery an Educational Center.

Paper by Henry Wallace, read before Nebraska Dairymen's Association, Fremont, Neb., December 21, 1898.

Investigations by the Experiment Station at Manhattan, among Kansas patrons, show that they vary from under 60 pounds of butter per cow per year to over 300 pounds. If the creamerymen of Nebraska could increase the butter per cow per annum to 200 pounds, something which can easily be done if they will give the farmer the right kind of advice and help, it would practically double the profits of every creamery in the State and more than double the profits of the average farmer who patronizes the creamery. How can this be done? By making every creamery an educational center, a sort of farmers' institute, in which the experience of one will supplement the inexperience of another, where they can learn from each other's mistakes, and take advantage of each other's successes and be truly co-operators in the work of feeding the world with the choicest butter. It will pay every creamery in the State to take some pains to see that first-class dairy literature goes into the hands of its patrons every week, and, unless this is done, it may be confidently expected that so long as the high price of calves continues there will be a decrease in the amount of milk furnished the creamery, an increase in the cost of manufacture, and a great decrease, not merely in the profits of the creameries, but in the profits of the farmer as well. In other words, by helping the farmer to a better breed of cows and helping him to improve methods of feeding and care, the creameryman can most effectively help himself. If patrons were all skilled dairymen this would be unnecessary. Unfortunately, the really skilled dairymen among patrons are few and far between, and the creamerymen must, so to speak, get down alongside the farmer, study with him, help him, if he is to find his business profitable in the future. If the creamery business is to succeed in Nebraska, it can do so only by increasing the amount of raw material, thus decreasing the cost of manufacture, and increasing the output from week to week, which necessarily will greatly increase the profits of both the patron and the creamery. Neither are in the business for their health or for the fun of it. They are after the profits, the cash, the sordid pelf, and only by intelligent co-operation with each other in every way can either be successful. Increase the supply of raw material, insist that it be first-class quality or be returned, and furnish the farmer with Pasteurized skim-milk, warranted to keep sweet twenty-four hours in the hottest weather, and there will be a mint of money in the business for years to come, and Nebraska will be, like the creamery sections of Iowa, a country of moderate-sized farms

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The Dairy Cow as a Machine.

We should regard our dairy cow as a machine that has for its purpose the conversion of our raw food-stuffs into milk. Now, machines of all kinds vary greatly in efficiency. A railroad company may be able to pull a train of cars with an old, second-hand engine, but they do not find it profitable to do so when they can use the latest-improved locomotive to so much better advantage. But this is not all; the railroads are constantly studying how to reduce the cost, or, in other words, to increase the efficiency of their machines. A poor engine in the hands of a poor fireman will do poor work. A poor engine in the hands of a good fireman may do good work, but this is no argument in favor of the poor engine. Let us apply the same principles to our dairy cow. D. H. O.

Influence of Cold and Storms on Butter Fat.

The Manhattan Creamery received milk on February 3, which, according to the usual calculations, would make 288 pounds of butter; but when the cream was separated and churned it yielded only 227 pounds, or over 21 per cent short of the usual run. In looking for the cause, it was noted that, on February 1, the weather turned cold and it snowed for two days. This goes to show that dairy cows especially should be provided with conditions as nearly uniform as possible. Any sudden change in temperature, feed or care may not permanently affect the percentage of butter fat in milk, but it will cause a temporary change, both in quantity and quality, and may in a large measure account for the fluctuations in the butter fat test experienced at so many of our creameries. D. H. O.

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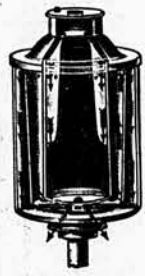
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WILLIAMSBURG, IOWA, July 28, 1898.

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The Spring Canker-Worm.

Press Bulletin Kansas Experiment Station.

It will not be long before this destructive insect will make its appearance in our orchard and shade trees. A description of the pest and the best means of combating it will at this time be timely, and will undoubtedly assist many in resisting the insect and preventing extensive losses from the same.

The canker-worm attacks a large number of our fruit, shade and forest trees. In the records of the department it has been recorded attacking apple, apricot, cherry, peach, plum, oak, ash, catalpa, and elm trees.

It is the larvae or caterpillars that injure the trees. Often the trees are entirely defoliated by them. In slight attacks, the leaves are perforated with small holes. But if the larvae or caterpillars are allowed to continue their destructive work, they soon devour the pulpy parts of the leaves, leaving nothing of the leaves but the midribs, veins and stems. When the damage has gone this far, it is then that the orchard has the appearance of having been scorched by fire.

The adults of the canker-worms are moths. The males and the females differ greatly in appearance. It is important that one be able to distinguish them. The male has two pairs of wings; the front wings are of a brownish-gray color, while the hind wings are of a light gray color. On the other hand, the female is without wings, and is of a brownish-gray color, with a black band along the middle of the back of the abdomen. She might easily be taken for a spider.

In early spring the adult moths emerge from their cocoons in the ground. During the day the males may be found resting on the bark of the trees. At the approach of evening they are often seen flying about the trees in large numbers. In some seasons they have been observed about the electric lights in swarms. The female moths are not so active. As they are without wings, they do not travel very far. Upon emerging from the ground they make their way to the base of some tree, up which they make their ascent to deposit eggs.

The eggs of the moth are oval-shaped, yellowish, with a pearly luster, and are deposited in irregular masses or clusters in fruit spurs or at the base of the large branches. The brown leaf masses of the leaf-crumpler are favorite places for the depositing of eggs. The moths seem to prefer to deposit their eggs in concealed or protected places.

Upon hatching out from the eggs, the young larvae or caterpillars commence to feed on the young expanding leaves. The small caterpillars are ravenous eaters, and as they increase in size their destructive work becomes more noticeable. The newly-hatched caterpillar is of an olive-green color. The mature caterpillar is about one inch in length, and varies in color from a greenish yellow to a dark brown.

When full grown the caterpillars abandon the trees, either by crawling down the trunk or by letting themselves drop by means of silken threads. Upon reaching the ground, they work their way into it for a few inches, where they construct cocoons, in which they pass into the pupa state. They remain in this state till the following spring, when they emerge as adult moths.

To combat the canker-worm, spray the infested trees with arsenical poisons, such as Paris green or London purple, at the rate of one pound of the poison to 150 to 200 gallons of water. The mixture should be thoroughly stirred while the application is being made. All the leaves of the trees should be reached by the poison. If rains should follow soon after the application has been made, spray the trees over again. Do not delay the spraying till the caterpillars are fully grown; for by this time the damage has been done. Spray as soon as the caterpillars make their appearance.

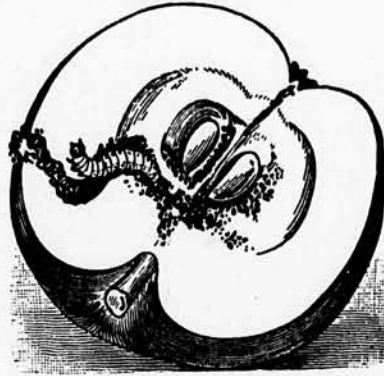
About the middle of March and from that time on, examine the trees occasionally. The presence of the caterpillars can soon be detected by jarring the branches of the trees, when the caterpillars will drop and hang suspended by silken threads. If the poisons are pure, and the spraying is done thoroughly and at the proper time, there is no necessity for any extensive injury by the canker-worm.

When there are but a few trees to be protected, an economical and successful measure is to entrap the female moths, which, as stated before, are wingless and depend upon crawling in order to reach the upper parts of the tree to deposit their eggs. To entrap the female moths, apply a collar of carpet paper or wire netting, with a flange at the lower side, and so fastened to the tree as to admit of no passage-ways at the collar. These traps or collars should be attached to the trees by the middle of February, and

should be visited several times during the week to destroy the entrapped female moths.

Spraying Fruit Trees.

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REID'S FRUITS Every tree, plant or vine bought at Reid's is well-rooted, vigorous, and true to name. Every care is taken in growing to insure absolute certainty to the buyer. Save one-half on anything you need in the nursery line, by buying at Reid's. We'll help you to choose by sending complete catalog, estimates, or any information you may ask for, free. **REID'S NURSERIES, BRIDGEPORT, OHIO.**

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AND HOW TO GROW THEM. He has grown the largest crops of fancy fruit ever produced on an acre. In his experimental garden are single PLANT WHICH PRODUCE OVER FOUR QUARTS of fine large berries. Our customers have done as well. This has been accomplished by scientifically breeding up plants to a high fruiting vigor so they throw their energies into the development of fruit instead of useless runners. All are propagated from an IDEAL PLANT and restricted for sixteen years, or since the introduction of the variety. The largest and most perfectly equipped experimental gardens in the United States. The cheapest plant is the one which will give you the best fruit and most of it. You can't afford to play second fiddle on the market by using scrub plants. The only large stock of strictly thoroughbred plants in America. Standard varieties only 15 cents per dozen and 300 for \$1. Start a propagating bed with these strong fruiting plants. The book is sent free. Send in your order quick. Address **R. M. KELLOGG, Three Rivers, Mich.**

WESTERN SEED AND AGRICULTURAL HOUSE. One of the Best Equipped Seed Houses in the West. Recleaned Field and Grass Seeds. Hand Garden Cultivators. Tested Flower and Garden Seeds. Hand Seed Drills. Potatoes and Onion Sets. Spraying Pumps. Greenhouse Plants. Poultry Supplies. Shrubbery, Etc. Bone Mills, Etc. Our 1899 Seed Catalogue is now ready. Write for it. Plant Catalogue issued March 1. **MANGELSDORF BROS. CO.,** Atchison, Kans.

DROUTH BEATING CORN.

A recent writer in this paper asked: "Why don't Kansas farmers raise more early sorts of corn?" The early varieties made twenty-five to thirty bushels per acre in Kansas in 1898, along side native corn that made less than five bushels." This is so in Kansas, as a rule. One-hundred-day well-bred corn from Illinois matures its ears fifteen to twenty-five days before drouth or hot winds catches and ruins Kansas native corn. I have many testimonials affirming this. One below. Mr. J. D. Cowan, Austin, Kans., writes: "Your C. W. Pearl Corn made forty-two bushels fine corn per acre three weeks before drouth caught my native corn, which made very light yield of poor quality." C. W. Pearl Corn has made big yields in Kansas for fifteen years. It is very white No. 1 milling corn. Matures in 100 days. Price: Three pounds, postpaid, 75 cents; by fast freight, one-half bushel, 75 cents; one bushel, \$1.40; two bushels, \$2.55; five bushels, \$6.00; ten bushels, \$11.50. Golden Beauty, St. Charles White, Imp. Leaming and Hickory King Corn, in ten bushel lots, \$1 15 per bushel; thirty bushel lots, \$1 per bushel. Artichokes, forage and many other farm seeds. My special treatise on how to raise big crops from Illinois-grown seed corn in Kansas in drouthy years, abundant proof and my new catalogue of corn and other field seeds sent free if you cut out and send this advertisement and three addresses of wide-awake land owners. I refer to editor of this paper Or send money to First National Bank, Bement Ill., to be paid over to me if they know me to be reliable.

The Veterinarian.

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the Kansas Farmer. Give age, color and sex of animal, stating symptoms accurately, of how long standing, and what treatment, if any, has been resorted to. All replies through this column are free. In order to receive a prompt reply, all letters for this department should give the inquirer's postoffice, should be signed with his full name, and should be addressed to the Veterinarian Department, K. S. A. C., Manhattan, Kans. All such inquiries will receive prompt attention from Paul Fischer, B. Agr., M. V. D., Professor, and A. J. Burkholder, D. V. S., M. D., Assistant, Kansas State Agricultural College.

INFECTIOUS ABORTION.—I wish you would tell me, through your paper, why my cows lose their calves. In the fall of 1896 I bought a Polled Angus bull from a man that had aborting in his herd. I had him with my cows about one month. He served one and she had a calf and it is all right. I was advised by a neighbor to sell him. I did so, and in the spring of 1897 bought a grade Shorthorn. Last year I did not lose any calves. This year up to now I have lost seven. Two came about sixteen weeks too soon and the other five came six to eight weeks too soon. The cows are somewhat uneasy for a day or two before the calf is dropped, but eat well right along. My cows are in fair condition. I feed a load of fodder a day, sometimes corn fodder, sometimes Kaffir corn fodder and sometimes mixed, with all the prairie hay they will eat. They have good running spring water. Does that aborting come through the Polled Angus bull? My calves will be due in March, April, May and June. What can I do to save the rest of them. P. G. T. Alma, Kans.

Answer.—No breed is exempt from this trouble. The cause is to be found in a germ, and when once this disease makes its appearance in a herd of pregnant cows—irrespective of breed, age or breed of sire—the treatment must be prompt, effectual and thorough. Remove from stable and yard all manure and litter, take out floor, whether board or dirt, dig up and remove six inches of earth, scrape walls of any filth that may be found, brush ceiling clean of cobwebs and dust, clean racks and mangers. Get of your druggist one-half pound of chloride of lime. Dissolve this in 10 gallons of water and thoroughly apply, wetting every visible part of walls, stalls, racks and floor of stable, also use this wash in same manner in yard which has previously been cleaned. Do this early in the day, shut up the doors for several hours, then apply a coat of whitewash to all wood, brick or stonework, both in and outside. By having your whitewash, fresh earth, etc., ready, and yard cleaned day before, the work on inside can be accomplished in a few hours. After this, you are ready to put in fresh dirt floors, put over it plenty of straw, and your stable is ready for use. Place in only healthy cows. Any that may have aborted within ten days must be put away from the herd and not allowed to use even the same yard or pasture. In the event any abort in the future, take them away and keep them separated from herd for ten days, provided they have cleaned properly; if not, keep them away longer. Remove all aborted material, bedding, manure and scrapings of floor and bury them three feet deep, or burn them. In doing this be careful that no particle is left or scattered about stable. Such measures as recommended require a little labor; but since this disease has proved in all cases to be one difficult to stamp out, it is clear to our minds that, unless our efforts are rewarded with success, our time has been wasted. Many medicines have been tried in the treatment of infectious abortion, and the results have been very discouraging. The writer has, during the past year, used carbolic acid with success. Will advise you to have your druggist make a 2 per cent solution of carbolic acid in water. Procure a hypodermic syringe, and inject under the skin of the shoulder two teaspoonfuls of this prepared solution once every ten days on all pregnant cows. Do this every ten days, using first right and then left side for inserting needle, and continue until three doses have been given. Then leave off this treatment on those that have not yet reached the fifth month of pregnancy. Continue, however, this subcutaneous treatment, on all that have reached or passed the fifth month, until the seventh month has been reached. We would like for you to employ all treatment above recommended, and by so doing determine the value of carbolic acid in this disease, during which time communicate direct with this department.

LOUSINESS.—Have you a remedy for killing lice on cattle? I have 60 calves badly affected with the black flat louse. These calves have been well fed all winter, but are getting poorer every day in spite of all I can do. Please answer

through the Veterinary column of the Kansas Farmer. L. W. P. Elk, Kans.

Answer.—This trouble is caused by either of two species of louse, *Haematopinus eurysternus* (the short-nosed ox-louse) or *Haematopinus vituli* (the long-nosed ox-louse). The former is longer and wider than the latter and is usually found only on the neck and shoulders. Of the two, this species is the more difficult to destroy, but both will yield to the following treatment: Take kerosene, one gallon; common or whale oil soap, one-eighth pound; water, one-half gallon. Heat the solution of soap and add it boiling hot to the kerosene; churn the mixture for five or ten minutes. Dilute the resulting emulsion with eight parts of water, and apply it to the animals with a spray pump or by thoroughly rubbing in with a cloth. If you resort to spraying, do the work on a warm day. If necessary, repeat the operation in the course of a week. The above amount is more than sufficient to treat all of your animals once. To prevent reinfection apply the same remedy to walls, floors, and bedding of stable.

L. K., Cimarron, Kans.—Kindly explain all symptoms noticed. How long were your cows sick before death ensued? Did they have access to the loco weed after you got them home? When did they? Did they eat heartily prior to last stages of disease? How many did you buy? How many died? What was their general condition at time of death? We will gladly help you out of your trouble if you describe fully. We never guess at questions, so please give us the information requested in time for next issue.

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Take Laxative Bromo Quinine Tablets
All druggists refund the money if it fails to cure. 25c. The genuine has L. B. Q. on each tablet.

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STRAWBERRIES
\$1.75 a 1000 for standard kinds. Only New Beds. Best Plants you ever saw. Raspberries, \$5. a 1000 Other fruits at like rates. Lists SENT FREE. JOHN F. DAYTON, WAUKON, Allamakee Co., IOWA.

POTATOES \$1.20 a Bbl.
Largest Seed POTATO growers in America. The "Rural New Yorker" gives Salzer's Earliest a yield of 464 bus. per acre—ripe in 95 days. See Catalogue for prices. Our great Seed Book, 10 Farm Seed Samples, worth \$10 to get a start, for 10c. postage. JOHN A. SALZER SEED CO., LaCrosse, Wis.

600 ACRES—13 GREENHOUSES.
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We offer a large and fine stock of every description of Fruit and Ornamental Trees, Shrubs, Roses, Vines, Small Fruits, Hedge Plants, Greenhouse and Bedding Plants. Priced Catalogue Mailed Free. Established 1852. PHOENIX NURSERY COMPANY, 180 N. Park St., Bloomington, Ill. Please mention this paper.

Strawberry Plants
In large or small lots, grown from new fields especially for the plants.
I keep only the Best and True to Name
FRUIT TREES.
Apple, Peach, Plum, Cherry and Apricot trees, Grape-vines, Gooseberry, Currant, Blackberry and Raspberry plants.
Evergreens, Ornamental Shrubbery, Roses and Shade trees. Price List Free.
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BEST SEEDS ON EARTH!
DIRECT FROM GROWER TO PLANTER.
From Saginaw Valley Seed Gardens. Michigan Northern Grown Seed Potatoes, Vegetable, Flower and Field Seeds. Everything in Seeds at lowest prices.
To introduce my superior Northern Grown Seeds everywhere, I will give away, Absolutely Free as Premiums, 1,000,000 Packets of Vegetable and Flower Seeds.
Send your name and address to-day for my SEED BOOK which tells how to get THE BEST SEEDS FREE. Seeds that will grow.
HARRY N. HAMMOND, Seedsman, Fifeield, Mich. Box 26, FORMERLY, DRACUT.

Iowa Farms for sale; \$2 per acre cash, balance crop until paid. J. Mulhall, Sioux City, Ia.

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No experience required. Directions for sprouting free with order. Also Vineless Sweet Potatoes for sale and on shares.
T. J. SKINNER, Columbus, Kas.

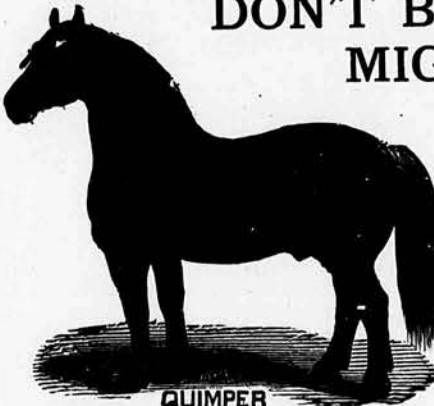
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Are the Finest Equipped, Most Modern in Construction and afford the Best Facilities for the handling of Live Stock of any in the World. The Kansas City Market, owing to its Central Location, its Immense Railroad System and its Financial Resources, offers greater advantages than any other. It is the Largest Stocker and Feeder Market in the World, while buyers for the great packing houses and export trade make Kansas City a market second to no other for every class of live stock.

	Cattle and Calves.	Hogs.	Sheep.
Official Receipts for 1898	1,846,233	3,672,909	980,303
Sold in Kansas City 1898	1,757,163	3,596,828	815,580

C. F. MORSE, E. E. RICHARDSON, H. P. CHILD, EUGENE RUST
Vice Pres. and Gen. Mgr. Secy. and Treas. Asst. Gen. Mgr. Traffic Manager

DON'T BE A— MIGHT HAVE BEEN,
But buy some Good Young Breeding Stock now—while prices are reasonable and opportunities great.
For 25 Years the Leading Western Breeder of Percheron and Coach Horses.
I have now the finest collection of young Home-Bred Stallions and Mares ever owned in the State. Correspondence solicited. Visitors welcome.
HENRY AVERY,
WAKEFIELD, KANSAS.



QUIMPER

THE STRAY LIST.
FOR WEEK ENDING FEBRUARY 9, 1899.
Barber County—J. E. Holmes, Clerk.
MULE—Taken up by F. J. Saunders, in Sun City tp., January 17, 1899, one blue horse mule, four feet six inches high, branded on left shoulder; valued at \$15.
Nemaha County—A. G. Sanborn, Clerk.
STEER—Taken up by Emory Conwell, in Gilman tp., (P. O. Oneida), January 10, 1899, one red yearling steer, crop off right ear, swallow fork in left ear; valued at \$18.
Harvey County—S. M. Spangler, Clerk.
MULE—Taken up by Thomas H. Russell, on sec. 28, Darlington tp., January 16, 1899, one bay mare mule, about 12 years old, slit in each ear, about 15 hands high; valued at \$20.
Lyon County—H. E. Peach, Clerk.
MARE—Taken up by Fred Sedwith, in Emporia tp., January 10, 1899, one 2-year-old dark brown mare.

The Tie That Binds
THE GOLD MEDAL FENCE.
MADE BY THE Anchor Fence Co., 1820 Grand Ave., KANSAS CITY, MO.
[OPEN.]
Makers of "The Anchor Clamp" The Tie That Binds.
Also dealers in Wire Fence Material.
Gold medal awarded to Anchor Fence at the Trans-Mississippi Exposition, Omaha, 1898. The best wire fence on the market.
[CLOSED.]
Mention Kansas Farmer and write for full particulars.

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WITH SOOTHING, BALMY OILS.
Cancer, Tumor, Catarrh, Piles, Fistula, Ulcers, Eczema and all Skin and Womb Diseases. Write for Illustrated Book. Sent free. Address DR. BYE, Cor. 9th & Kansas City, Mo.
WETTING CURED. Sample FREE. Dr. P. E. May, Bloomington, Ill.

NEXT TO A DAILY.
The Semi-Weekly Capital
FOR THE FARMERS OF KANSAS.
The war with Spain has emphasized the fact that a weekly newspaper, for general news, is too slow for the up-to-date, progressive farmer. Thousands who could not take a daily have secured in The Semi-Weekly Capital a complete summary of the news of the war, besides all the other news of the world, especially everything happening within the borders of Kansas. The settlement of the controversy with Spain and the introduction of American government in the newly acquired territory will afford a great fund of interesting news and information. Subscribers to the Semi-Weekly Capital will receive it all at the same cost as an ordinary weekly paper. Sample copy free upon request.
\$1.00 per Yr.
THE LEGISLATURE.
A subscription to the SEMI-WEEKLY CAPITAL now will secure the best and most complete report of the proceedings of the coming Kansas Legislature which will appear in any paper published in or out of the state.
The Semi-Weekly Capital and The Kansas Farmer
Will be sent to any address for one year for \$1.50.
ADDRESS
The Kansas Farmer, Topeka, Kas.

WHEN WRITING ANY OF OUR ADVERTISERS PLEASE MENTION KANSAS FARMER.

The Poultry Yard

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

POULTRY EDUCATION IN DEMAND.

As I have observed the signs of the times in the poultry industry, there are several neglected subjects that should claim the attention of every believer in the fixedness or perpetuity of the poultry industry as a commercial necessity. In my contact with poultry breeders and poultry supply men, I find that there is a great scarcity of qualified men to superintend poultry farms. Only recently a large breeder of poultry and ducks for broilers inquired of me for a competent person to superintend and direct the affairs of his farm. He would be willing to pay a good salary if proper talent could be secured. I was unable to direct him to the proper person. Another large advertiser of poultry has made inquiry far and wide for a suitable man to superintend the shipping, breeding and mating of his poultry. A practical knowledge of the poultry business or special fitness is required. Thus far no suitable person has been found to fill the place.

In or near Chicago poultry farms of almost every imaginable size and description are being established. Inexperienced hands are relied on to conduct the business for the fancier! I say fancier advisedly, because a large number of the plants are being put in by capitalists who have a fancy for the poultry business, but have only time to look at it—not time to look after it. They want someone else to do the work.

Our incubator manufacturers have given a wonderful impetus to the poultry industry and have made possible the carrying on of a large business at a minimum cost, with profit, and in condensed time and space. Failures are mainly due to ignorance, to lack of knowledge of the details and proper methods of caring for poultry under modern conditions. One should also know how to dispose properly of the poultry produced to best advantage; how to make a market for it, and how to fit it for the market. You will observe that I refer to poultry from a commercial point of view, which, after all, is the foundation of the entire poultry business. It is getting more and more upon that basis and we must face the issue squarely.

My suggestion is, that an effort be made to induce our State Agricultural Colleges to put in a department for the instruction of young men in the proper methods of breeding and handling poultry. This is being done in a limited way only. To accomplish this end, some one must stir the people to a realizing sense of its needs. I know of no better method than by newspaper agitation, and my suggestion to you, Mr. Editor, is that you take the initiative and advocate with all the vigor and earnestness that characterizes your work in other lines, the experimental or practical instruction idea as a part of our State agricultural work and in the same relation to it that the dairyman and the horticulturist at present sustains, and I would urge, too, the trimming off of a lot of red-tape ideas and confining the instruction to real and practical necessities, or, if you please, the business side of the question.

In years to come, we will then have poultry judges with a technical education, as well as a practical experience, which, when combined, will give us better talent than to-day prevails in that direction. The profession, as I have observed it, is faulty on account of so many self-made judges. Most of us want to know the basis for judgment, so that when we buy a bird that scores 93 points we may feel that the score really means something; that the conclusion is based upon existing meritorious points; that the "cuts" are justifiable from knowledge—not fancy or mere guessing. And when I buy mated birds I want to feel that the get is going to perpetuate the desirable characteristics of the parent.

I do not know of any way in which this condition of affairs may be brought about to the satisfaction of the public mind, other than through education, experimentation and practical tests in the direction of a competent instructor—one who has a solid foundation for his knowledge.—Frank B. White, in Reliable Poultry Journal.

[It will be noticed that the suggestion above is in line with the Poultry editor's ideas, as expressed in issue of September 29, 1898, under the heading of "A Timely

Society Women

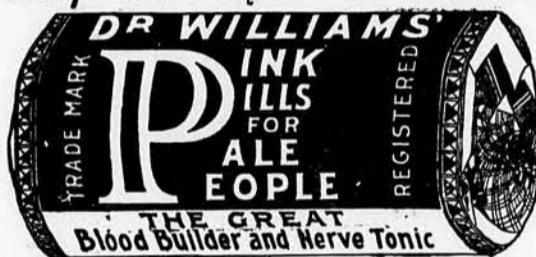
and, in fact, nearly all women who undergo a nervous strain, are compelled to regretfully watch the growing pallor of their cheeks, the coming wrinkles and thinness that become more distressing every day.

Every woman knows that ill-health is a fatal enemy to beauty and that good health gives to the plainest face an enduring attractiveness. Pure blood and strong nerves—these are the secret of health and beauty.

Dr. Williams' Pink Pills for Pale People build up and purify the blood and strengthen the nerves. To the young girl they are invaluable, to the mother they are a necessity, to the woman approaching fifty they are the best remedy that science has devised for this crisis of her life.

Mrs. Jacob Weaver, of Bushnell, Ill., is fifty-six years old. She says: "I suffered for five or six years with the trouble that comes to women at this time of life. I was much weakened, was unable, much of the time, to do my own work, and suffered beyond my power to describe. I was downhearted and melancholy. Nothing seemed to do me any good. Then I made up my mind to try Dr. Williams' Pink Pills for Pale People. I bought the first box in March, 1897, and was benefited from the start. A box and a half cured me completely, and I am now rugged and strong.—Bushnell (Ill.) Record.

The wonderful success of this remedy has led to many attempts at imitation and substitution. Be



sure that the full name is on the package. For sale at all druggists, or sent postpaid by the Dr. Williams Medicine Company, Schenectady, N.Y. Price fifty cents per box.



Article," being comments on J. B. Norton's paper on "Poultry at the Kansas Experiment Station." The second year's course of instruction at the Rhode Island station has just closed, and while a full report has not yet been published, it is safe to say that it was more successful, if possible, than the 1898 course. More applications were received than could be accommodated; and the unsuccessful ones are now booking for the 1900 course. This is just what ought to be inaugurated at the Manhattan Experiment Station.—Poultry Editor.]

Turkey Talk.

Editor Kansas Farmer:—Seeing your invitation to breeders to write for your valuable paper, I will try to write something that may be of benefit to other breeders. As the breeding season is almost here, I will speak first of

STOCK FOR BREEDERS.

I get the largest, heaviest-boned and best-marked young tom I can find, and mate with him an equal number of hens and pullets, from 10 to 15, and have never had any trouble with eggs hatching well. I had 68 young turks from 68 eggs in 1897—14 hens mated with 1 tom. When selecting hens, I take those that weigh from 18 to 20 pounds, with heavy bone, which, with me, have proved to be better

HATCH YOUR CHICKENS

in an incubator, \$7.50. Raise them in a brooder, \$6.00. Stamp for Circular. NONE-SUCH INCUBATOR CO., TERRE HAUTE, IND.

A BUSINESS INCUBATOR.

The Sure Hatch is Business. Over 500 in use. Low in price and guaranteed. Send 2-cent stamp for catalogue worth dollars if you run or want to run an incubator. It contains information not found in other catalogues or books. Address The Sure Hatch Incubator Co., Clay Center, Neb.

SHOEMAKER'S POULTRY

BOOK on and Almanac for 1899, 160 pages, 100 illustrations of Fowls, Incubators, Brooders, Poultry Houses, etc. How to raise Chickens successfully, their care, diseases and remedies. Diagrams with full descriptions of Poultry houses. All about Incubators, Brooders and thoroughbred Fowls, with lowest prices. Price only 15 cents. C. C. SHOEMAKER, Box 852, Freeport, Ill.

THE IMPROVED VICTOR Incubator

Hatches Chickens by Steam. Absolutely self-regulating. The simplest, most reliable, and cheapest first-class Hatcher in the market. Circulars FREE. GEO. ETEL CO., QUINCY, Ill.

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HAS LOST HER OCCUPATION and in the production and brooding of chicks she has been supplanted by the better and every way RELIABLE INCUBATORS and BROODERS

They Hatch and Brood when you are ready. They don't get lousy. They grow the strongest chicks and the most of them. It takes a 228-page book to tell about these machines and our Mammoth Reliable Poultry Farms. Plans for poultry houses, best way to handle, feed and market fowls, etc. RELIABLE INCB. AND BROODER CO. Box B 62, Quincy, Ill.

BE HUMANE

and remove the horns of your herd BY USING THE KEYSTONE DEHORNING of your neighbor's herd. Cuts clean on all sides, does not crush. One clip and the horns are off. Fully Warranted. Descriptive circulars FREE. A. C. BROSIUS, Cochranville, Pa. W. S. Young, McPherson, Kans., Western Agent.

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This illustration represents 2 Horse size No. 17, 6½ feet wide.

Larger sizes are *jointed and flexible* and **WORK 13½ FEET WIDE**—capacity, 3 to 4 acres per hour.

For all soils, all work—crushes, cuts, lifts, pulverizes, turns and levels. Shape and arrangement of teeth insure the cultivation of entire surface of the ground, and as they slope backward, do not turn up sod and rubbish. All metal, therefore, *indestructible*. Cheapest *riding* harrow and best pulverizer on earth.



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CATALOG FREE.

Sent on trial, to be returned at my expense if not entirely satisfactory. No pay expected in advance.

I deliver free on board at NEW YORK—CHICAGO—MINNEAPOLIS, MINN.—COLUMBUS O.—LOUISVILLE, KY.—SAN FRANCISCO and other points. PLEASE MENTION THIS PAPER. Address **DUANE H. NASH, Sole Manfr.,** MILLINGTON, N. J., or 110 W. Washington Street, CHICAGO.

mothers, better layers, and will raise as large and stronger turkeys than hens weighing from 22 to 25 pounds. Large hens are apt to lay soft-shelled eggs, and break many good eggs that they may have.

I take the largest pullets I have, which should weigh from 15 to 18 pounds, and use as near the same number as possible as I have hens. In this way I can use more females than if they were all hens or all pullets.

Pullets will commence laying earlier than hens, and lay more eggs before wanting to sit. I never try keeping two toms in the flock at the same time, as they will fight until they will kill one or the other, and often both.

When buying breeders, always get the best you can buy, as they will be the cheapest in the end, and good turkeys bring good prices.

I have been raising turkeys for ten years, and have never been able to fill the orders that have come to me for either stock or eggs; which shows that there is room for more breeders. The more there are, the greater is the demand for good stock.

GREAT INSECT-DESTROYERS.

Besides being profitable, turkeys are the greatest insect exterminators that the farmer can have. They will live on grasshoppers and green food until cold weather, when they can be fattened, if early-hatched, in three weeks ready for market.

I always keep two or three small, gentle hens for mothers, using their eggs for nest eggs and for

TRAPPING SKUNKS,

which are very bad about robbing the nests. I take two small traps and put in the nest in the evening, with an egg or two between them; then fasten traps to long poles. In the morning I go early, taking some more nest eggs with me, and by taking hold of the pole I can remove the skunk without getting any scent on myself or disturbing the nest. I then put in the nest eggs, and keep traps set for two or three nights, as I have caught as many as four skunks from one nest.

ROBT. WHITE.

Salina, Kans.

Leghorns.

Brown Leghorns have been widely known in this country for many years, and have been growing in public favor every year, until they now stand foremost as egg-producers. Laying is one of their chief characteristics, the hens being powerful machines for converting food into eggs. But this is not all; they are handsome, active, vivacious, and proud, their large, bright red combs drooping to one side, white ear-lobes, long and graceful arched necks, lithe, neat and trim bodies, plumage of variously-shaded golden brown, salmon and light brown striped and penciled with black and brown, making them very attractive. The cocks are gallant, handsome in plumage, and pleasing in carriage; their large red combs and wattles contrast admirably with their white ear-lobes, black breast, golden bay and striped neck, dark

red and golden bay striped back, greenish-black wing coverts, yellow legs, ample tail and well-curved sickles of glossy greenish-black.

From the time the Leghorns leave the shell they grow rapidly. They are hardy, active, and healthy as a rule. During moulting, when other breeds succumb more or less to the loss of feathers, they take on their new feathers quickly, and show little signs of weakness or debility. The young are very precocious; the pullets begin to lay at 4 to 5 months of age if they receive good care and treatment.

As a matter of adaptation for certain localities, there is some question. A larger fowl having a smaller comb is recommended for the farm, because there is more or less neglect in the care of fowls on the homestead, and consequently the Leghorn would suffer, and fail to do as well as it would in the hands of the fancier or villager. In this connection, it might be well to say that the rose-combed variety is less open to these objections than the single-combed variety, being much less subject to cold and freezing. Of course, this consideration has nothing to do with the merit of the breed, for no fowls will do well on the farm, or any other place, if they are not properly fed and well cared for. But if any person wants plenty of eggs to use or to sell, the Leghorn will prove the most satisfactory for this object, though not equal to some of the larger breeds, the Langshans or Cochins, for instance, in the quality of winter laying.

Leghorns, being non-sitters, do not lose time by hatching. Some sitters must be kept to do maternal duties, unless incubators and brooders are used. They commence to lay early in life, and keep it up until 3 years old. Breeds which mature early decrease in their laying capacity early in life. However, the Leghorn hen will be as profitable at 3 years of age as one of any other breed, and only in consideration of weight of flesh will it be found behind any standard breed. They will bear forcing better than almost any other breed, for they are so active and prolific that the food is soon assimilated and turned to the production of eggs.

The White Leghorns are cousins of the Browns, and differ only in color. People who fancy or prefer a white fowl will find in this variety a very handsome fowl and a perfect machine in the production of eggs.

The Buff Leghorn is the latest accession to this breed, and, while not yet fully established so as to breed perfectly true, some remarkable results have been obtained. In color, like all the other buffs, they are a rich, clear buff, the more even in surface color the better, with under color the same or a shade lighter than the surface. The requirements, however, are that the color shall be a true buff, and extend to the skin.

There are also two other sub-varieties of this class, viz., the Black Leghorn, and the silver Duck-wing Leghorn, but neither is as popular as the Browns and Whites, though they are considered excellent layers. There is no standard weight for Leghorns.

POULTRY SUPPLIES.

The Peerless brand of Crushed Oyster Shells, Bone Mills, Tarred Roofing, poultry foods and remedies, Poultry Netting, etc., etc. Write for price list to T. Lee Adams, 417 Walnut street, Kansas City, Mo.

HATCH CHICKENS BY STEAM—with the simple, perfect, self-regulating **EXCELSIOR INCUBATOR**. Thousands in successful operation. Lowest priced incubator made. **GEO. H. STAHL,** 114 to 120 S. 6th St., Quincy, Ill.

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WE SELL DIRECT TO THE FARMER. Hardened Steel Landside Double Board Plow, hard, as glass, 16-in. \$9. Sulky Plows, \$25. Riding Gang Plows, \$35. 8-in. Wagon, \$99. 1000 other articles. Big catalogue free. Write now and get ready for spring work. **H. A. PUGH'S FLOW CO.,** Box 485, Alton, Ill. Only Plow factory in the United States selling direct to farmer.

Farmer's Improved FEED COOKER is superior to all others in Safety, Durability and Cheapness of cost and operation. Scientifically constructed. Heavy cast iron lining in furnace. Boiler of heavy galvanized steel. Stands high from the floor and can be put up in the barn or summer kitchen with safety. Made in 3 sizes. Every one guaranteed or money refunded. For descriptive book and prices address **ACME MFG CO.,** Quincy, Ill.

A 12-Year Old Boy can do more and better work with this **HAND CULTIVATOR** than three men with common hoes. If no one in your town sells it, send \$1.25 for sample, delivered. **ULRICH MFG. CO.,** 46 River St., Rock Falls, Ill.

Pressure between burrs in grinding is carried on chilled roller bearings. Large inside burr revolves twice to sweep's once. Ordinary length sweep. **DAIN DOUBLE MILL** Sold under an absolute guarantee to do double the amount of work of any other mill of same size or money refunded. Write for circulars and prices. **DAIN MFG. CO.,** Carrollton, Mo.

16-35 and up. BEARING BALL Disc harrow, with or without center disc; discs 16 and 20 in., 8 sizes. Our improved 12-16 disc, \$15.99. Pay double, you get no better.	\$24.50 to 28.50 this check row Planter; drops in hills and drills; best made. Catalogue tells why. Single row corn, bean and garden planter does 19 A. a day. \$9.80 a new lever expander planter, 59c. Broadcast seeder \$1, garden drill 80c.	\$7 10 for steel lever harrow; cuts 10 ft; 50 teeth, 2 sections; also 3 & 4 sections. \$6.25 buys a 2-horse plow, turns furrow 14 in. Shipped on trial without any money.	\$2.35 Buys this Steel Beam Cultivator, plain, with 5 steel reversible shovels, spreads to 35 in. A 2-h Cultivator, made of best material, Steel Wheels, and all complete \$10.95. Riding cultivator \$16.99. Double shovel plow \$1.50. Largest line of cultivators ever offered.	\$6.00 for this Single Harness. Cut from No. 1 oak-tanned leather; 1 in. traces. Retail price, \$12; our price \$6—a bargain. Double team harness, 1½-in. traces, \$12.99. All kinds harness.
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Send for our FREE 320-Page Spring Agricultural Catalog. **Marvin Smith Co.,** 55-57-59 N. Jefferson St., U35, Chicago.

Since 1875 Iron Age implements have been steadily perfected—working out mechanical ideas that have lifted many burdens from overworked farmers. A step in advance is ready—the new No. 7 Iron Age Horse Hoe and Cultivator. Has a new lever expander which gives perfect rigidity at whatever point the tool is set. Thoroughly tested in shop and field.

Iron Age Ideas

Send for the Iron Age Book for 1899 (sent free) and read the full description of the No. 7 Horse Hoe. Combines all the good features of lever-expander and old-style clamp expander. Blades quickly and finely adjusted. Send your name on a postal. Distributing points conveniently located. **HATEMAN MFG. CO.,** Box 117, Greenloch, N. J.

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When it comes to buying a vehicle of any kind you may just as well save all the money in the transaction above the manufacturer's price. No need to pay added commissions and expenses of traveling salesmen, middlemen, dealers, agents, etc.

WE HAVE NO AGENTS but sell direct from our factory at wholesale prices. We are the largest manufacturers of vehicles and harness in the world selling to the consumer exclusively.

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SEND FOR LARGE FREE CATALOGUE.

ELKHART HARNESS AND CARRIAGE MANFG. CO. W. B. Pratt, Secy. ELKHART, INDIANA.

MARKET REPORTS.

Kansas City Live Stock. Kansas City, Feb. 20.—Cattle—Receipts since Saturday, 3,748; calves, 25; shipped Saturday, 1,282 cattle; 72 calves. The market was steady to 10c lower. The following are representative sales:

Table with columns: DRESSED BEEF AND SHIPPING STEERS, No., Ave. Price, No., Ave. Price.

Table with columns: WESTERN STEERS, No., Ave. Price, No., Ave. Price.

Table with columns: NATIVE HEIFERS, No., Ave. Price, No., Ave. Price.

Table with columns: NATIVE COWS, No., Ave. Price, No., Ave. Price.

Table with columns: NATIVE FEEDERS, No., Ave. Price, No., Ave. Price.

Table with columns: NATIVE STOCKERS, No., Ave. Price, No., Ave. Price.

Hogs—Receipts since Saturday, 8,267; shipped Saturday, 373. The market was 5 to 10c lower; lightweights mostly 10c lower. The following are representative sales:

Table with columns: Hogs, No., Price, No., Price.

Sheep—Receipts since Saturday, 5,040; shipped Saturday, none. The market was steady to 10c lower. The following are representative sales:

Table with columns: Sheep, No., Price, No., Price.

St. Louis Live Stock. St. Louis, Feb. 20.—Cattle—Receipts, 2,800; natives steady to strong, Texans lower; native shipping and export steers, \$4.60@5.00. Light and dressed beef and butcher steers, \$3.25@3.50; stockers and feeders, \$3.55@4.75; cows and mixed, \$4.25@4.50; Texas and Indian steers, \$3.25@4.00; cows and heifers, \$2.75@3.65.

Hogs—Receipts, 8,000; market 5c lower; pigs and light, \$3.45@3.65; packers, \$3.50@3.70; butchers, \$3.65@3.80.

Sheep—Receipts, 2,500; market steady; native muttons, \$3.50@4.25.

Chicago Live Stock. Chicago, Feb. 20.—Cattle—Receipts, 19,000; market 15c lower; beefs, \$3.75@5.85; cows and heifers, \$1.75@4.75; stockers and feeders, \$3.50@4.70.

Hogs—Receipts, 40,000; market weak, 5 to 10c lower. Mixed and butchers, \$3.55@3.75; good heavy, \$3.65@3.75; rough heavy, \$3.45@3.55; light, \$3.45@3.70.

Sheep—Receipts, 20,000; market steady; natives, \$2.80@4.40; lambs, \$4.00@5.00.

Chicago Grain and Provisions.

Table with columns: Feb. 20, Opened, High'st, Low'st, Closing.

Kansas City Grain.

Kansas City, Feb. 20.—Wheat—Receipts here to-day were 105 cars; a week ago, 65 cars; a year ago, 263 cars. Sales by sample on track: Hard, No. 2, 65@67 1/2c; No. 3 hard, 63@64 1/2c; No. 4 hard, 60@63c; rejected hard, 61@62c. Soft, No. 2 red, 72@73c; No. 3 red, 69@72 1/2c. Spring, No. 2, 63@65c; No. 3 spring, 62@63c.

Corn—Receipts here to-day were 27 cars; a week ago, 40 cars; a year ago, 167 cars. Sales by sample on track: Mixed, No. 2, 32 1/2@33c; No. 3 mixed, 32c; No. 4 mixed nominally 31 1/2@32c; no grade, nominally 31c. W. e. No. 2, nominally 33c; No. 3 white, 32 1/2c.

Oats—Receipts here to-day were 19 cars; a week ago, 13 cars; a year ago, 19 cars. Sales by sample on track: Mixed, No. 2, 28 1/2@28 3/4c; No. 3 mixed, nominally 27 1/2c; No. 4 mixed, 27 1/2c. White, No. 2, 30 1/2c; No. 3 white, nominally 29 1/2c; No. 4 white, nominally 28c.

Rye—No. 2, 55 1/2c; No. 3, 54c; No. 4, nominally 53c.

Hay—Receipts here to-day were 73 cars; a week ago, 73 cars; a year ago, 57 cars. Quotations are: Choice prairie, \$7.75@7.00; No. 1, \$6.00@6.50. Timothy, choice, \$7.00@7.50. Clover, pure, \$6.50@7.00. Alfalfa, \$7.00@7.50.

Kansas City Produce.

Kansas City, Feb. 20.—Eggs—Strictly fresh, 18 1/2c per doz.

Butter—Extra fancy separator, 21c; firsts, 18 1/2c; seconds, 16c; dairy packed, 17c; country roll, 12@14c; store packed, 10c; packing stock, 9c.

Poultry—Hens, 7c; springs, 8 1/2c; old roosters, 15c each; young roosters, 20c; ducks, 7 1/2c;

geese, 5@6c; turkeys, hens, 8 1/2c; young toms, 8c; old toms, 7c; pigeons, 50c per doz. Vegetables—Navy beans, \$1.35 per bu. Lima beans, 4 1/2c per lb. Onions, red globe, 90c@1.00 per bu.; white globe, \$1.00 per bu. Beets, home grown, 80c per bu. Turnips, home grown, 15@25c per bu. Potatoes—Mixed varieties, 45@50c.

TOO LATE TO CLASSIFY.

FOR SALE—Three registered Percheron stallions. From 2 to 4 years old. For description and price address H. O. Peck, Wellington, Kans.

FOR RENT—Thirty acres rich bottom land; house, wood and garden, team and implements furnished. Share rent. 100 acres plow land for cash rent. Call or write O. P. Updegraff, 311 West Seventh St., Topeka, Kans.

FLOWER SEEDS FREE—Five packets of choice flower seeds sent for names and addresses of five farmers. Address L. H. Cobb, Florist and Seedsman, Linn, Kans.

BARRED PLYMOUTH ROCKS.

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

THIS SPACE WAS WON AS A PREMIUM

By the Best Pen of Buff Cochins at the Kansas State Show, 1899. Eggs, \$2.50 to \$5 per sitting. Write for circular. Chas. Steinberger, North Topeka, Kans.

FIVE-ACRE TRUCK FARM ON KAW RIVER bottom, near Grover Station, in Douglas County; also \$30 worth of personal property, team, cow, household goods, feed, etc. For hundred dollars spot cash takes it with quitclaim deed. No trade wanted. Address H. C. Allen, Big Springs, Kans.

BY MAIL—Strong, well-rooted plants, carnations, fuchsias, coleus, choice kinds of geraniums, roses, etc. Safe arrival and satisfaction guaranteed. Lists free. Samples, 20 for 6c (if stamps, 2-cent only). Tyra Montgomery, Larned, Kans.

R. H. WILLIAMS, Wholesale and Retail Groceries, 537-539-541-543 and 1015 Main Street, KANSAS CITY, MO. Largest mail-order grocery house in the West. Send for our March catalogue. Free. Contains groceries, hardware, drugs and farm supplies. Wholesale prices direct to the consumer in large or small quantities. No charge for packing or drayage.

THIS COMMON SENSE SWEET POTATO PLANTER is guaranteed to do more and better work on all kinds of soil than any other planter on the market. Address OSCAR KUEHNE, Oakland, Kans. Reference: J. B. Debacker and D. Childs.

Do You want to plant Kansas-grown trees? If you Believe in planting trees that will stand drought and hot winds of western Kansas and Oklahoma Territory buy trees grown in the great Arkansas Valley. We have a full line of fruit trees, vines, and plants at prices and of quality found to bring Expansion in trade. A good stock of ornamentals, including a choice collection of monthly roses. Address..... ARKANSAS CITY NURSERIES, Arkansas City, Kan.

GYCLONE FENCE MACHINE Builds 100 RODS of strongest fence a day, 27 to 60 inches high, 7 to 12 cables. Easy to build and cheap. Thousands in use. Fence material at wholesale prices. Write for catalogue. GYCLONE FENCE CO., HOLLY, MICH. Branches: Waukegan, Ill., Cleveland, Ohio, Toronto, Can., Melbourne, Australia.

We make Steel Windmills, Steel Towers and Feed Grinders and are selling them cheaper than the cheapest. Our productions are standards; are first-class in every respect and are sold on trial. Send us a postal and we will tell you all about them. CURRIE WINDMILL CO., AGENTS WANTED. Manhattan, Kans.

Our FENCE MACHINES Make this and many other styles of Fence. \$10 PAYS FOR DELIVERING A MACHINE AT YOUR STATION. We have Lawn Fencing, Farm and Yard Gates, also Wire, Ratchets, &c. Full information for postal. Box J, Eureka Fence Co., Richmond, Ind.

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TOWERS' SURFACE CULTIVATORS. Both Riding and Walking—a Complete Success. They "Cultivate shallow," "Pulverize ground fine," "Preserve moisture," "Keep ground cleaner," "Handle easier," "Draw lighter," Kill more cockleburrs, morning-glories, barn-grass, and raise more corn than any other cultivator made. A bonanza to farmers. A tool that pays the rent. Send for Treatise on Corn Culture, and discount to introduce, where we have no agent. J. D. TOWER & BRO., 14th St., Mendota, Ill.

Don't Pay Three Profits If you are going to pay for a carriage why not pay the least you can for the best vehicle? Get all you can in material and workmanship—pay as little as you can for handling and "extras." You save the jobber's commission and the retailer's profit when you buy direct from the factory. You pay the cost of making with one moderate profit added. We are not agents, but manufacturers of buggies, carriages, surreys, phaetons, wagons, harness and horse accessories. Everything guaranteed. With our illustrated catalogue you can order easily and safely. If what you order does not suit, send it back and we will pay the freight both ways. First, get the catalogue. You are welcome to a copy. THE COLUMBUS CARRIAGE & HARNESS COMPANY, COLUMBUS, O.

HALL'S STEEL WIRE FARM FENCE The strongest, most durable and best fence on the market, being constructed of the best heavy galvanized steel wire, with a heavy cable at top and a barbed wire at the bottom. The only fence on the market that a hog cannot root under. Manufactured by J. W. D. HALL, St. Joseph, Mo.

THE UNIVERSAL REPAIR MACHINE FOR FARMERS AND MECHANICS. Vise, Drill, Anvil, Tool Grinder, Pipe Clamp and Cut-off. ONCE SHOWN, SELLS ITSELF. For particulars, enclose stamp, and mention this paper Address. BLOOMFIELD MFG. CO., BLOOMFIELD, IND. Salesmen Wanted.

HORSE-HIGH With our Duplex Automatic Fence Machine you can make 100 styles of fence at the rate of 60 rods a day. Every rod of it will possess the three leading attributes made prominent in this ad. Makes a perfect general purpose fence at 18c per rod. Poultry fence 15c per rod. Rabbit-proof fence for nurseries, orchards, etc., 16c per rod, and a good hog fence for 13c per rod. Plain, coiled spring and barbed wire to farmers at wholesale price. Get our free catalogue before buying wire or fencing. KITSELMAN BROS., Box 64, Ridgeville, Ind. PIG-TIGHT

IT IS ECONOMY to own a mill with which to do all kinds of grinding for stock feed and family use, and especially one that does not continually require expense for new grinding plates and small parts. Our French Burr Mills are durable, economical, efficient and practical. Just the mill for farm uses. Easiest kept in order and no expense. Send for new book on Mills and sample meal. NORDYKE & MARION CO., Flour Mill Builders, 285 Day St., Indianapolis, Ind.

ARE YOU WITH US? THE DEALER IS AGAINST US because we sell you wire fence direct from the factory at wholesale prices. The dealer does not give you a better fence than we do, but he charges you more for it. You can buy the ADVANCE FENCE direct from us just as cheap as the dealer can. That makes a saving that will amount to something nice. A postal card will bring you circulars and prices. ADVANCE FENCE COMPANY, 4102 Old Street, Peoria, Ill.

The Blue Valley Sweep Feed Mills Ladies Our Monthly Regulator never falls. Box FREE. Dr. F. May, Bloomington, Ill.

A Picture of Sugar Estates in Cuba Half a Century Ago.

Coffee plantations, though so beautiful, have not increased in numbers of late years; in fact, many of them have been changed into sugar estates, which are more profitable, and render the owner socially more important, says a writer in the Century. The owner usually resides in Havana, where his family may enjoy the pleasures of cultivated society and have the luxuries of a city; he, therefore, employs a sort of middle-man, called a major-domo, to manage his estate. The owner wants all the money he can get to maintain his establishment in Havana, and the major-domo seeks to increase his percentage, and thus the poor slaves are ground to the dust, and at times the cruelties practiced are barbarous. The mayorals are usually Canary Islanders, a hot-tempered and cruel race, and, being without the restraint of the presence of the owner, are vindictively oppressive, and in their inhuman punishments often take life. The horrors which have been perpetrated in Cuba by the lash would disgrace barbarians.

One striking fact, attesting the hardships on a sugar estate, is that children are very rarely seen there. Slave men in their vigor are more profitable, and hence in a large force of several hundred men only a few women are allowed. The labors and hardships which these women endure tend to prevent increase, and the few children born usually die in infancy from neglect. There is no care taken to prevent this result, as they say it is cheaper to supply the losses on the plantations by new importations than by the rearing of children. The climate, fortunately, is so mild that the slaves need but little clothing, and a wide palm hat and a cloth about the loins are their costume in the fields, the sun seeming to have but little effect upon their black skins.

Every week there is a ration day, in which they are drawn up in long lines, and a few pounds of black-looking beef, brought from Buenos Ayres, are thrown at the feet of each, which at night each cooks to suit himself. In addition, a coarse meal or small hominy (bran and all) is boiled and put in a trough, from which they eat it every morning with a spoon, a paddle or their hands, as they choose.

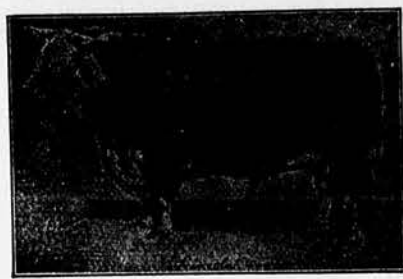
The Africans brought up in Cuba are generally from the coast of Mozambique, and are large, stout men, of dogged will, and at times are very obstinate.

All these creatures believe implicitly in the transmigration of souls, and that if they commit suicide, they go immediately back to Africa. To check this evil, when a suicide occurs, the mayoral makes each of the slaves bring a bundle of wood and build a funeral pyre, on which the body is burned. The ashes are then scattered in the air by the survivors, in whose opinion the dead negro's soul is thus prevented from returning to Africa. In scattering the ashes they sigh audibly "Aha, aha," as if expressing grief that the soul of their companion can no longer go home.

The appearance of the sugar estates is the very opposite of the beautiful coffee plantations. Wide fields of monotonous green stretch themselves to the horizon on every side, while here and there the royal palm lifts its tufted head above the verdant level. The mayoral's house, the sugar works and the dingy barracoons for the slaves are the only objects to break the monotony of the desolate scene. When first planted, the cane is laid lengthwise in trenches, or furrows, about five or six feet apart, and then covered. From each eye (there is an eye to each sound joint) a shoot springs up, and sends out others, forming a bunch of canes, and thus the fields are covered with the most luxuriant green.

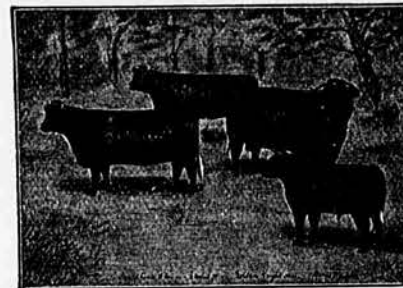
Every year the crop is cut at the ground, and the next season another crop springs up from the roots, which are called ratoons. These ratoons will yield crops in this way for several years, the length of time depending on the mildness of the climate. In Louisiana only three or four crops are gathered from one planting, while in the tropics eighteen or twenty are thus obtained. The grinding of the cane begins about the last of October, and continues until the beginning of the rainy season, a period of nearly six months. This is the time of greatest labor on the estate, and, without intermission of Sundays or holidays, with but few exceptions, the slaves work incessantly, and men and teams are worn out before work is over. The slaves are given a few trifling presents, and are allowed some extra privileges to encourage them in undergoing the increased labor.

BLOCKS OF THREE.—Two new subscriptions for one year for \$2, and, in addition, a renewal for one year free to any old subscriber who sends two new subscriptions and \$2 in one order. Kansas Farmer Co., Topeka, Kas.



SPRING VALLEY HEREFORDS.

Lincoln 47065 by Beau Real, and Klondyke 42001, at the head of the herd. Young stock of fine quality and extra breeding for sale. Personal inspection invited. ALBERT DILLON, Hope, Kas.



CEDAR HILL FARM.

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



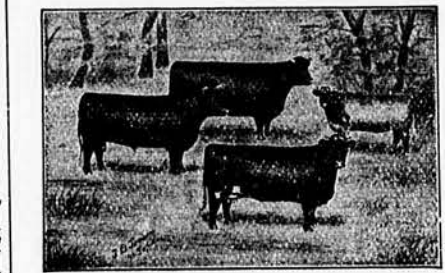
GLENDALE SHORT-HORNS, Ottawa, Kas.

Leading Scotch and Scotch-topped American families compose the herd, headed by the Cruickshank bulls, Glendon 119370, by Ambassador, dam Galan thus, and Scotland's Charm 127284, by Imp. Lavender Lad, dam by Imp. Baron Cruickshank. Young bulls for sale. C. F. WOLF & SON, Proprietors.

ELDER LAWN HERD SHORT-HORNS.



THE Harris bred bull, GALLANT KNIGHT 124466, a son of Gallahad, out of 8th Linwood Golden Drop, heads herd. Females by the Cruickshank bulls, Imp. Thistle Top 88876, Earl of Gloster 74523, etc. Size, color, constitution and feeding qualities the standard. A few good cows for sale now bred to Gallant Knight. Address T. K. TOMSON & SONS, DOVER, KANSAS.



SHORT-HORN CATTLE.

I have combined with my herd the Chambers Short-horns and have the very best blood lines of the Bates and Cruickshank families. Herd headed by Baron Flower 114352 and Kirklevington Duke of Shannon Hill 126104. The Cruickshank Ambassador 110811 lately in service. Best of shipping facilities on the A. T. & S. F. and two branches of Mo. Pac. Rys. Parties met by appointment. B. W. GOWDY, Garnett, Kas.

Cows' Teats Sore?

Advice Free. MOORE BROS., V. S., Albany, N. Y.



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THE AMERICAN GALLOWAY BREEDERS' ASSOCIATION

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

FRANK B. HEARNE, Secretary, Independence, Mo.

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The Prize-winning Herd of the Great West. Seven prizes at the World's Fair; eleven firsts at the Kansas District fair, 1893; twelve firsts at Kansas State fair, 1894; ten first and seven second at Kansas State fair, 1895. The home of the greatest breeding and prize-winning boars in the West, such as Banner Boy 2841, Black Joe 28608, World Beater and King Hadley. For Sale, an extra choice lot of richly-bred, well-marked pigs by these noted sires and out of thirty-five extra large, richly-bred sows. Inspection or correspondence invited

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