

KANSAS FARMER

TOPEKA, KANSAS, THURSDAY, JANUARY 15, 1903.

Established 1863. \$1 a Year

Volume XLI. Number 3.

KANSAS FARMER.

Established in 1863.

Published every Thursday by the
KANSAS FARMER CO., - - TOPEKA, KANSAS
 E. B. COWGILL.....President
 J. B. MCAREE.....Vice President
 D. C. NELLIS.....Secretary and Treasurer
SUBSCRIPTION PRICE: \$1.00 A YEAR
 E. B. COWGILL.....Editor
 I. D. GRAHAM.....Associate Editor
 H. A. HEATH.....Advertising Manager
 Entered at the Topeka, Kansas, postoffice as second-class matter.



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BLOCKS OF TWO.

The regular subscription price for the KANSAS FARMER is one dollar a year. That it is worth the money is attested by the fact that thousands have for many years been paying the price and found it profitable. But the publishers have determined to make it possible to secure the paper at half price. While the subscription price will remain at one dollar a year, every old subscriber is authorized to send his own renewal for one year and one new subscription for one year with one dollar to pay for both. In like manner two new subscribers will be entered, both for one year, for one dollar. Address, Kansas Farmer Company, Topeka, Kansas.

The stockmen of Geary County, Kansas, have organized an association for the promotion of their mutual interests. They can accomplish much by such organization, just how much is not known, since no association has yet reached the limits of the possible good it may do to its members by combined effort.

D. P. Norton, the veteran Shorthorn breeder, Dunlap, Morris County, in sending letter on Bermuda grass published in another column, says: "It would make grand pasture if it would not kill by freezing. Stock and chickens are very fond of it. It will grow from the points, the runners spread rapidly and joints from or on the runners will take root, and it is the most lovely lawn grass I ever saw. I suspect bromé-grass will be a great success here for pasture and there must be a change of some kind."

The ranks of agricultural journalism have been recently reinforced by the addition of Prof. E. E. Faville, formerly of the horticultural department of the State Agricultural College at Manhattan, and later, as president of a large private college in Pennsylvania. Prof. Faville began editorial work on the Farmer's Tribune of Des Moines, Iowa, and is the founder of Successful Farming, just established since the first of the year in that city. Although Prof. Faville remained in the Kansas Agricultural College a comparatively short time, he made many friends who will join with us in wishing him well in his new venture.

THE STATE HORTICULTURISTS.

We publish in this number of the KANSAS FARMER the papers read at the annual meeting of the Kansas State Horticultural Society. If any have been omitted it is because the writers failed to deliver copies to the secretary. We were unable to reproduce the stenographer's report of the discussions on account of the late date at which it was completed. These horticultural papers are of great value, showing, as they do, the present state of advancement of horticulture in Kansas. It will be well to preserve this number of the KANSAS FARMER, since the State publication of these proceedings will not be made until 1904.

The last year was one of great prosperity, especially to the apple-grower. The editor has reports of \$58 an acre, net, for one block of young Jonathan apple-trees and of \$60 an acre for a block of young Missouri Pippins.

Indications point to the planting of many thousands of acres of apples in Kansas, especially in the northeastern section of the State, during the next few years. There is no risk in saying that the investment will be a good one. The diversification of the horticulture of Kansas is proceeding with conservatism but with gratifying rapidity. The great increase in the demand for small fruits is giving the producers of these later-day necessities an ever increasing prominence.

The geometrical increase of urban populations seems likely to have no end, but rather to be accelerated year by year. This increase is reflected in the increased demand for horticultural products. While there will doubtless be, in the future as in the past, an occasional dull year for the horticulturist, the outlook in general is most encouraging, making horticulture a more and more attractive occupation for the young-man of energy and knowledge of the business.

This, doubtless, accounts for the increasing numbers of young men in the State Horticultural Society. The old men, who have for so many years borne the heat and burden of the day in Kansas horticulture, will be enabled at any time to turn the work over to younger and stronger hands, if, indeed, they shall not be crowded into the background by the aggressiveness of their young and progressive competitors.

APPROPRIATIONS.

Whatever else the Legislature does or leaves undone, it never fails to make the appropriations. It has been proclaimed from every platform in Kansas that this is a great, prosperous, and rich State; that it produces abounding wealth from the greatest original source, the soil. The State has planted many public institutions which it supports from the revenues gathered from the producers. Most of these institutions are pointed to proudly, as evidencing our ability to provide them and our willingness to care for them. The cynic may have said that much of this pointing is done by those who draw the salaries in the institutions and by those who furnish supplies and receive tax-money therefor. But the cynic must not be taken too seriously. Kansas public institutions are worth all they cost. Kansas gets, in most instances, pretty fair values for the money she spends.

The questions, How much shall she spend? how much can she afford to spend? how shall it be apportioned? come before every Legislature with regularity and persistence. It has been said that the power to tax is the most dangerous power possessed by Government. The people are ever jealous of the use of this power and they will hold to account any party that, having a majority of the Legislature, shall abuse this taxing power. But "Kansas is rich!" "Kansas has produced so many millions of dollars worth of wealth this season," is the reflection of those who will press upon the Legislature the various appropriations.

The Ways and Means Committee will have, figuratively, to stand guard over the treasury from the day of its appointment to the close of the ses-

sion. Among all the demands for appropriations that ought to be made will come demands for appropriations that ought not to be made, for enlargements of appropriations already large enough, and for downright steals from the people's treasury.

The KANSAS FARMER does not propose to designate the line between the good and the bad appropriations but rather to speak of a few which are in the nature of investments rather than expenditures.

In providing educational institutions, no State has ever found that it had over-invested. The best investment any family ever made was that which promoted the development of the capabilities of its sons and daughters. The best investment any State ever made was that which provided the opportunities for such development.

Kansas' leading educational institutions, other than charities, consist of the State University, the State Agricultural College, and the State Normal schools. True but a small percentage of the youths of the State avail themselves of the opportunities furnished by these schools. If these were sent to Eastern schools the extra cost would probably exceed the cost of maintenance of the home institutions. The productive power of Kansas would have to provide this money to be expended in other States, and, somehow, under our complex commercial organization, all such expenses are saddled back upon the producers, if not in the way of taxes, then in some other way.

But the material reason for the maintenance of educational institutions is that it pays in promoting the effectiveness of the future citizens. If the people of the Philippines were capable of using such educational advantages as Kansas possesses, and if they could provide them at an expenditure of half of their possessions, the remaining half would be made worth more in dollars and cents than their entire possessions are worth now.

Kansas' educational institutions have not asked more than the State can afford to invest in that kind of means for advancement of her material interests, to say nothing of the promotion of the development that can not be measured in money.

Kansas has now two institutions in which every dollar wisely invested is likely to return many dollars in the material advancement of the State.

Since 1887 the United States has paid \$15,000 a year for the maintenance of an agricultural experiment station at Manhattan. A good deal of valuable work has been done in determining problems too expensive for the farmer to experiment with. The \$15,000 a year from the United States continues and will support about the same amount of experimental work as heretofore.

Quite recently the State has acquired a magnificent tract for an experiment station, namely, the old Fort Hays reservation. It is admirably adapted for the work that needs to be done with especial reference to conditions in the western half of the State.

Within the last few years agricultural science has discovered that farm-plants—corn, wheat, oats, the forage-crops, including all grasses—indeed, everything that grows, is as capable of improvement by breeding as are cattle, horses, swine, sheep, and other animals. In this improvement the plant-breeder is able to so modify his plants as to adapt them, in some measure, to the peculiarities of the soil and

(Continued on page 56.)

The Kansas State Horticultural Society.

Thirty-sixth annual Meeting, Held at the Rooms of the Society, Capitol Building, Topeka, Dec. 29, 30, 31, 1902

Report Third District.

F. L. KENOYER, INDEPENDENCE, KANS.

The past year was about an average one for profit to the southeast Kansas horticulturist. What was lacking in yield was largely made up in the increased prices received for the products.

The unprecedented dry, hot summer of last year was reversed this year and we had the wettest and coolest summer on record for the past thirty-two years. What fruit plantations lost by the severity of last year's drouth, they in some measure regained by the opposite conditions of the past season.

Strawberries yielded less than a half crop on account of the poor stand of plants. Few plants were made during the drouth, and about one-half of those were killed in the winter. The first severe freezing came before the plants were mulched, and they would not stand being frozen solid when their roots were in dry dirt. The plants that survived the winter bore a heavy crop of the finest of berries that brought top of the market prices.

Blackberries were practically a failure. Many neglected plantations were killed outright by the drouth. What remained passed through the winter in fine shape. These bloomed heavily but only the first few berries that set formed fruit. All the remaining berries, blossoms, and blossom buds were blighted. Most growers attribute this to the weakened vitality of the canes from the effects of the drouth. This is surely a mistake. The fruiting canes grew on vigorously to the end of the bearing season, and I have never known blackberry canes to have vitality enough to bloom that did not develop their fruit. Canes that come out in the spring with scarcely any vitality left, frequently are loaded with berries. This year blackberries bloomed before the close of the twelve-months drouth. After the first berries had formed we had two days of high drying wind. Within two days after these windy days all the younger berries and the pistils in blossoms and buds had turned brown and failed to develop into fruit, or formed fruit that was so deformed as to be worthless. The dewberry crop was injured in the same way as the blackberry but not so badly.

The black raspberries bore a full crop of perfect fruit. Kansas and Cumberland are our hardiest and most productive varieties.

The Loudon is the only true red sort that survived the winter. It bore a heavy crop of large, luscious berries. The Cardinal, which is a cross between the red and black raspberry, is rapidly coming to the front as one of our hardiest and best raspberries. The Cardinals and Loudons sold last year at 20 cents per box, while black sorts brought 12½ cents.

Grape vines were badly injured by the drouth, which reduced the crop of fruit about one-half. Concord stood the drouth best of all varieties.

We had a heavy crop of Early Richmond cherries. Later varieties failed. Peaches were a fairly good crop with prices for all grades averaging over \$1 per bushel.

Pears were about an average crop. The apple crop was large, with the exception of Ben Davis; but the fruit ripened too early to keep well and most of them had to be sold as fall apples.

The outlook for next season's fruit crop was never brighter at this time of the year. Strawberries made more plants than I have known them to make before. Most patches are too thick, but the plants are all stocky and well rooted. Few of them are mulched yet. The ground has been too wet and mirey for the work until last Friday when it froze sufficiently to bear a team and wagon. The summer was too wet and cool for blackberries and raspberries to make as heavy cane growth as usual, but they promise well for an abundant crop next season.

The buds of all tree fruits are in

good condition. From present prospect the fruit-growers have reason to expect a bountiful harvest in 1903.

The population in the gas belt is increasing so rapidly that the horticulturists of southeast Kansas need not fear an overproduction of fruits for years to come. There promises to be a large acreage of tree and berry fruits set in the spring.

Report of Fifth District.

WILLIAM CUTTER, JUNCTION CITY.

As trustee of the Fifth district, I have to report rather an unsuccessful fruit crop.

Small fruits of all kinds were very unsatisfactory. Owing to the severe drouth of the previous year which was followed by plenty of rain through September and October. This started the berry plants not already killed into a late fall growth which made them an easy victim to the cold of winter. What little irrigating was done was a success.

Grapes were a fair crop except where damaged by the direct rays of the sun the year before. Our native plums, Wild Goose, Miner, Desoto, etc., bore a good crop. We had very few Europeans, and as usual no Japans.

Peaches were an entire failure from the same cause that affected small fruits. The mercury only dropped to six degrees below zero, but it was too much for the unmaturing condition of the buds. Apples were not over a third of a crop; those orchards that did not overbear the previous year bore a fine crop.

But fruit was scattering and very wormy in most orchards. Some fruit is keeping well; while wormy, as usual, is rotting badly.

Our prospects for tree-fruits next year is good, wood and buds appear to be sound and well matured, and our coldest night, so far, two degrees below zero, appears to have had no bad effects.

Orchard Treatment.

E. E. YAGGY, HUTCHISON, KANS.

In responding to the subject assigned me by your secretary, I have decided to restrict myself to remarks on treatment of apple orchards, as our experience has been limited in a greater degree in other fruits, though we are attempting to raise peaches and pears on a commercial scale.

In discussing the very comprehensive subject of orchard treatment we make the general assumption that the desire of all fruit-growers is the almighty dollar. That the vocation has its aesthetic pleasures is undeniable. We believe it to be equally true that the important item of profits is sometimes obscured in the enjoyment of these pleasures. Nothing in nature is more promising in the eye of the fruit-grower than a thrifty, vigorous orchard in its spring growth; nothing more beautiful than the myriads of red apples gleaming in the October sun; yet when allowance has been made for the ravages of codling moth and curculio; of bitter rot and all the other rots; when picking, packing, packages, freight and storage charges have been met, all to encounter markets glutted hopelessly with inferior stuff, we can not be very much surprised if our returns do not reach the wonderful figures held forth by nurserymen and fruit journals.

There is some truth in the observation that any fool can grow fruit, but it takes a wise man to market it. It might almost be said that the fruit-growers' financial success is in direct proportion to his knowledge of the market for his particular fruit. Two years ago one of the largest apple handlers in this country had 1,000 boxes of Colorado Grimes's Golden which he sold in Chicago for \$4.00 per bushel box; his manager told me that the grower received just 50 cents per bushel for this identical fruit. Assuming that the orchardist has patience, skill and energy, that his soil and climatic conditions are adapted to fruit-growing, that his shipping facilities are good, and that he can secure plenty of competent labor at a reasonable

figure, we believe his particular manner of treating his orchard will depend chiefly upon the conditions under which he has to market his fruit. If he finds that the market will absorb his No. 2 fruit at a fair profit, and that his culls can be turned into by-products which yield returns above cost of production, it is not necessary for him to invest so heavily in intense culture as his competitor, whose experience is that No. 1 fruit only brings profits. If he has faith in the continued supremacy of the big red cork he will continue planting Ben Davis trees; but if he finds that Eastern and foreign markets prefer Oregon Spitzenberg, California Bellflower and Pearmain, Idaho Gloria Mundi, and Colorado Jonathan, at two to three dollars per bushel and at higher freight rate, while his Ben Davis and other "barrel-fillers" are going begging for a purchaser at 40 cents per bushel, he will probably find that all the cultivating, spraying, and fertilizing in the world will not make his big, red cork very profitable. He may even go so far as to graft his Ben Davis over to some quality apple that he may compete with his more far-seeing brother fruit-grower of the far West. In other words in this day of large commercial planting of two or three varieties we believe that more than ever before attention and care should be given to what has been called "quality fruit." The market has never been glutted with No. 1 Jonathan or even No. 1 Winesap; and as quality fruit finds a ready market at higher prices, one is justified in making a larger investment annually in the care of an orchard of the better varieties than he would be in an orchard of the cork-producing varieties.

Assuming then that we are all more or less familiar with market conditions, that our varieties are all more or less profitable, we have simply to follow the lead of progressive orchard men and the invaluable suggestions of our professional horticulturists, endeavoring always to do good thorough work with the greatest possible economy. Our policy for the next few years will be to raise only No. 1 fruit. We expect to have heavy running expenses, but we hope to reach market with fruit that will justify such expenses. We shall try to follow the example of Mr. Roland Morrill, of Benton Harbor, Mich., in cultivation, namely, keeping our orchard in fine, pulverized dust mulch up to the last of July, with not a weed or spear of grass showing anywhere. We use light draft gang plow in early spring, followed by disc-harrow, Acme harrow, spring tooth harrow, and lastly by weeder which covers thirteen feet and requires only one horse. To get good results from your weeder the orchard must be free from weeds, clods, and rubbish. The orchard must be gone over every five days with a weeder, but three weeders will cultivate 100 acres of orchard per day very easily and you have a perfect dust mulch at all times. We cease cultivating from July 15 to August 1, when wild grasses make enough growth to form a natural mulch for winter.

As the orchard gets well into bearing we ease up on the cultivation somewhat and apply barnyard manure, straw, etc., for mulch, always making sure that the trees make a fair growth even when in good bearing. In passing we desire to state that in our experience the Acme harrow is by all odds the most indispensable of orchard implements. If your ground is reasonably clean it does beautiful work, pulverizing clods and hard crusty ground, destroying weeds and leveling the orchard.

So far we have sprayed only with Morrill and Morley's hand pump, using 250-gallon wagon-tanks, twelve-foot extension rods, and double Vermorel

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nozzles. Next spring we shall experiment with 1½-horsepower gasoline engines mounted on trucks with 360-gallon galvanized iron tank with four lines of hose and double nozzles attached. Such an outfit will cost about \$250, complete, but we believe that expense will be compensated by the much finer spray resulting from the greater pressure, and also by the fact that with the power generated by the engine you can secure good vigorous agitation in the spraying solution by the use of a return pipe. We believe thoroughly in the dust spray for a country where the dew falls with regularity, but in this region we are obliged to use liquid spray even though it be far more laborious, expensive, and troublesome in general. We prefer the arsenate of soda solution as an insecticide, and use the 5-5-50 solution of Bordeaux mixture. We usually spray four times in bearing orchard and only twice in orchard not yet bearing. In combating the codling moth we band our trees and also rake the early windfalls out from under the trees and burn them, although we have not a great deal of faith in this latter measure, as the windfalls do not seem to contain above a small percentage of the worms.

We follow the California model in shaping our trees, endeavoring to get low heads, fairly full bodies; prune only to the extent of removing cross limbs and suckers; prune only in March and paint all wounds larger than three-quarters of an inch in diameter. We apply bone dust and wood ashes to bearing orchard where the variety is of sufficiently good quality to bring fancy prices and has inclination to overbear.

We plant no varieties that are subject to blight, and have on this account rejected Clayton, Smith Cider, Yellow Transparent, and others. In closing we believe with Mr. L. A. Goodman, of Missouri is making an orchard pay. If trees are old enough to bear and show a hesitancy in the matter, just force them to it by girdling if necessary. Cultivate, prune, spray, fertilize, graft, and even girdle if necessary, and if you still fail to get fruit a nice double-bitted ax is in order.

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Orchard Success in Kansas.

EARL MILLER, MANAGER OF MR. KING'S ORCHARD, TECUMSEH, SHAWNEE COUNTY.

Mr. King's Model Orchard lies seven miles east of Topeka. The trees are eight, nine, and ten years old. It covers some 200 acres, consisting originally of 12,000 trees.

The trees are larger in proportion as the ground is more fertile. They will average about eight inches in diameter, and in the richest soil twenty-foot ladders scarcely reach the top. As a rule our trees are well grown, bright and healthy.

We have forty acres of Ben Davis in one block, eight years old, that has never borne a crop. Last spring the trees were heavily loaded but they began dropping when as large as a pea. This continued until nearly all the apples were off, while those that remained on the trees were stung. At picking time not one-half of one per cent were perfect apples. During the

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summer the trees made a tremendous growth. The best apples were on trees that had grown least. This orchard was planted on prairie land that had been in cultivation only a short time.

For the first few years corn was grown among our trees; then clover was sown. This was plowed up and in 1901 the orchard was thoroughly disked. The past season I mowed the grass and weeds. Next season we intend to disk the orchard again excepting the block of Ben Davis already mentioned.

Do we have borers? Yes; in places plenty of them. They are confined mostly to the trees on the poorest soil; we do not attempt to get them out of old trees. This should be looked after properly when the trees are young.

We are not troubled with canker worm in the young orchard; but in the two old orchards adjoining, the worms took every leaf and stripped the elm trees.

In two young orchards near us the worms were very bad, but those trees were not sprayed. This brings me to the subject of "spraying" on which Mr. King is an enthusiast. We spray three times during the season, using the Bordeaux mixture and Paris green. We spray first before the leaves unfold, then when the petals are falling give them a second spraying, following this with a third in about ten days. Last spring we varied this, giving the first spraying when the petals were about three-fourths fallen.

We use Stahl's Excelsior fruit-sprayer mounted on heavy trucks. We hitch three horses and have a boy to drive, one man to pump and one to handle the nozzle. During the past season we were not troubled to speak of, by the apple gouger, or tent caterpillar. We had some codling moths, not many. Right here I must tell of a little experiment I tried last season in catching codling moth. I chose a Ben Davis tree in the yard that was not sprayed. I took three pieces of building paper, tying them one foot, two feet, and three feet from the ground (around the tree). I caught forty codling moths in the two lower bands but none in the upper one. This tree has always been neglected and is no sample of how the other trees fared. We had some scab on the Missouri Pippin, while two rows of Smith Cider were ruined entirely. I noticed no rust and but little bitter rot; the latter being almost entirely confined to a few trees of a fall apple, the name of which I do not know.

Our best orchard is in a creek bottom; about eight acres is on rolling ground.

This had been an old farm and is consequently the poorest orchard we have. The trees are planted quincunx, fifty-six to the acre. The varieties grown are mainly Missouri Pippin, Ben Davis, Wine Sap and Jonathan. Some of last season's crop is yet in cold storage.

Better Legislation for Bird Protection.

D. E. LANTZ, RILEY COUNTY.

In response to a request by your secretary for a written report on birds, I had intimated to him that I could say something in criticism of the present

law of Kansas for the protection of birds and game. Your secretary, to be accurate, said "carefully written," but in this respect I am sure that I can not meet his expectations.

It is the privilege of every citizen of a State to criticize its law-making body; and there are very few people who do not rise to the occasion and indulge themselves in this high privilege. Indeed, the average man is absolutely certain that if occasion required, he himself could frame much better laws than those we now have upon the statute books. While most of us keep this opinion to ourselves, it is left to the foolhardy or rarely courageous man to give public utterance to his thought.

But my office here is not that of critic alone, for there is much to commend in our present law for the protection of birds. For one thing it is short and concise. It is also clear in its provisions and there can be no doubt as to the meaning of any clause in it. It is a good law as far as it goes. True, it does not protect many birds, nor protect them very well; but this latter may after all be the fault of the machinery through which the enforcement of the law is to be expected. Or it may be the fault of the public sentiment which must be behind the officers of the law and desires its enforcement.

Under our law every constable and city marshal in the State is constituted a game warden, without pay, and is expected to see that the law is obeyed within his bailiwick; but I have never heard that these officers have caused the arrest of any violators of the bird law. Were it not that land owners have interested themselves in some localities under the section which punishes trespass, there would be little hindrance to the continued violation of the law against killing birds. The part of the law which provides a punishment for the sale and transportation of game is more likely to be observed, because we have the cooperation of a federal law, the Lacey act, approved May 25, 1900, and a determined and honest effort by the United States officials to enforce the provisions of that act.

So far as game birds are concerned, our law is defective in that it furnishes no protection to a large number of birds which are usually classed under this head. In the first section of our present law only five of the protected birds named are properly game birds, and two of these are hardly found in the State. The only pheasants found in Kansas, if there are any, are introduced species. The partridge, or ruffed grouse, is exceedingly rare. But there is another family of birds—the anatidae—comprising ducks, geese, and swans, that have no protection whatever. Of these there are thirty-two species found in the State. Some twenty of these are common during migration and only eight ever remain to breed. But there was a time when the Canada goose and about a dozen species of ducks bred regularly in Kansas. The change has been brought about by the coming of the settlements and particularly by the constant warfare against them and the absence of a closed season while the young are being reared. Within the past twenty

years our beautiful summer or wood-duck has almost disappeared from the haunts along our streams where it was formerly abundant. Indeed Dr. Palmer, of the United States Department of Agriculture classes it with the woodcock as a fast disappearing game bird in the United States. While it is probably too late to hope to bring back former conditions in our State with reference to ducks and geese, it is not too late to interfere with their entire extinction. We should have a closed season, extending from April 1 to September 1.

What has been said of the anatidae applies equally well to our herons, rails, sandpipers, and plovers. Of the sandpipers, one is protected under the name of plover. Of course everybody knows that the bird meant in section 1 of the law under the name plover, is Bartram's sandpiper, popularly known as the upland plover. Now there are seven species of real plover found in the State, two of which are common summer residents of western Kansas. Of course these are protected under the law; but I doubt whether any protection is really afforded to the upland plover. Section 4 of the law requires that it shall not be necessary to prove the scientific name of any bird unlawfully killed; but here it is not a question of the scientific name but of the common name. It would probably be a good defense for a violator of the law to prove that his Bartram's sandpiper was not a plover at all. I have known so-called sportsmen to kill this bird by dozens during the month of May, when many of them have already begun the cares of nesting and caring for their young. It is such wanton cruelty as this that has driven from our prairies the great majority of these birds. In 1850 Mr. William Kelley, an Englishman, passed through Kansas on a journey to the mountains and California. In a book giving an account of his experiences he tells of the great abundance of these birds at that time in the valley of the Kansas. Twenty years ago there were dozens of them where single pairs are now found.

But our law is still more defective when we consider birds other than game birds. The whole list of protected species comprises—the various kinds of grouse, 4; quails, 2; plover, 7; the oriole, 2; the meadow lark, 2; the robin, 1; the thrush (there are 11 true thrushes in the State, of which the robin and bluebird are two, the brown thrasher is not a thrush, although it is probable that the framers of the law meant it when they said "thrush"); the redbird; the mocking-bird; the bluejay; the turtle-dove; and the bluebird; in all only 32 species and varieties out of the 353 found in the State. There is a provision that the oriole and bluejay may be killed by the horticulturists upon their own premises; and a further provision for an open season for grouse, quail, plover, and turtle-doves reducing the number of kinds of birds actually protected at all seasons to 15. The law says nothing about the protection of over 150 of our insectivorous birds, of which there can be no question about their beneficial effects upon agriculture and horticulture. These include—cuckoos, 3; woodpeckers, 10; goatsuckers, 6; chimney-swift, 1; flycatchers, 12; true-

larks, 3; crows and jays, 6; icteridae, other than orioles, 10; sparrows, other than the redbird, 54; swallows, 6; waxwings, 2; shrikes, 3; greenlets, 7; wood-warblers, 34; wrens, other than the mockingbird and thrasher, 9; nuthatcher, 5; creepers, 1; kinglets, 3; total, 174. Of these unprotected species, about 30 are resident—present throughout the year; while about 70 more of them are common summer residents, feeding their young entirely upon insect food.

Then there are our so-called "birds of prey." We have in Kansas 26 varieties of hawks and vultures and ten kinds of owls. Of all these, only three, belonging to the genus accipiter, can truthfully be said to have objectionable habits. The great majority feed almost entirely upon insects and small rodents, and there is no class of birds that merit more the careful protection of the law. There is no excuse for the continued ignorance of the public about the usefulness of hawks and owls in general. The careful analysis of thousands of stomachs has shown the character of their food with absolute certainty. We have in Kansas two hawks—Cooper's hawk, commonly called the hen-hawk, a resident, and the sharp-shinned hawk, found in spring migration—which are true falcons and often prey upon barnyard fowls. The sharp-shinned hawk is not strong enough to carry a full-grown hen away, but it is able to kill it, and sometimes does so. A law which would protect all hawks except these two would be reasonable; and several States have now such laws.

Our law is furthermore defective in not providing for the protection of birds' nests and eggs. In our towns and villages the collecting of birds' eggs has so often become a fad among boys that bird life has suffered to an alarming extent. There should be a law to strictly prohibit such collecting at least by boys under 12 years of age.

But it is easy to find fault. How shall we amend the law? In this way. Let section 1 of the law protect all birds except the few that are agreed upon to be more injurious than beneficial. Who shall decide upon the list excepted from protection? A committee from the State Horticultural Society with the advice of some scientific students of birds. The suggestions of the American Ornithological Union's committee on bird protection could well be followed. The suggestions of the Biological Survey of the United States Department of Agriculture are always available. Possibly local conditions determined by your committee would modify the list. In my opinion the list should be very short, including the English sparrow, the crow, the bluejay, Cooper's hawk and the sharp-shinned hawk. The first three of these will not be exterminated if left unprotected. They are by nature fitted to survive unfavorable conditions.

A second section should prohibit the intentional destruction of nests or eggs of all birds except those excepted in section 1.

A third section should provide a short open season for a few game-birds, including geese and ducks. The other provisions of our present law relating to possession of birds, their killing for scientific purposes, trespass,

prosecution, buying or selling, transportation, penalties, game wardens, etc., may well be left with slight modifications to suit the new provisions of the first section.

There has been a growing tendency in legislation for bird protection toward that form of law which instead of naming the protected species, provides for general protection and names the excepted species. This is the proper form, I think, and Kansas would be in line with the progressive States in this matter if our law were changed in this respect. A system of game wardens might, I think, also be devised which would lead to the real enforcement of the law.

Fruit Handling.

ARTHUR YAGGY, HUTCHINSON, KANS.

In discussing the subject assigned to me, I have limited my paper to handling the apple, as my experience has been confined almost entirely to that fruit.

On despatch in the operations of fruit handling the most depends. When the fruit is ready to be picked every operation that tends towards economy of time is as necessary in handling fruits as it is in treating fresh meat in the packing-house. Every picker should be taught to use both hands in picking, and to hustle his filled sack to the rack wagon. The rack wagon when its receptacles are filled should be sent with no delay to the packing house, its boxes immediately emptied into the sorters and the wagon returned with a load of empty receptacles to the pickers. In the packing shed no one should be permitted to lag for an instant while work is on. We allow no leaning on the sorters, no running back and forth on useless or imaginary errands, and write out a time check for the man who gives wordy evidence of the fact that he knows very little. From the shed there should be a constant removal of the packed fruit to the market or to cold storage. From the time it leaves the tree every apple should move on to its destination as steadily as the vehicles in a crowded city street. This can be done by reducing the number of motions made by each man and by having labor-saving machinery.

Every utensil used in fruit handling should be contrived to handle quickly and without injury the fruit it receives. The picking sack we use can be easily filled and easily emptied. The sack is hung in front, is wide-mouthed and is protected and held open at the mouth by a heavy wire frame. The frame is heavy enough to support the sack and in order to hold the mouth open in the proper position relative to the body, the wire is bent down into a sort of a bracket that is supported against the stomach of the picker. A couple of broad canvas girths go over the shoulders, cross on the back and circle the sides of the sack. The lower end of the sack is open and has two hooks attached to it that it can be hooked or unhooked at pleasure from the sack's mouth. Thus when we make our sacks of strong bushel bags and hook the lower ends up they have a picking capacity of one-half bushel. for all picking off the tree this sack has proved very valuable.

The rack wagon to follow the pickers should be large enough to hold forty to fifty bushel boxes or baskets and should be low enough to allow the pickers to empty their sacks into the boxes or baskets with ease. When the rack's boxes have been filled it should start for the packing shed and an empty rack take its place. We believe that it saves time and avoids confusion for the pickers to come to the wagon and empty their sacks there instead of making some one follow them up through the field.

On arriving at the packing shed the wagon drives up an incline high enough to empty its boxes directly into a large canvas sheet or hopper made triangular in shape and so constructed that at one end the flow of apples from it to the sorter below can be made slow or fast. Directly below this hopper, is a small hopper which contains a reserve of apples to feed directly into the sorter. The fall of the fruit from the upper hopper to the lower one is made easy by stretching canvas so as to break the fall and keep a steady flow of apples. The apples in feeding from this lower hopper into the sorter run over a floor of small, round, iron bars set far enough apart to let the rubbish and leaves fall through while the apples roll on. And here the sorter narrows down from the width of the lower hopper from one and one-half to two feet. It becomes a long, narrow runway for the apples, lined with carpet, the carpet tacked on

upside down. We prefer a long sorter. They give more room for the workers and permit of better examination of the apples as they pass down the line.

Boxes or barrels for culls stand alongside this sorter and on one side of it a chute comes down from a room above where the boxes for the fruit are being set up. The five or six men at the sorter each have their own duty to attend to. One attends to the facers and culls, another to the No. 1's, and so on. Each man attends to his business and does not leave the table except when the work is stopped. They are supplied with faced boxes by a man or boy who faces and carries away the filled boxes. The filled boxes are put on little baggage or express trucks or wagons—the kind they use at depots only with rollers on the edges so that they may be easily transferred to and from them.

These trucks loaded with filled boxes are hauled to the man who nails the heads or lids on the boxes. The man who does the hauling arranges the apples in the boxes so that they are all ready for the lids to be put on them and the pressure to be applied. He also stamps the boxes with the variety and grade.

The man who heads the boxes has a machine to aid him in his work. It consists of a stand and foot-power lever press under it with connecting arms or bands to pull the lid of the box down as far as wanted. It is necessary that the middle part of the bottom of the box be not supported so that when pressure is applied on the lid of the box the bottom can sag downward to a certain extent and equalize the pressure through the box. When the boxes are headed they are slid back onto the express truck, carried to the wagon and loaded on them for the car or the market.

I have mentioned boxes only because we have come to the conclusion that the box and not the barrel will soon be the standard package of Kansas fruit growers. Its advantages over the barrel are so numerous and so well known to need no rehearsing here. The simple fact that the far western growers all use them is sufficient for us less experienced fruit growers. The writer has seen apples selling at \$4 to \$4.50 by the barrel on Water street, Chicago, when exactly the same apples were selling in bushel boxes on the next counter for \$2 and \$2.25 per box. We use the regulation California, Oregon box, with an inside measurement of 11 1/2 by 11 1/2 by 18 1/4 inches.

In shipping we ice our cars long enough in advance to have them cool when loaded. We are very particular about having strong braces against the ends of the tiers of boxes when they reach the middle of the car. The jolts received in switching the car will smash weak braces.

In securing cold storage we make as close an agreement as possible. First of all we arrange to store our apples as near the prospective market as possible. The fruit should be put in a room very accessible and stacked according to grades. There must be left ample passageway to get at the fruit and some room for repacking if necessary. A reliable thermometer should hang near the apples. Never let the fruit be packed up next to the pipes and see that the packages are put properly on the side with laths laid on the ends of each tier of boxes to take the weight off the sides of the boxes and to allow air to circulate.

We have always marketed our culls as soon as possible after picking. By-product we have not manufactured to any great extent but have found that good apple vinegar sells well to a limited extent in the local market. The better grades not disposed of at picking time are put in storage and kept there until the market seems to warrant their removal. Commission men try to make money every time they touch a box of apples either coming or going. We growers want to watch how the commission men do it.

Handling Fruits.

GEO. A. BLAIR, SUMNER COUNTY.

Our experience and observation in the handling of pome fruits has been limited to the apple.

In attempting an enterprise of any

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kind, whether it be raising hogs, planting a forest, setting an orchard, or picking apples and storing them, the question arises, what are the conditions necessary to the successful realization of the enterprise? There are natural conditions which in all cases must be observed and exactly followed or the results will be, an approximate success and that only, in proportion to the care bestowed. We meet with two serious difficulties in keeping pome fruits, viz., the fungus growths, whose spores are omnipresent, ready to germinate as soon as a break in the peel is made and the temperature is right, and the warm weather we have during the picking season and some time after.

Now the essential conditions for handling pome fruits are:

- 1. Gathering at the proper stage of ripening.
2. Careful picking of each individual apple and careful transfer to package and storage.
3. Painstaking selection of perfect fruit.
4. Place or kind of storage.

Presuming that we have on our trees a crop of good apples, gathering should begin before the fruit is too ripe; we would suggest when the seeds are brown, the apples red and yellow colored is too ripe for late keeping.

It is our understanding that what we call fruit in the apple and all pome fruits is only a covering for the true fruit, the seed, and that the constituents of this sarcocarp are such as will best protect and at the proper time secure the germination of the seeds, thus perpetuating the species, which is Dame Nature's sole care.

You can each recall the childhood days when green apples, upripe apples, "were good eating," and you also remember that they tasted somewhat like starch. This, together with some acid and oils, constitute the bulky parts of the apple.

In this cradle, the seeds, the true fruit, are grown to maturity. Then, gradually, under the action of air, the sunlight and warmth, the starch is converted into grape sugar. The fragrant volatile oils are evolved and the epicarp or outer skin is painted in glowing colors. Why? To please mankind? No! To attract and invite insect and bird life to partake of a banquet envied by the gods and coveted by man.

Nature clearly enunciates in her modes and methods that man is not wanted and that birds and bees, bugs and beetles, wasps and worms are honored guests at her bountiful board. All these, by their bites and stings and the distribution of rot germs, makes it possible for the apple to fall to the earth, there to slowly decay and embed the seeds in soil while covered with a moist mulch necessary for their germination. Man on the contrary eats all but the core and seeds, flings these away to dry and die. Furthermore, the chemical change proceeds from grape sugar to fermentation, which finishes the ripening by decay. These changes are nature's plan to perpetuate the apple. We, if we wish to store and keep them, should gather them before the chemical changes in ripening are far advanced, no matter if it be for cellar or cold storage.

Careful picking and careful handling of each individual apple after they are gathered is a great essential, as we have found that a bruise, even though you detect no break in the skin, has so broken down the pulp cells that a slight ooze of juice will occur, becoming fruitful soil for fungus and ferment germs to grow.

Again, careless pickers often cut the fruit with the finger-nails or pull out the stem, leaving places for rot spores to germinate. These may seem small defects and scarcely essential, but as our storage has been in cellar or cave, we find success largely depends upon such care.

We pick the apples we wish for cellar storage from the trees in half-bushel baskets, set these in the wagon and haul them to an out-door shaded bin where they lay until ready to barrel. Then they are carefully sorted rejecting all wormy, bruised, or defective fruit.

When barrelled they are placed in a cave, open at both ends above the ground, to permit a free and quick change of air. The ends are left open at night to cool down and closed during the day—this being the nearest approach to cool storage we could devise. In this manner we keep apples until the last of April.

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cial venture cellar storage could not be recommended but as a necessity it is worth all the labor it takes.

Stone Fruits.

GEO. HOLSINGER, WYANDOTTE COUNTY.

The peach, the most widely cultivated of stone fruits, is a native of Persia, but it has been transplanted by degrees to our own cooler temperate zone until it has become acclimated, and fruits in great abundance, at least as far north as the fortieth parallel; and Kansas is certainly blessed by being favored with a climate that grows this luscious fruit in such vast quantities.

The peach orchard, generally speaking, should be located on high upland in heavy, sandy loam. But peaches planted on thin, stony hillside or clay hilltop will give a generous return for a prudent investment. It has been our luck to own a farm that has lots of hillside and hilltop, so it has been our custom for four or five years to plant our peaches on upland or hilltop which is not adapted to so successful culture of other fruits. It is scarcely necessary to say that planting, cultivating or gathering peaches on rough, stony land or precipitous hillside is unpleasant, troublesome, and expensive; but in our locality land is too valuable, be it ever so rocky, to go untilled, and as peaches thrive in these unseemly places better than other fruits it often happens that they are assigned to duty in these apparently unproductive places. It is surprising to see how well peaches will do on these barren, rocky hilltops. I have in mind an orchard three years planting which gave a splendid crop of highly colored fruit on such a location. There is no question but that rich sandy loam will grow more peaches, but the quality of peaches from thin upland is unsurpassed.

Of one thing I am thoroughly convinced: That it is not prudent to plant on low ground owing to the danger of injury from frosts. We have an orchard of 600 trees growing on a low south and west slope near the creek bottom, that has never born fruit owing to the fact that it has been injured by frosts, which did not affect its higher upland neighbors. In this respect altitude seems to be a more important point than the direction of the slope, for peaches on any slope are in danger in or near low bottoms.

The peach being a short lived tree should be planted fourteen to eighteen feet apart each way depending on soil conditions. In my opinion it is much better to bring the trees quickly into bearing and to renew when the orchard starts to decline rather than to attempt to produce long-lived trees. Some orchardists advocate planting eighteen feet by ten feet and cutting down every other tree after the fifth or sixth year. But this is hardly a safe plan, for one's heart is apt to fail him at the critical time much to the detriment of the whole orchard.

Of late years we have been planting peaches fourteen feet apart each way, and planting between the rows three rows of drilled corn, being careful to run the corn rows across the hillside to avoid washing. But serious objections have arisen to this mode of procedure. The peach grows till late in the season, necessarily requiring cultivation after the corn is "laid by," to keep the trees vigorous and to keep down the weeds. If late cultivation is neglected the growth is sure to be retarded and the tree makes perhaps only half as much growth as if highly cultivated throughout the entire season. Then, too, if shocks of corn, corn-stubble, weeds and grass are allowed in the orchard, as is likely to be the case, one is sure to harbor rabbits and field mice, two serious pests to the horticulturist. From the experience of the last five years I am convinced that peaches planted alone and cultivated alone will produce a crop at least one year earlier than if planted with corn between. The peach comes quickly into bearing if generously cultivated and cared for.

The work of pruning should be done with three ideas in view; first of shaping the tree, second of keeping the fruit near the ground, and third to avoid the necessity (in part at least) of thinning. It is essential that the peach should be "headed back" so as to avoid long limbs which are sure to break under a full crop. But this should not be done until just before blooming time that one may determine the probable extent of the crop. It very often happens that the only live fruit-buds are on the extreme ends of the new wood and if these are cut off one may destroy the remnant

of live fruit-buds, and thus spoil the only chance for a partial crop.

As to varieties, Charles Downing in 1869 catalogued some 450 different kinds and the number originated since that time has greatly increased the total. But the number one should have for the most profitable results depends much on the location of your market. Many prefer but a single variety, but there is a very serious drawback to having only one kind, and that is in the inability of getting the crop marketed without great loss. It is perhaps a better plan, certainly we have found it so, to lengthen the season as long as possible, but in doing this one should avoid planting worthless or ordinary sorts. We have never met with good results from any peach that ripens before Family Favorite, although Greensboro is now highly recommended. Family Favorite is followed in succession by Mt. Rose, Champion, Elberta, Old Mixen, and Salway, all good kinds, doing well under varying conditions. These are enough to keep the market wagon going throughout the entire season. However there are numberless varieties that will do well in Kansas and that have made money for the fruit-growers of this State. Reeves' Favorite is one of these. It is small in size but very productive, has a splendid color, is good in flavor and is much sought after in Kansas-City by retailers and hucksters. It ripens with Crawford and is one of that type. Crosby is one of the best in quality, but it over-bears and requires thinning. Chinese Cling is a splendid cling, but clings are too hard to sell. Old Mixen has the great misfortune to ripen with Elberta and no other peach sells to good advantage when Elberta is in the market. Then there is Smock, and Picquets, and Steve's Rarripe, Chan's Choice, Old Mixen Cling, Stump, and a host of others, from any of which one may expect good substantial returns.

The plum has been very unsatisfactory with us, and with the exception of the single variety, the Pottawatomie, our efforts have been in vain. The culture of the plum does not differ greatly from that of the peach. It will grow on hilltop or bottom or any place it is planted. The Wild Goose plum occasionally bears a good crop but when it does, which is seldom, it is a hard matter to dispose of the fruit with any financial success.

The Pottawatomie has produced three or four consecutive crops and ripening as it does late in the season has so far commanded a good price. It certainly has exceeded our highest expectations. Japanese plums have borne well but we have never been able to market any of them. They rot badly at ripening. This plum-rot seems to be easily controlled by the use of Bordeaux; and if it can be, we may be able to develop a better phase of plum culture. There is, at this time, a growing demand for Damsons in the market, and a very distressing inability on our part to produce them. The Damson with us has been a dismal failure, but the fruit-growers of the Missouri River bluff are very much more successful.

There is also at this time a decided change in the method of packing plums for market. The peck basket and the ten-pound basket are in demand, and last season plums sold for more money in these new packages than in crates. Plums with us are not a success, and so far as any money return is concerned it would be better for us our plum orchards had never been planted. I wish, however, to emphasize the single exception that for us has been a good paying plum, the Pottawatomie.

In past years the cherry has been our refuge and strength and a very present help in time of financial trouble. There are five or six varieties of cherries that do remarkably well in eastern Kansas, and it is my opinion that these five or six kinds have made as much money for the fruit-growers of this State, acre for acre, as any other fruit. The culture of the cherry is very much like the plum and peach, requiring a location that is thoroughly drained. I have seen cherries grow enormous crops of heavy bottom, hillside, and upland. It is our custom to plant cherries about fourteen feet apart each way, though for Early Richmond and Dyehouse it would be better to plant sixteen or eighteen feet apart. These two varieties are longer lived than Wragg or English Morello, and consequently need more surface, for if crowded the tree grows too high and causes trouble in picking.

It is essential in the successful cultivation of the cherry to keep the tree in good vigorous growing condition, especially in the early part of the sea-



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son, for the cherry makes all its growth in the first eight weeks of the spring. If not cultivated early it is likely to be stunted and consequently considered by some as a slow grower. But if crowded early in the season, say till the middle of summer, no one need complain of its slow growth. After the tree is six years old, deep plowing should not be done in the cherry orchard. It is still necessary to keep the trees growing but if deeply plowed many surface roots will be torn off and the tree injured.

Early Richmond and Dyehouse ripen at about the same season and are the earliest cherry we grow. They are prolific and hardy. The fruit is attractive and commands a good price on the market. It is claimed for the Dyehouse that it is a week earlier than Early Richmond but I have not been able to notice any appreciable difference in the time of ripening. These are followed by Montgomery, a large and splendid cherry of the Richmond type. The tree is upright in growth and has a beautiful symmetrical head that is easily distinguished from any other cherry. It ripens after the Richmond is gone and before the English Morello is ready for market, and thus fills what would otherwise be a disagreeable gap in cherry marketing. Ripening as it does it usually commands more per crate than does the Richmond. It is larger and fully as productive. It is not as long lived as Richmond but it seems to come into bearing earlier.

Ostheimer with us is not as profitable as some other sorts. It rots as soon as ripe, and must be marketed before its fruit is fully developed. It is a little earlier than English Morello but is small, not nearly so productive, and sells for less money. Altogether it is an undesirable cherry for Kansas.

English Morello and Wragg are perhaps the most productive cherries we have. In fact they are so productive that the tree makes little growth and is short lived. This may be remedied in part by keeping the trees in healthy growing condition which also enables the tree to hold its fruit a week longer than it otherwise would, and this is a matter of great importance, for very late cherries always command a good price. It is true of all the varieties I have mentioned that a good, vigorous, growing condition considerably lengthens the season of ripening.

As to planting of sweet cherries for commercial purposes, it seems to be fully established that they can not be

grown successfully in this State. A few may be grown for home use but it is doubtful if the culture of the sweet cherry can ever be developed into a paying business in Kansas. Cherries of the Morello type, however, sometimes produce enormous crops. I know of a tree of Early Richmonds from which was harvested in one year thirteen crates of salable fruit.

In conclusion let me say, as I have already hinted, that careful attention to culture of stone fruits in Kansas can not fail of success, especially of the five or six varieties of peaches and cherries I have mentioned. And with our wonderful climate and soil conditions and the general adaptability of the conditions of this State to stone fruit culture, it may be expected or hoped at least that the introduction of new varieties, together with new methods of cultivation will in time develop fruit culture to the extent that it will place this State as high relatively in stone fruit products as it is at the present time in cereals and live stock.

Stone Fruits.

C. A. CHANDLER, ST. LOUIS, MO.

Botanically, stone fruits belong to the order Rosaceae, to the Genera Prunus, under which are about forty-four distinct species, many of which are again divided into varieties and strains.

All of the stone fruits require a soil well drained, unless possibly the plum, which will stand more "wet feet" than any other stone fruit. More crops of plums are raised where the water table is not more than eight or ten feet below the surface, but understand that a constantly saturated soil is sure death to all stone fruits.

The fall before planting, plow the ground thoroughly, then as early in the spring as the soil is dry enough to work, lay off rows each way with a breaking plow, or lister, and plant trees in the cross. Plant one-year-old peach always, but two-year-old cherry and plum do the best.

The cherry crop the past season, taking the country over, was about one-half crop, some localities however having a full crop, while others, owing to cold rain at time of blooming, were a complete failure.

The most profitable variety of the cherry, all things considered, is the Early Richmond. Other good varieties are the Montmorency, English Morello, and Wragg.

Plums the past season were almost a failure; and the Japan varieties in the eastern portion of Kansas should

be counted a thing of the past. Often the whole crop will rot before ripening. For plum, plant Wild Goose, Potawatomie, Minor, Arkansas Lombard, and Shropshire Damson budded on plum and not on peach except the latter which should be budded on peach only to get the best results.

Apricots should be sparingly planted, a few trees of Superb is sufficient, and then do not expect to make any money on them.

The king of all stone fruit is the peach. The area of successful cultivation of the peach is limited. The danger of frost in the South is even greater than in the middle States. The great peach growing area of the United States is in some favorable situations protected from frost, as, near a large body of water; along the Great Lakes, even into Canada; the latter place being thought of by many as having extremely long, cold winters.

Delaware and along Long Island Sound is probably the oldest peach growing section of the United States. Texas and the higher elevations of favorable sections of Middle and Southern States are also peach sections.

Plant the peach trees thirteen to sixteen feet apart, prune medium size, one-year-old trees, to a straight stick, plant in the cross made with the plow, tramp well, place wooden wrappers about each tree as soon as planted, to protect from sun, borers and rabbits.

The ideal cultivation for stone fruits is to cultivate both ways with a cut-away disc until the first of July, then seed to cow-peas which shade the ground, adds fertility and humus and ripens the wood for winter. Where this can not be afforded plant some crop, as corn which matures in the later part of summer, leaving four feet on each side to cultivate as above described, but never plant a crop which matures in early part of summer.

The dark side of peach culture is the yellow borers, peach leaf curl, crown gall, root knot and a host of others all of which are held in check by thorough cultivation.

Pruning of the peach should begin early. Prune to a stick on planting, removing the sprouts as they come out close to the ground, leaving the tree to form a round head, then each winter prune off one third of the new growth, this also being the most economical way of thinning the crop.

In gathering the crop several pickings must be made. Those for the local market are gathered in clean, white, wooden peck baskets. Those for shipping, into third-bushel crates.

Taste as Pertaining to Fruits.

R. F. SMITH, DOUGLAS COUNTY.

The taste of fruits was quite crude in the days of our pilgrim and patriot fathers. They adapted their tastes to the wild native American fruits of the forest, such as grapes, persimmons, haws, plums, seedling apples, etc. Likewise they counted largely on wild game for their meat. The forest and soil had to be subdued before the beginning of experimentation with the higher order of fruits. Orchard fruits were doubtless experimented with first.

It was many years after orchards got a start before any attention was paid to berry-fruits. In the course of time their tastes began to grow away from the natural fruits, in favor of selected, cultivated varieties. The nurseryman and amateur fruit-grower is credited with raising the standard of taste. The first consideration before the introduction of a new variety of fruit should be the tasting qualities.

While much depends on size and the coloring of apples the question is usually asked, What do they taste like, are they sour or sweet? Thirty years ago, consumers of berry-fruits never thought of the size or asked about the taste. They were glad to get them, whatever the taste, size, or price might be. But now the taste and size of the berry is the first consideration. For a long time the size and color of the Ben Davis apple so delighted the eyes of consumers, that its taste was not considered. But latterly apple-consumers are selecting the higher flavored fruits instead of those of dazzling color or great size. Owing to a revival of the taste in apples, the old Ben Davis is now quoted beneath the price of Grimes' Golden, Huntsman, Winesap, York Imperial, Jonathan, Gano, etc.

For summer use, for cooking, the highest excellence may be found in the Chenango Strawberry. For a fall cooking apple the Ortlely or White Bellflower excels most other sorts. No planter of apple trees for home use should overlook the Ortlely and Chenango strawberry.

Pears, like apples, are widely different in taste, and yet a kinship of the pear family is easily discovered. And there is the greatest difference in taste between the Keiffer, Garber, Laconte varieties, and some of the well-known old standard sorts. In the writer's estimation of taste the first three sorts have no rights in common with Bartlett, Seckel, Howell, Beurred Anjou, Duchess, and others that are well known. The highest degree of excellence in the taste of pears goes with the Seckel and Bartlett. There are a half dozen other sorts whose taste comes in as second.

The peach family is a large one, yet there is not that wideness in the difference of taste that there is in pears and apples. There are many sorts in which one can scarcely discover the different taste. One may be a little more juicy, or more tart, but there are no positively sweet peaches, hence the less difference in taste. The very early sorts are too sour for any purpose whatever. The peach tree should have an abundance of sunshine with a moderate degree of moisture and a hillside to grow on to bring its fruit to the highest possible degree of excellence. The best varieties of peaches grow on low, flat lands; any season except a very dry one produces poor, sour, worthless fruit.

To my taste, none of the new varieties except, possibly, the Fitzgerald and Crosby, come up to the best of the old standards that have been grown from twenty-five to fifty years. Even the famous Elberta is a second-class peach in its tasting qualities, while to the eye it is probably the most attractive peach for commercial traffic. The Crosby, an under size commercial peach, is far superior to Elberta if taken from the tree to eat, and of still better quality after it is canned. In my estimation of the taste of our standard varieties, the Old Mixon Free, Beers, Smock, Stump the World, Heath Free, Picquet's Late, and Salway are the leaders in the matter of taste.

TASTE IN THE BERRY FRUITS.

There is a great variety of taste among the berry fruits, and, like peaches, they are all sour. There are none positively sweet.

Some of our largest commercial varieties do not have the spice in taste that the smaller ones have. Among the larger ones are the Buback, Parker Earl, Brandywine, Margaret, Wm. Belt, Clyde, etc. These likewise make the poorest canned goods.

To my taste the Warfield, Bisel, Miner, Aroma, Gandy, Crescent, and Haverland stand highest in quality. While the Excelsior does excel other sorts in its early ripening, it also excels in having more the taste of vinegar. It is all right to the eye, but when tasted, unless highly sugared, the eyes shed tears. There is a wide difference in the taste of canned strawberries. Some sorts are poor and so disappointing to the canners, that one trial is enough to turn most housekeepers against canned strawberries. But if they know the varieties that stand the test and how to can them they would never be without canned strawberries. They are rich in flavor and as invigorating as grape juice or wine.

There is less difference in the taste of black raspberries than other berry fruits; while there is a difference in the size of the berry and the bush on which they grow, all have the same taste. Then, canning does not change their taste.

There is more difference in the taste of the red varieties than the black ones. The Turner, Miller, and Loudon are the most satisfying of red sorts. In the name of a variety of the red sorts, Brandywine, one would suppose that it was so named on account of its superior taste. But it is the opposite. Its pulp is tough and seed large, making it a better commercial commodity than healthful for the fruit-grower to eat.

The gooseberry is growing in favor for commercial traffic. When gooseberries are cooked and canned properly they become a tame fruit, and when made into pies, they make a first-class berry-pie, loved by men and women in city or country.

In the blackberry family there is more variety in taste than there is in raspberries, some very sour and others moderately so. In the old Kittatinny may be found the highest degree of excellence, but owing to the disease called orange-rust, its cultivation has been seriously hindered. The taste of the Early Harvest when eaten from the bush may be called third rate, but when it is canned, the seed being small, the excellence of its taste is very much enhanced—in fact it is one

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of the best berries for canning.

There are other berry fruits, but those that come under our notice are grown in our country and in line of our work.

It is the writer's conclusion that the highest degree of excellence in tasting qualities in all our orchard fruits lies in the pear family. It is hardly possible to conceive of anything in the line of fruits that would eclipse a well-ripened Seckel or Bartlett.

Among the berry fruits the strawberry is the ideal in taste and coloring, in the berry patch or in the dish, smothered with sugar and cream. In the matter of taste in our fruits the writer has never consulted any authority. Others may differ with him but he stands by his own taste in fruits.

Small Fruits.

MARSHALL E. CHANDLER, ARGENTINE, KANS.

Let us go back to the summer of 1901 when for one hundred days we did not see one-half inch of rain, and the heat and drouth burned up our crop of strawberries, raspberries, potatoes, and other crops.

Following this, we had one of the coldest and driest winters in years. When spring came it was no better. Still the drouth continued. The April winds blew the soil off the potatoes, and killed the pollen on the strawberries, so that the crop was reduced to a crop of buttons in place of a crop of large, marketable berries.

But by the middle of June it commenced to rain, and has been rainy ever since. Our potatoes were never larger, cabbage as large as a bushel basket. In fact it has been the most prosperous year as a whole we have had for several years.

Our strawberry fields never looked better than at the present time. The plants are large and well rooted, capable of bearing an immense crop next year.

The varieties that withstood the drouth best the past season were Excelsior, Stayman, Buback, Splendid, and Senator Dunlap. The old Robinson is a good pollinizer and withstood the drouth remarkably well. The Rough Rider is a new variety and a good one. It withstood the drouth as well as any. The Clyde is a good cropper but can not stand drouth or hot sun, as it does not make foliage enough to protect its fruit. The fruit of the Clyde is also too pale in color.

Some of the new varieties this year made a wonderful growth, such as New York, Marie, Kansas, Monitor, and others. It will pay to plant the Splendid, Sample, Senator Dunlap, Rough Rider, and the Monitor. It will be well to plant some of the older varieties as well, Aroma, Warfield, Haverland, Buback, Windsor Chief, and Gandy. An extra early berry, ripening before Excelsior, is August Luther. It is a good money-maker.

Our raspberry fields are in fine shape. The crop the past season was one of the largest and prices were good. Cumberland brought \$2.50 per crate while the old Hopkins brought \$1.25 per crate. The Cumberland is the best medium blackcap ever introduced; cane a good grower, perfectly hardy; berries very large and jet black—a very productive berry.

For a good, late berry, Munger is a good one; same type of berry as Gregg, but cane growth is stronger and very much more hardy. Nemaha is another one that is proving to be a good one to plant. For a home or garden berry

the Cardinal is one of the very best for a red variety. The color is against it for market as it is dark red or purple and it is too soft to ship well. In cane growth there is none equal to it. It propagates from tips like blackcaps.

For good reds, Thwack, Miller Red, and Loudon are the money-makers. I know of one crate of Loudon that sold for \$5 at wholesale on the Kansas City market this year.

On the whole, the outlook for the small fruit grower is very promising for the next year.

Handling Small Fruits.

F. W. DIXON, HOLTON, KANS.

Handling fruit of any kind is a very important matter, more so than growing the fruit. It is one thing to grow a good fruit-crop and quite another to handle it properly.

Long before the berry season opens you should have an ample supply of box material and crates on hand to market your crop. Some will say there is too much risk in procuring materials before the crop is assured, or before you can have any idea of the size of the crop. To such timid people we would say, you have missed your vocation and had better quit growing fruit and grow corn.

Manage your work so that you only have enough boxes and crates made ahead to last, at most, two or three days, as we find that boxes made too long do not look fresh and clean like newly made boxes, and whatever you do, do not use old, dilapidated, dirty-looking crates, unless you are poor; even in such a case it is doubtful if it pays.

We consider the most important item in handling small fruits is competent help. Of courses if you have only a small garden patch of berries it is an easy matter; but if you have large fields of several acres extent it is not so easy.

We find girls and women by far the best help in picking berries; it is only now and then that a boy or a man is fit to have in the berry-field. Usually the boy will fill up on berries in fifteen minutes and is absolutely worthless the remainder of the day. Men have usually been used to heavier work and their touch is too heavy for tender small fruits. We usually have a boss for forty pickers, and as all our pickers so far have proven honest for keeping tally, we use a common shipping-tag with printed numbers, 1, 2, 4, and 6 quarts; each tag contains numbers to amount of 130 quarts. One person at the shed attends entirely to punching tickets

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using a common conductor's punch and sees that every picker brings in his boxes well filled. The person must know something and not be afraid to use his tongue a little if necessary, for we find that the average picker and for that matter, the average worker, however competent, must have his memory jogged once in a while—sometimes often. Sometimes a picker proves wholly incompetent; in such a case get rid of him. For picking-stands we use the heavy spliced twenty-pound grape basket. There is such a basket heavier than the common twenty-pound basket. It holds six level quart boxes very conveniently and if any berries fall out of the box, they are caught in the basket. There are many little things that contribute to success in handling small fruits that we can not mention here. What will work in one place does not always do in another, but the few general rules we have given above work everywhere. We do not think what we have said is at all new, but only serves to exemplify what we have learned in the past, and to new beginners may be of some profit. Our berries now are ready for market, and should be hauled in a good spring wagon.

Nomenclature and New Fruits.

WM. CUTTER, JUNCTION CITY, GEARY COUNTY, KANSAS.

Nomenclature is a never-ending subject; this is particularly so with the apple. Many of the best known varieties of which always have been and always will be appearing under new names. This is usually the work of the innocent or ignorant. Others designedly indulge in this rechristening for purposes best known to themselves. To modify the last remark, I will say that soil, situation, climate and cultivation produce such radical changes in size, shape, color, and time of ripening, that it takes an expert indeed to recognize some of our well-known varieties.

The apple is our most extensively planted and valuable fruit and as might be expected is known by more synonyms than all other fruits combined. There are very few varieties that nurserymen do not know as readily by the tree as by the fruit and there are very few fruit growers who can not tell the varieties best suited to his own wants in the same way; so, unless you strike out into the sea of unknown or untried varieties, you are not likely to make a serious mistake. These mistakes are more often made by the tree agent discovering in his victim a desire to outdo his neighbors by buying varieties unknown to him, and perhaps to everyone else.

Of new varieties that have attracted my attention the Winter Banana is medium, or rather small; exposed specimens have a fine, red cheek; it is an early bearer and the flavor is very fine; the fruit ripens and drops too early for a long keeper; yet it keeps remarkably after ripe.

Mason's Orange is, I think, an improved Yellow Bellflower. It is a much better bearer and has all the good qualities as well as some of the bad ones of its evident parent. It is too large to stand strong fall winds, so it drops badly.

Shakleford is a quite large unattractive, coarse apple; it sunburns on the tree, and is not a favorite.

York Imperial, Black Twig and Minkler are not coming up to our hopes and expectations as early bearers.

I know of nothing new on the cherry except that the Baldwin showed no fruit, while Richmond and English Morillo of same age do.

Of plums, I still put the Japans at the bottom of my list for central Kansas.

Of peaches, I could have said nothing this year had I depended upon home observations; so I will tell you what I saw at Palsade where the grandest orchards of the grand valley of Colorado are located. I have taken great interest in that country for years and have sent for all new varieties of the peach that I was able to procure and from them I took the following notes:

Sylphide, medium, yellow, good, ripens with Elberta.

Bailey, Iowa, iron-clad, the smallest and poorest peach I ever knew to be budded.

Prize, large, yellow, ripe with Wonderful, and a much better peach.

Geary's Hold-on, large, yellow, just before Salway and one of the best to precede that variety.

Roberts, medium, white, soft and poor.

Tyhurst, small, yellow, good and productive, ripe with Champion.

Superb, rightly named, looks like

Champion, but better except for shipping, ripe with Elberta.

Bell's October, good size, yellow, fine flavor, ripens after Salway and Heath's Cling, keeps till November.

Texas King, larger and better than Mountain Rose, of same season.

Bishop, much like Texas King.

Bequet's Free, very large, white, a grand peach for all purposes except distant market, ripens after Elberta.

Kohler's Cling, large, yellow, a perfect beauty, ripens with Heath.

Gold Dust, pale yellow, small, comes after Elberta.

Carman, large, white, a week after Alexander, a perfect freestone, and the best of its season for market or home use.

Fitz Gerald, large, yellow, productive, ripens with Crawford's Early and is worth a dozen of it.

New Prolific, if Elberta was out of the way this would be the best yellow peach of its season, it is not quite as large as Elberta, but of better flavor and more productive.

Mathew's Beauty, as large as Elberta, a finer yellow, it is a good shipper, and of very fine flavor, ripens fifteen days after Elberta, and I consider it the best of its season.

Thurber, with Elberta productive and poor.

Horton's Rivers, an improvement in size and quality over Early Rivers, an excellent family peach, but too tender to ship.

Waddell, much like the above, but hardly as good.

Phillip's Cling, yellow and late, no red at pit, a favorite for drying, said to produce several pounds more of dried fruit per bushel than any other variety.

Delaware, much like Mountain Rose, is a long time ripening, beginning ten days before Mountain Rose and lasting nearly as long, a fine family peach.

Emma, this is another valuable peach, it begins to ripen before Elberta is gone and lasts a week longer, it is large, a good bearer, drops less than any other big peach, a perfect beauty and a good shipper.

Late Elberta, got from Butterfield, is an Elberta in tree, the fruit is better but not as large, it is a week or ten days later and may prove valuable.

In conclusion I will say, the old and, in some cases, good advice, to stick to the old varieties and shun the new ones, will not do for the peach-grower.

A large number of our best varieties are of recent origin. More orchards are spoiled by planting Stump, Old Mixon, Crawfords, etc., than by planting the newer varieties originating in the peach-growing area of the country.

Beware when a peach is recommended too highly. Iowa was instrumental in scattering the Bokaras all over the country and now she is doing the same thing with the Bailey, the two poorest peaches ever foisted upon a credulous community.

Home Adornment.

CORA WELLHOUSE BULLARD, TONGANOXIE, KANS.

There are no two words in the English language which so stir the general heart as the words, home and mother.

At the World's Fair, in the art building, hung the picture "Breaking Home Ties." On every side were paintings infinitely greater in merit, but the crowd passed them by and thronged about this picture. The scene was only a plain old farmstead, with a tearful mother in the foreground kissing her boy goodbye, the wagon waiting at the gate to bear him from her out into the world upon life's hazardous journey. It was a simple, homely picture, yet it had a pathos which stirred the hearts of the multitude. They seemed never to weary of looking at it. No doubt many a gray-haired man in the passing throng gazed upon this picture recalling the dark hour in his own life when he, too, had kissed a now sainted mother goodbye, and, turning his back upon the old farm homestead, had gone out into the world to win fame and fortune; had apprenticed himself to counter or ledger, only to become in the end an empty, resourceless, broken old man.

The immortal Eugene Field writes:

"It comes to me often in silence,
When the firelight sputters low,
When the black uncertain shadows
Seem ghosts of long ago.
Always with a throb of heartache
That thrills each pulsing vein,
Comes the old unquiet longing
For the peace of home again.

"I'm sick of the roar of cities,
And of faces cold and strange.
I know where there's warmth and welcome,
And my yearning fancies range
Back to the dear farm homestead
With an aching sense of pain,
But there'll be joy in the coming,
When I go home again.

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S. V. R. HAYES, Michigan Trust Bldg., Grand Rapids, Mich.

"When I go home again, there's music
That may never die away;
And it seems the hands of angels
On a mystic harp at play,
Have touched with a yearning sadness
On a beautiful broken strain
To which is my fond heart wording
'When I go home again.'

"Outside of my darkened window
Is the great world's crash and din,
And slowly the autumn shadows
Come drifting, drifting in;
Sobbing, the night wind murmurs,
To the splash of the autumn rain,
But I dream of the glorious greeting,
When I go home again."

Another great man writes,

"To me, the most priceless gems in memory's casket are recollections of the old farm homestead. How they call up visions of clovered fields, honey and cream, the hum of happy bees in perfumed meadows, industry, contentment, -'Old Boss' at the cottage gate, chewing satisfaction's cud, in the blessed twilight which fell like a benediction between the hours of toil and sleep. How they awaken old dreams of happy days of childhood's hours; of dimpled babies, of a loving mother, and an honest father; of streams, woods, violets, and all that is pure and stainless in the human life."

Would that all boys and girls who grow up on the farm could carry to the end of life's journey such blessed memories of the old homestead.

Returns of the last census show that the drift of young men from country to city has increased extraordinarily in the last decade. Sociology and philanthropy greatly deplore the harmful influence of city life upon these young men; and the cry goes forth constantly, What shall we do to keep our young men on the farm?

Let me repeat: "The peace and greatness of any commonwealth depend upon the contentment and happiness of its citizens." No ruler, be he monarch of a kingdom, leader of a municipality, or master of a hearthstone, can afford, for a moment, to lose sight of the fact that unhappiness is a powerful disintegrating force in any social structure.

If we are to keep our young people with us on the farm, we must recognize their inalienable right to healthful happiness.

We regard the subject assigned as one of the most vitally important within the scope of horticulture. Happiness and "home adornment" are birthmates. They are indivisible. No father, mother, son or daughter, having the attributes of a moral being, can find contentment and happiness in a home that has no higher significance than that of a mere lodging house.

It has been wisely written, "In all the story of the world of man, the forum-teacher, the poet-singer, the soldier, voyager, the ruler—serves not his country as he who plants vine and fruit 'round the door and gives meaning to the hearthstone and the birthplace."

To us it seems if we farmers and horticulturists would attend to the home-beautiful as assiduously as we fix our attention upon the hen-helpful, the hog-healthy, or the berry-bountiful we might check this great migration of young people to the city, and keep them with us to strong, useful manhood and womanhood.

There is so much in the daily stress of farm life that is conducive to the development of well-rounded manhood. It is not a mere coincidence that the life-story of so many eminent and successful men begins with the statement that their early days were spent in toil upon the farm.

There is nothing like good, honest,

outdoor work to clear away the dross of mind and body. It brightens the eye, hardens the muscle, braces the nerves, and brings man close to his Maker.

When we consider the small amount of capital and labor required to develop a home in the country that is beautiful, yes, surpassingly beautiful, though it be only a cottage, and when we estimate the immeasurable dividends invariably returned to the investor, it is indeed difficult to understand why so many farm homes remain the remarkable study that they are in drab coloring and joyless inmates.

The adornment of a home is no less a sacred function than the adornment of a holy temple; for home is not only a place of shelter, seclusion, rest, and safety, but it is a place where life begins and goes forth to all its possible uses, and is the fountain of service to those outside its bounds. Under God's all-pervading and inexorable law of continuity, no home can exist simply for its owner. Its influences must go to the farthest shore on which a ripple of its movements ever breaks.

The power lies within our grasp, be our acres few or many, to create a place where it is pleasant to live, easy to work and sweet to rest; where emanations from our home atmosphere give to the world that which is pure, stimulating, and elevating. If we fail to do this, ours is the fault. The great Home-BUILDER in the skies has provided abundant material and easy of access, wherewith to do this, the grandest and most important work of man.

Between the covers of the different reports of this society are many pages written upon this subject by men and women of brains and experience. Read these again, my brother horticulturist. If you have any doubts as to your deep and lasting obligations in this matter of "home adornment," consult your wife upon the subject. She knows far better than your speaker where your sins of omission are and she is thoroughly conversant with fields of action best suited to your abilities. Not a bit of doubt but you will find she is full of ideas which she longs to carry into execution could she but have your assistance. In point of pride she may have been not unlike Miss Milinda Snowball, who, when asked is she were going to hang up mistletoe for Christmas, replied, very indignantly, "Deed I isn't. Lemme tell you Ise got too much pride to advantage for de common cortseys a lady has a right to expect."

There are untold numbers of wives who are sad because they have too much pride to ask for those things which they feel a wife has a right to expect. When as home-builders we grow older and wiser, we shall have more perfect cooperation between husband and wife in the upbuilding and adornment of our homes. Then will there be a clearer and more vivifying light coming from the old farm homestead.

Home Adornment.

MRS. LIZZIE K. MAFFET, LAWRENCE.

Home is the resort of love, of joy, of peace and plenty, where, supporting and supported, polished friends and dear relations "mingle into bliss." A home includes a house—it should include a yard. Under home adornment the outside as well as the inside of the house should be considered. The terms adorn, ornament, and decorate are the most suitable words in connection with home.

While there are some things need-

(Continued on page 58.)

APPROPRIATIONS.

(Continued from page 49.)

climate of the region in which he wishes to produce them. It has been further found that substantial increases in yield have been brought about by breeding. These increases have been most notable in the cases of wheat and corn. The Minnesota Experiment Station notes the production of strains of spring wheat which produce, on the average, some three bushels per acre more than the best the State had before. In Illinois, corn is noted with improved yields amounting in some cases to an excess of twenty bushels per acre. Minnesota spring wheat improvement does not help the yield of Kansas winter wheat. Illinois corn improvement in yield is not certain to be maintained on bringing the seed to Kansas, and is almost certain to be lost in western Kansas.

What has been done in Minnesota and in Illinois can be done in Kansas. An increase of three bushels per acre in Kansas wheat would mean about 18,000,000 bushels, worth not less than \$10,000,000 a year. An increase of even five bushels per acre in Kansas corn would mean another \$10,000,000 a year in the wealth produced in the State. Increases in the value of other Kansas crops are quite as available as in wheat and corn.

It will pay Kansas to invest judiciously and liberally in this kind of experimental development; to provide for the most vigorous prosecution of the work of plant-breeding; to retain the highest type of ability and energy in this work. The expense need not be very great and will be looked upon as entirely insignificant when results begin to appear.

THEY ARE ASKING FOR COBURN.

The Kansas City Journal of last Monday morning said: "A well-founded rumor has it that F. D. Coburn, of Kansas City, Kans., secretary of the State Board of Agriculture of Kansas, has been appointed chief of department of live stock for the Louisiana Purchase Exposition." It has been known for several months that the exposition management have been anxious to secure Mr. Coburn for this position and have offered him every possible inducement to undertake the work, giving him an absolutely free hand in the management of the live-stock department.

It goes without saying, in Kansas, that with such free-hand Mr. Coburn is capable of creating a department such as was never before known at any exposition. But the State of Kansas is reluctant about sparing Coburn even temporarily. The most that ought to be consented to would be to loan a part of his services during such time as may be necessary to create and exhibit the live-stock department of the great exposition, with the distinct understanding that, after the exposition, he is to be immediately returned "heart whole and fancy-free" to the work he is now doing in this State.

Unquestionably the position of chief of the live-stock department of the exposition is one of great opportunities for the peculiar kind of work which Coburn is able to do better than other men. Undoubtedly the live-stock interests of Kansas, of the country at large, and of the civilized world, would be greatly benefited by the Coburn brand of organized work should he undertake it for the coming exposition.

ELECT UNITED STATES SENATORS BY THE PEOPLE.

A new set of officers manned the Kansas ship of state this week and the legislature began its sittings. There is not likely to be any radical change of policy from that of the last two years, since the only partisan changes gave larger majorities to the party in power. There have been changes as to factional control and at this writing any prediction as to which of two political machines will succeed in naming the next United States senator would be premature.

The only political topics which have been under discussion in Kansas since the results of the last election were known have been those pertaining to the selection of the speaker of the house of representatives, the State printer and a United States senator.

The great object for which Kansas politics seem to exist now is the election of a senator. The organization of the legislature and all other Kansas interests are nothing and must be made to contribute to the one great object of choosing a senator.

And why is this so important? True, the United States Senate is one of the most important legislative bodies in the world. There are some strong and honorable men in it. It has to do

with the general interests of the country. But would the average citizen of Kansas know any difference in his prosperity or in the progress of the country if this State should, like some others, fail to select a senator? It is right and proper that this State shall contribute of its wisdom to the governing of the nation. But is this the motive that impels men to spend their days and nights amid the smoke and confusion of the Copeland Hotel lobby? Is it this that causes shrewd schemers to make puppets of legislators? Is it this that makes men stoop to measures such as would brand them with infamy if resorted to in private business?

The question is one of control of federal appointments. The hunger of men for positions with public pay is a humiliation to American citizenship. It grows more intense as communities grow older and makes sober citizens of the better sort more and more inclined to stay out of politics.

The senator when elected is expected to devote his best endeavors to securing a federal office for each one of these "friends" who are scheming to bring about his election. These office-holders, big and little, constitute what is called a "machine." Under the present system it is seemingly impossible for any man, however worthy, to be elected senator without the aid of a "machine." To the machine the people's interest are secondary, the interests of the machine first. Can exalted statesmanship be expected when such motives are the moving forces?

This condition might be very largely remedied by a change in the method whereby United States senators should be elected by the people instead of the legislature.

PROPOSE TO MAKE MEDICINE CHEAPER.

Manufacturers of so-called "patent" medicines are urging the enactment of a law reducing the tax on proof-spirits from the present rate, \$1.10, to 70 cents per gallon. If this proposition could be so framed as to exclude from the reduction all spirits used for convivial purposes, there would be less in the way of its vigorous advocacy in Kansas.

The preparation of standard medicines in convenient form for use has made great strides within recent years. The plan of attaching reliable directions for use has aided in bringing into vogue reliance upon well-known medicines in thousands of instances where the services of the doctor would otherwise be sought. The frequent inaccessibility of the doctor to the sufferer leads to a larger reliance in the country than by like dwellers in the towns upon ready prepared medicines.

The cost of many of these medicines to the manufacturer is largely a matter of cost of alcohol used in their preparation though frequently not as an ingredient. Doubtless thousands of people would hail with delight such reductions as is proposed by the Joy bill now before Congress. Could the amount proposed to be taken from the tax on spirits to be used in the preparation of medicine, be added to the tax on spirits to be used for inebriation the proposed measure would better meet the views of Kansans.

STARTING ALFALFA.

EDITOR KANSAS FARMER:—I have read your paper for one year and think it very valuable and I would like to ask through your paper if any of the brothers have had any experience with commercial fertilizers in starting alfalfa on upland. I have used barnyard manure and found it very successful. The trouble is to get enough of it to cover a large field. A. E. SMITH, Potwin, Butler County.

Mr. Smith's report of the value of barnyard manure in starting alfalfa is in harmony with all that has been reported by others. The editor does not remember to have seen any account of the use of commercial fertilizers for this purpose. The presumption is all in favor of the use of nitrogenous commercial fertilizers. The alfalfa seed is very small and contains but little plant food. The young alfalfa plant contains much nitrogen which it must get from the soil until it has established its agencies for getting it from the inexhaustible supply in the air. These agencies are entirely wanting in some soils and even where they are about the young plant must attain some size before it can make considerable use of them. To supply the needed nitrogen in the form of a fertilizer is entirely rational.

A plan that is possibly better and certainly cheaper and entirely reliable for providing the needed nitrogen is that which has been followed for three

seasons with marked success by Col. Guilford Dudley, of Topeka. Mr. Dudley aims to sow his alfalfa seed in the latter part of August. As a preparation he puts the soil in good condition in the spring and raises on it a crop of Canada field-peas and oats. These are sown together, one bushel of oats and one and a half bushels of field-peas per acre. They are ready to harvest in time for alfalfa sowing and besides producing a heavy crop of unusually valuable forage, they keep back the weeds, and leave the soil mellow and abundantly supplied with nitrogen. The peas are nitrogen gatherers. They require much nitrogen for their growth, but the seeds are rich in nitrogen and are large enough to sustain the plants until they have attained considerable size and probably established agencies for appropriating a portion of their nitrogen from the air.

The KANSAS FARMER will be pleased to have reports from any farmers who have tried commercial fertilizers. It is hoped that if Mr. Smith shall use them he will report results.

MIXED PASTURE.

EDITOR KANSAS FARMER:—I wish to seed down about forty acres for pasture; had thought of mixing English blue-grass and alfalfa. I would like to have the experience of others. Would it be a success or would some other kinds of grass do better? The soil is clay loam, about two acres a little wet. I wish it for cattle-pasture.

R. J. MORRIS.

Severy, Greenwood County.

Alfalfa and English blue-grass would doubtless make good pasture. Some farmers in the vicinity of Topeka have used alfalfa, English blue-grass, and orchard-grass, taking equal proportions of the seed. One farmer got a splendid stand of this mixture with the addition of red clover, rented the place, and the tenant found the pasture so good that he pastured it all out the first year.

It is advisable with any pasture in which alfalfa is an ingredient that all stock be kept from it until after three or four mowings. Young alfalfa is easily killed. Persons who have had no experience with pasturing alfalfa are liable to make the mistake of trying to place enough animals in the pasture to keep it down. This can, of course, be done, but at the risk of damaging the stand. Alfalfa will not without injury bear continued close cropping. It is better to pasture it about as much as would keep down other grasses and then make hay of the excess. This is especially important if pasturing with hogs.

Another plan is to pasture heavily for a few days and then shift the animals to another field for a few days. Bear in mind that all plants die if their leaves are kept cropped for a considerable time as fast as they appear. Animals are very partial to the very young alfalfa leaves.

The editor will be glad to publish the experiences of its readers in various sections.

PASTURE FOR HOGS.

EDITOR KANSAS FARMER:—Can you give me some advice on pasture for hogs when we have no alfalfa for them. Which is the best to sow in the spring, oats, wheat, rye, or rape? Which is best for pigs to pasture on and will last the longest?

A SUBSCRIBER.

Derby, Sedgwick County.

The opinion of a majority of those farmers with whose views the KANSAS FARMER is familiar, is that of all annually sown crops wheat furnishes the most and best pasture for fall, winter, and spring. If devoted entirely to pasture, without a view to securing any part of a crop of wheat, it lasts late in the spring, later than rye.

Oats is a good spring-sown crop for pasture, and may be reserved for use after the season for pasturing wheat shall have passed.

Rape furnishes good summer pasture and much of it.

These are all good for pigs. Wheat and oats pastures are good for any kind of stock.

Caution is necessary to avoid bloat in pasturing rape with ruminating animals. But every farmer, everywhere ought to secure at least a small area of alfalfa. It grows more dollars to the acre and to the labor required than any other forage crops.

Low Rate Excursions via the

M., K. & T. Ry., Tuesday, January 20, 1903, to the New Town of El Berta, Texas. One fare, plus \$2, for the round trip; tickets good 21 days. The successful sale of lots to date insures the rapid building for a good town in the wonderful Fruit Belt of east Texas. For full particulars address, James Barker, G. P. A., M., K. & T. Ry., St. Louis, Mo.



Cure Them All

You can cure all these diseases and blemishes easily, thoroughly and inexpensively. You can also cure Curb, Splint, Sweeny and soften enlargements of every description. If you have any such cases to treat, write us. We will send you two big booklets giving you all the information you need. No matter how old the case or what has failed, we will guarantee a cure by the methods the books tell of—methods now employed by over 140,000 farmers and stockmen. Write today.

FLEMING BROS., Chemists, 212 Union Stock Yards, Chicago, Ill.

I SEE THE SEED DROP.

In plain sight of the operator. MATTHEWS—Improved for 1903. NEW UNIVERSAL

Hand Seeders and Cultivators. Used by the most successful gardeners. They do perfect work. Save time and money. Open furrow, drop seed, cover any desired depth, also mark next row. Latest and best Cultivating Attachments. Best material throughout. 1903 catalog describing our full line, free.

AMES FLOW CO., 42 Market St., Boston. For Sale by Parlin & Orendorf Co., Kansas City, Mo.

50 BULBS
25 Cents.

Will grow in the house or out of doors. Hyacinths, Tulips, Crocus, Fuchsias, Oxalis, Jonquills, Daffodils, Dewey Lily, Tuberoses, Gladioli, Chinese Lily, Begonia, Gloxinia, Lilies of the Valley.

—all postpaid, 25c. in stamps or coin. A premium with these Bulbs we will send you a giant collection of flower seeds—over 300 varieties.

Address Hillside Nursery, Somerville, Mass.

To Owners of Gasoline Engines, Automobiles, Launches, Etc.

The **Auto-Sparker**

does away entirely with all starting and running batteries, their annoyance and expense. No belt—no switch—no batteries. Can be attached to any engine now using batteries. Fully guaranteed; write for descriptive catalog.

Motinger Device Mfg. Co. 48 Main Street, Pendleton, Ind.

New way to smoke meat in a few hours with **KRAUSER'S LIQUID EXTRACT OF SMOKE.** Made from hickory wood. Delicious flavor. Cleaner, cheaper. No smoke house needed. Send for circular. E. KRAUSER & BRO., Milton, Pa.

KANSAS FARMER'S NEW WALL ATLAS.

The KANSAS FARMER has arranged with the leading publisher of maps and atlases to prepare especially for us a new Wall Atlas, showing colored reference maps of Kansas, Oklahoma, Indian Territory, the United States, and the world, with the census of 1900. The size of the New Wall Atlas is 22 by 28 inches and it is decorated on the outer cover with a handsome design composed of the flags of all nations.

Tables showing products of the United States and the world, with their values, the growth of our country for the last three decades, and a complete map of the greater United States are given. This is an excellent educational work and should be in every home. The retail price of this New Wall Atlas is \$1.

Every one of our old subscribers who will send us \$1 for two new trial subscriptions for one year will receive as a present a copy of this splendid New Wall Atlas postpaid, free.

Any one not now a subscriber who will send us 50 cents at once will receive the KANSAS FARMER for five months and will be given a copy of our new Wall Atlas free and postpaid.

The Ratekin Seed Co. has an attractive seed-corn advertisement that starts in the Kansas Farmer this week. This advertisement is to remind our thousands of readers that this old reliable seed-house at Shenandoah, Iowa, is in the field stronger than ever before. Last year's record for supplying farmers with the right kind of seed-corn of best and most popular varieties surpassed all previous records, and, at the same time, this corn was laid down to the buyer in best condition for planting. It was largely instrumental in making the best general stand of corn ever seen in this country. History repeats itself. Write for the Ratekin catalogue today.

Low Sleeping-Car Rates to St. Paul and Minneapolis.

The Chicago Great Western Railway has three tourist Sleeping Cars per week to St. Paul and Minneapolis. Rate for double berth only \$1.50. For particulars inquire of any Chicago Great Western agent, or J. F. Elmer, G. P. A., Chicago, Ill.

STOCK-BREEDERS IN SESSION.

The Kansas Improved Stock-Breeders' Association is in session at the council chamber in the city hall. The papers thus far presented, beginning with a masterly address by President Harrington, are of a high order. The meeting which at the time of closing the KANSAS FARMER forms has only got under good headway will have adjourned and been succeeded by the meeting of the State Board of Agriculture before the paper reaches its readers.

The full proceedings of the stock-breeders will be given in the KANSAS FARMER of January 22. The proceedings of the State Board of Agriculture will appear in a subsequent number.

Bermuda Grass.

EDITOR KANSAS FARMER:—I saw an inquiry in a recent issue of the FARMER from a farmer in a western county, about the advisability of sowing several acres to Bermuda grass for pasture. I would advise him not to do it. I have experimented a little with it, and my opinion is it will winter-kill in his locality when pastured. Nothing but hard freezing will kill it. When well established, a continuous plowing of an acre will not kill it. He should have a small piece of the sod sent him by express, and plant and tend it, keeping it free from weeds on his lawn about the house. He can spread it by planting small pieces of the roots or vines, covering lightly with a hoe just before a rain. He will soon find whether it is adapted to the soil and climate.

I would suggest that he plant the ground he has prepared to bromegrass. The Bermuda grass succeeds in northern Michigan, but the climate is more moist there, and it will not freeze out. D. P. NORTON.
Dunlap, Kans.

Stock Gossip.

G. E. Fuller, Morrowville, Kans., will hold a bred-sow sale of Poland-Chinas at his farm on February 2, 1903. The offering will consist of forty head of the smoothest, evenest, and growthiest lot of Poland-Chinas that the writer has seen in one bunch this season. In breeding they are of the most fashionable families, and their individual merit is such as to recommend them to both breeder and farmer. Mr. Fuller has been a liberal buyer during the past season and has made it a point to always select the big-boned, broad-backed, good-coated animals that would match what he already had, and would be of the class that our breeders most desire. This herd is strong in Sunshine and Perfection blood and the sows will be bred to Onward Perfection by Chief Perfection 2d, and to Sunshine Success by Ideal Sunshine. This will be a grand opportunity for breeders for the reason that Sunshine Success is the only Sunshine boar in Kansas. He is by Ideal Sunshine 37885, out of Ideal I. X. L. 123522 who is a Tom Chief sow. The old herd boar Onward Perfection 59045 is by Chief Perfection 2d, by Chief Perfection, he by Chief Tecumseh 2d. He is out of Last Price's daughter 155644, by Ben Wilkes 43477, out of Last Price by One Price. The yearling sows in this offering are by Kansas Union, Chief's Black U. S., Chief Tecumseh 2d, and others of the most fashionably bred families. Mr. Fuller is making every necessary arrangement for the comfort of the buyer in a winter's sale and it will be a real pleasure to buyers to attend. If this is found inconvenient, bids may be sent to the auctioneers or to Mr. Fuller or to this paper with the assurance that they will receive the most careful attention. Read his advertisement on page 80 and write for a catalogue which will give full particulars.

F. Rockefeller, Solder Creek Farm, Belvidere, Kans., has succeeded in getting together a remarkable lot of both Shorthorn and Hereford cattle. On his great ranch at Belvidere he has about 500 head of the most fashionable families in each of these breeds. It will be remembered that his Columbus 17th was given second place at the world's greatest show in Chicago and the volume of letters and telegrams, together with the expression of the live-stock press, give Mr. Rockefeller the assurance that Columbus 17th could well have been given first place in this competition. Besides this great bull, he has Elvira's Archibald 75998, Jack Hayes 2d 119761 and Jack Hayes 3d 124109, herd headers. In Shorthorns the results already attained in the herd are equally remarkable. With Duchess and Bates foundations and Cruickshank tons he has built up a Shorthorn herd that is a credit to Kansas as well as to the herd. He now has at the head of his herd the pure Cruickshank bull Jubilee Stamp 128017, and the pure Cruickshank Orange Dudding 149469. In addition to this Mr. Rockefeller's great ranch is the home of Polled Durhams of no mean quality. Heading this herd is Scotch Emperor 133646 and Ottawa Star 113109. His aim has been to establish the best herd possible of all these breeds so that Kansas may lead the world. Many noted show-animals are in the herds. Mr. Rockefeller is an ex-president of the American Hereford Cattle Breeders' Association and has been active in forwarding the interests of all the breeds represented on his ranch. The ranch is the best equipped one in the United States, if not in the world, and any one would be richly repaid for visiting it and would feel sure of a cordial welcome whether he should purchase at the time or not. Mr. Rockefeller spends a goodly portion of the time on this ranch and is a person whom it is a pleasure to meet. We feel sure that breeders of the

South and West will find a surprise in store for them when they learn of the quality and breeding of the animals that may be found upon his ranch at this time. Notice his advertising card on page 78, and write him for detailed information.

Publishers' Paragraphs.

Many readers of the Kansas Farmer have reason to be grateful for money sent and bargains secured through our advertisers. This is notably true of order-takers sent Dept. 135, Century Manufacturing Company, East St. Louis, Ill. They handle a very large line of farm and household specialties. Watch out for their announcements. See what they have this week on page 57.

McBeth & Kinnison, seed merchants, Garden City, Kans., have made themselves and their town famous by reason of their magnificent trade and endeavors in behalf of alfalfa-seed, their specialty. Their prices are always right and alfalfa-seed fresh and reliable. They can fill orders in either bushel or car lots, and other feed seeds in proportion. Do not hesitate to send them your order and mention the Kansas Farmer.

Mr. B. F. Smith, of Lawrence, Kans., has long been known as a fruit-grower and berry-specialist. He now inserts an advertisement in the Kansas Farmer calling attention to the plants that he has been so successful in raising for so many years. Mr. Smith has just been elected as a director for his district in the State Horticultural Society and is a man with whom one can deal in quality of stock and in prices made thereon. Notice his advertisement and write him at once.

Endorsed all Around.—I have used Tower's Surface Cultivator in Illinois and Iowa and I own with equally good results. I find they are of greater benefit, if possible, this short, wet season, than they would have been ordinarily. My corn was cleaner, grew faster, had better stalks, which produced larger, more perfectly filled ears than any in my neighborhood cultivated with shovels and disks. My adjoining neighbor raised thirty bushels per acre of soft corn with disks. I raised sixty bushels good, sound corn with the Tower. Fellow farmers, my advice is to adopt this method of culture and plant good seed if you would make a success on our valuable lands. Theodore E. Boshough, Storm Lake, Iowa, December 3, 1902.

Every reader of the Farmer should send for a copy of Trumbull & Co.'s catalogue of field, garden, and flower seeds. It is free and their motto is, "Good treatment to everybody." This company was established in 1872, and is the old reliable seed-house that has enjoyed a liberal trade which is constantly growing. There is not a State or Territory in the Union in which this house does not sell goods. They believe that "the best goods are cheapest," and seeds must be vital to produce results. They occupy a brick building of four stories and basement on St. Louis avenue, which is now full of goods and they have been compelled to rent outside storage to carry their immense stock. Mr. Trumbull, who has always been at the head of this firm, is constantly at his desk, where he courteously receives his patrons.

New Discovery a Success.

Among all subjects of interest to the farmer none are more discussed at the present time than the remedy called the corn-stalk disease preventive. This remedy, though on the market but a few months, has brought about such results that it insures that it has come to stay. Until this time corn-stalk disease was dreaded by every farmer who had stock running in a corn field. When placed on the market it was looked at by almost everyone as a fake remedy. As the season advanced and the time came for the farmer to turn his stock into the corn-field many losses were heard of from all over. This was the time when this remedy was given a thought by those who had some losses from corn-stalk disease. These skeptical gentlemen, after considering that the manufacturers were offering them a safe and fair proposition, purchased a pall and fed it according to directions and put their stock back in the same field and not a single loss occurred thereafter. This remedy is today being sold under such conditions that no farmer, stockman or cattle raiser can afford to not give it a trial. Their guarantee is, "It must do what we claim for it or the money is refunded to the purchaser." To this date the manufacturers have had to refund no money. The manufacturers, the National Cornstalk Remedy Co., Omaha, Neb., are so confident that their remedy will do all that is claimed for it that they will furnish the remedy in the first instance if so desired, and if after use it does not prevent the corn-stalk disease the one ordering the same need pay nothing. Is this not a safe and fair offer that no one need fear to accept? See their advertisement on page 64 and address them for anything you would like to know about their remedy before giving it a trial.

R. H. Shumway, Seedsman.

One of the reliable seed houses which enjoys a large and rapidly growing trade is that of R. H. Shumway, of Rockford, Ill. We presume if Mr. Shumway were asked to name the chief element which has contributed to his pronounced success he would readily answer that it is the close personal attention he always gives to securing and supplying to customers the best to be had. Certain it is that from the irksome duty of preparing the seed catalogue down to the selecting and shipping of the smallest packet order, no house can give the details of the work a closer or more careful scrutiny than is exercised by Mr. Shumway. No such thing as substitution of other varieties than the order calls for or of seeds of doubtful age or inferior quality is known to him. He possesses sufficient of that old-time sterling integrity to lead him to believe that it is the best policy to fill orders in strict accord with their requirement or not at all. His course seems to be amply justified in the satisfactory growth of his business. Parties sending for the Shumway catalogue



WHEN HORSES HAVE COLIC.

or a valuable animal is about to die, you don't want to waste time in going for a veterinary. Then is the time to be prepared. You are prepared if you have in the house a bottle of

Watkins' Vegetable Anodyne Liniment

For Man and Beast. Unequaled for Colic, Cholera Morbus, Diarrhoea, Flux, Rheumatism, Cuts, Cramps, Sore Throat, etc., in men and for Cuts, Sprains, Scratches, Colic, Bruises and Sweeney in animals.

This Man Saved Two Horses.

Chadwick, Ill. May 1, 1902. "I have used Watkins' Vegetable Anodyne Liniment for a number of years. Have found it to be one of the best remedies for Colic in horses I have ever tried. Saved two valuable horses with it last summer. I always try to keep it on hand." MAHON A. MERKEL.

One person can secure one copy free of Watkins' Home Doctor and Cook Book by writing The J. R. Watkins Medical Co., 28 Liberty St., Winona, Minn.

Responsible, active young men can secure steady paying employment by taking the Watkins Agency in unoccupied territory. Write for it to-day.



Guard Against Failure. Plant Griswold's Seeds.

Our Garden Seeds are clean, fertile and select. They grow. They yield big and true to type. We have a personal interest in sending out the best, and we are mighty careful you get the best of what you want.

Our Seed Corn

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will find everything it contains properly described as to merit, season, etc., and are sure to be honestly dealt with in ordering from it. His advertisement appears in another column. It will be noted that he makes it a rule to send free with every order, packets of rare and extra kinds of seeds. It will pay the seed-buyer to write for the Shumway catalogue before placing an order.

Our illustration this week is made from a photograph of well-sinking and prospecting machinery which is being sent to South Africa for the development of their water and prospecting problems, being built by the American Well Works, Aurora, Ill., U. S. A., which firm are pioneers in the West of this style of machinery. It is of the most simple construction consistent

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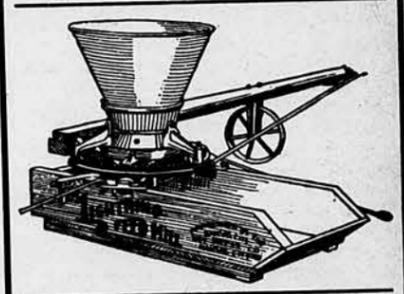
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Home Adornment.

(Continued from page 55.)

ed in the house to make home. These general utility furnishings can be made as ornamental as possible. For example, in the kitchen instead of using ordinary tin and iron utensils, use the pretty granite wares so much in vogue. Money, taste, location, occupants play an active part in adorning every department of the home. We will at this time consider a home furnished with an ordinary amount of taste, pleasant, convenient of location, with at least four occupants, "For without hearts there is no home." Our house will have a cellar, kitchen, pantry, dining room, sitting room, library, sleeping rooms, guest chamber, sewing room and bath room. This house is not heated with a furnace. Neither has it gas nor electric lights but it has rooms and a yard, and these rooms are to be adorned and the yard made attractive. We owe something to those who go in and out of our homes, to those who pass by on the highways, and by making our homes and surroundings as attractive as possible we may encourage others.

Mrs. M. says the cellar should have good drainage, thorough ventilation, and light. She would white-wash the walls, cover the floor with cement, hang shelves for fruit jars and screened shelves for milk. The vegetable cellar should be provided with bins.

Mrs. S. says, when furnishing the kitchen remember that a large proportion of the comforts of life come from this department. Have plenty of light and air. Decorate the walls in tile pattern or marbled paper, the floor with inlaid linoleum. Have a good stove or range and plenty of closet room, not necessarily pantries, but plenty of shelves with good tight doors with a small closet for brooms, dust cloths, etc. A table covered with zinc is a very useful article.

Mrs. P. would have a gasoline stove beside the ordinary cook stove or range; a table with apartments for all cooking ingredients, a closet with all kinds of cooking utensils; plenty of hand towels, dish towels, dish cloths and a dish mop.

Another lady would have in her kitchen a universal food chopper fastened to the kitchen table for use at moment; about three sizes of mixing bowls, egg-beaters, spoons of all sizes, of wood and metal, plenty of granite kettles and pans, a clock, a good side bracket lamp with reflector, a sink with a pitcher pump over it connected with the cistern, hardwood floor well oiled with strips of good old-fashioned rag carpet in front of working tables.

Another admits she has a hobby and it is dish-cloths. She says this may seem too trifling a subject to come under home adornment, yet when one considers that it is a well-known hiding-place for lurking disease germs, this long-despised domestic article acquires a new importance and it is well to guard against the approach of the enemy. Three things are to be taken into consideration in the selection of a dish-cloth, convenience in size and shape, durability, and material which can easily be kept clean. But the greatest of these is cleanliness. After years of experience and a trial of all materials included in the dish-cloth curriculum, she has finally solved the problem to her entire satisfaction, finding all requirements met in the home-made knit dish-cloth. This is made of the strings saved from store parcels tied together with the old-fashioned "weaver's knot," knit upon large wooden needles in simple garter stitch about ten inches square. These knit dish-cloths are very durable and can even be mended when they finally come to grief—and holes.

Mrs. L. would have her pantry adorned with a flour bin, a shelf for kneading bread, bright tins, and with all cooking materials properly labeled so that no mistakes, such as using Composition powder for ginger, Epsom salts for baking powder can be made. She would have a china closet for china and silver.

Mrs. P. would have an eastern exposure for her dining room with the morning sun for a tonic, a few pots of flowers to rest the eye, and brighten up and decorate the room. The appointments should be simple and substantial. The newest wall papers for this room are very decorative. Pictures of water scenes, fruit, and flowers, a grate in which a bright fire may burn on dull days; the old-fashioned candelabra and vases on the mantel, a sideboard with convenient drawers for silver and linen, a china cabinet with

pretty modern plates and cups interspersed with a few treasured pieces of grandmother's or mother's old-fashioned ware. A rug under the dining table, sunlight in the hearts as well as the windows, and the plainest meal may be a feast without any of the ornamental furnishings.

Table decorations add much to the dining room adornments, and a growing plant with crepe paper cover for the pot makes a pretty centerpiece when cut flowers can not be obtained.

Not every home has a room that can be used exclusively for dining room, and the sitting room and dining room are combined in one. As the sitting room is the living room in any small house, especial care should be bestowed upon it. The first essential of beauty in this room should be cleanliness. Adorn the windows with pretty white curtains, the floor with bright rugs. Have comfortable chairs, a lounge with a generous supply of pillows with washable covers. Have a warm fire in winter and a good bright lamp for evening. Have pictures on the walls that appeal to different members of the family. Have a place for the current papers and magazines; a clock and some bric-a-brac will not be out of place. If this room must needs be used for dining room when company comes, have an extension table than can ordinarily be used for the family to gather around the evening lamp and can be extended and set for the occasional meal. This provision will make the entertainment of visitors very much easier and more satisfactory to the busy housewife.

Mrs. H. says that even the poorest of us in material resources may have his book treasures stored in a small room. Such a room becomes the modern library. This room needs no other adornment than the books, a few chairs, a table, a window seat with pillows where one may drop down with one's favorite author and read and rest. The shelves against the walls are more in use now than the book-cases with glass doors. This room is usually the favorite resort of the family.

Since a bathroom is not only a luxury but a necessity, the most remote country home may have one—should have one. For convenience, where city water works or windmill pressure is not obtainable, this room should have a door opening into the kitchen. A coal-oil stove will heat it to a high degree of heat that is very comfortable for bathing and unpleasantly hot for one in ordinary clothing. A little pitcher pump set at the end of the porcelain bath tub on a shelf and connected with the cistern will prove very satisfactory and ornamental. The hot water may be carried from the kitchen although there are expensive and very ornamental equipments for heating the water in the room. Freezing and bursting of pipes is the bane of country water service, but simply throwing up the handle of these little pitcher pumps opens the valve, allowing the water to run back into the cistern. A very little priming in the morning and the pump is ready for use. The porcelain bath tub, stationary porcelain wash basin, a mirror, a shelf for combs, brushes, etc., are the necessary equipment. Tile paper in light colors for wall decoration for this room, with all the wood work painted white even to the floor is recommended. In most houses hard pine in natural finish would be preferable, nickel towel racks and soap dish with a linen closet and medicine chest at one end. By rubbing with a cloth saturated with coal oil or gasoline the porcelain articles may be kept clean and white. The medicine chest is not only ornamental but should be filled with things necessary to relieve suffering until the doctor comes. The chest should be securely fastened to the wall, convenient to reach, but out of the way of small children. The inside adornments should be a bottle each of camphor, witch hazel, paregoric, Jamaica ginger, peppermint, good cough medicine, liniment, bromo quinine, quinine, Trask's ointment for croup, vaseline, court plaster and a medicine graduate. A hot water bottle should hang on a hook on the outside of the chest. A one-burner oil stove or a pocket alcohol stove should be in a convenient place so that water can be heated quickly to relieve suffering.

Sleeping apartments are a very important part of the home. The rooms should not be small but airy and light. The only adornments needed are prettily papered walls, the necessary furniture, a closet, and a great convenience as well as ornament is a cedar chest prettily covered in bright material with some pillows, to be used as a seat. Among the latest bed



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room furnishings the hygienic metal bed suited to any pocket book takes precedence in this practical age. If there is not a downstairs bedroom one of the convenient folding beds would adorn any room to be used in case of sickness or for old people who can not climb stairs easily.

An exclusive guest chamber, simply furnished, is a boon to the home-keeper who has much unexpected company.

The sewing room should have an oiled floor. The general utility articles of this room, which may be as attractive and ornamental as one wishes, are a good sewing machine, folding table, lapboard, and sewing chair.

Curtains add much to the furnishings of the home. Adorn the windows of sleeping rooms with white sash curtains. Long curtains of lace or net are ornamental in the dining and sitting rooms. Net in Arabian color is the latest and harmonizes better than ecru with most furnishings. Heavy colored draperies of odd patterns are suitable for the library but should not obstruct the light.

Hard wood or painted floors with rugs are desirable. Fur rugs harmonize with any surroundings, but the cheap quality has a sad trick of shedding hair, and even the high-priced ones are not guaranteed against the moulting process. Floor coverings have much to do with the appearance of a room—many small rugs diminish the apparent size.

Many of the art squares are very artistic in designs and colorings. Grilles are an adornment that may be used any where in the house across doorways, corners, or bay-windows.

Screens are both ornamental and useful and can be used to hide many unseemly sights.

While there are many other adornments for the inside of the house that are of interest, but which can not be given place here, we must not neglect the outside of our house, but give it a coat of paint of suitable colors for the location and surroundings. Colors that will be restful to the eye of the passerby and that will harmonize with the architectural design of our house. The yard must be free from loose papers, old brooms, farm implements, sticks, and in fact anything that is unsightly and untidy.

Trees, shrubs, and flowers should adorn the yard.

We have adorned this home as best we could in the time occupied, but with all its conveniences and adornments it is very poorly decorated if it has not the adornments of which Charles Dickens says:

"They are idols of hearts and of household, They are angels of God in disguise; His sunlight still sleeps in their tresses, His glory still gleams in their eyes; Oh! those truants from home and from heaven, They have made me more manly and mild. And I know how Jesus could liken The Kingdom of God to a child."

Without the children in a home it hardly seems worth while to adorn. And what could adorn a home as good, thoughtful, obedient, polite, gentle, kind, loving children adorn it. The conveniences, the books, the pictures, the plants, the trees, in fact the whole home and its surroundings should be such as to make them grow into manly men and womanly women, so that the future homes of our country may be adorned with loyalty, temperance, honor, and peace.

Stocks.

PROF. H. M. ROBERTS, KANSAS STATE AGRICULTURAL COLLEGE.

The difficulty in the way of the general commercial propagation of some of the best varieties of our cultivated native plums has been given considerable attention. While nearly all varieties of Japanese and European plums have worked readily upon peach stocks, the natives have given poor "take" of buds on peach. Marianna stocks have been more useful, a much larger "take" being secured, but as some native varieties are of slow

growth during the first season the Marianna roots are very liable to prove troublesome, requiring frequent and regular sprouting to prevent the overgrowing of the buds. Grafts have shown the same failing as buds.

The best takes of Americana buds and grafts have been secured on Americana seedling. The tendency of these stocks to sprout after a few years' growth in the orchard makes them more or less objectionable for a trade which demands a non-sprouting stock. If it shall be proven that these trees are longer lived and more successful, the objection to them will doubtless be much less, especially as the careful cultivator fights sprouts as weeds and gives little chance for the growth of a thicket.

The work of investigating the pollination of fruit blossoms has given some hints that may prove useful. It seems probable that wind is but a small and extremely uncertain factor in pollination. The honey-bee is doubtless the most numerous, hence the most useful, and without doubt the principal agent of pollination, but numerous other species have been noted as probable agents in pollination. The fact that insects work but little in damp cold weather doubtless accounts for the failure of fruit to set during such periods. Examination of blossoms after heavy wind storms, especially after dust storms, has shown the blossoms injured in a variety of ways, the more frequent being the injury of stamens and pistils so as to lessen their vitality, and the combination of dust with the viscid fluid excreted by the pistil.

The so-called affinity of the varieties for pollen was found to vary considerably, our ordinarily free bearers being readily fertilized by almost any pollen, Ben Davis, Missouri Pippin, Rawley's Genet (as American Pomological Society wants it), Winesap, and other common sorts giving good sets from nearly all crossings. The pollen of these varieties has not proven so potent as the pollen of varieties commonly classed as shy bearers. Ben Davis furnished pollen that was very slow in potency. Jonathan, Cooper, Early Huntsman were the first in order of potency.

The influence upon the resulting fruit was more or less noticeable. The character of the seed-forms seem to vary more than external characters. But the fact that not a fruit produced by self-pollination reached full maturity makes it hard to compare, except by the usually recognized forms. The work of a few seasons is hardly sufficient to form the basis of a final report, but these are some of the results that are too nearly constant to be regarded as accidental.

Tests of Varieties.

PROF. H. F. ROBERTS, KANSAS STATE AGRICULTURAL COLLEGE.

From the results of a number of tests of seeds from various parts of the country it seems that garden seeds from the north-central part of the United States are better for Kansas planting than those from Canada or the South. During the past season it would seem that conditions rather favored the Northern-grown seeds, as the rainfall was comparatively heavy and the temperature more than ordinarily cool. But the plants from Northern seeds were not equal to New York or Iowa grown, the beans and peas grew rankly and the root crops grew a greater proportion of top than did seeds from the central part. Seeds from the South seemed less vigorous and had less power to resist changes than the others.

The tests of methods of onion culture, extending through a series of years, go to show that the method of planting the seed early in the season in a hot-bed and transplanting to the field after good growing weather is well assured and is more nearly certain in our climate than the old way of sowing seed in the field. The cost has averaged rather less for the transplanted blocks, the transplanting costing less than the hand work in weed-

ing, for though we have started with clean ground and started the wheel hoes early some hand work has been necessary. We have found it better to transplant when the ground is in good condition though the plants are a little small or a trifle larger than has ordinarily been recommended, cutting back the tops at least half.

Root crops have been among the most certain of garden crops. With clean, frequent and thorough culture, fair crops have been grown, no season excepted. With an irrigation or two, just when it was badly needed the yield has been considerably increased and the quality improved. The improvement of quality is most marked in beets, parsnips, and salsify, the irrigated blocks having been uniformly freer from woody centers, and the flesh more evenly grained. Slow sale has been the rule for most seasons, the potato is given preference on every table and it is only as side dishes that the others appear upon American tables. When the potato crop is short the wise gardener sows turnips, but in most markets a place may be made for more vegetables year by year. In 1899 the Experiment Station grew some five or six hundred pounds of salsify and found it hard to dispose of the crop. Sample messes were sent to regular customers and a trade worked up, and now ten times that quantity can be more readily marketed than was the first crop. Most gardeners have a fund of similar experiences; egg-plant and cauliflower have had similar experiences in many markets.

With large-growing varieties of tomatoes we have had best success by double rowing them, setting two rows three and one-half feet apart and the next row six feet, leaving a space for pickers to work, in each case a greater yield per acre has been secured, owing we believe to the better condition of the vines after picking commences.

Our garden soil is good Kaw Valley bottom, but best results have followed the systematic application of well-rotted barnyard manure. The fact that few of the garden crops have increased their yield with the application of special or complete commercial or chemical fertilizers seems to indicate that it is in texture rather than plant food that our soils first need improvement.

Celery is the only garden crop which has shown any decided increase in yield upon the application of chemical fertilizers. The application of nitrate of soda at the rate of three hundred pounds per acre gave an increase of from 20 per cent to 33 per cent in the yield and a very noticeable improvement in texture and flavor. Our celery was commented upon by nearly all users as being superior to any other offered on the market. California, Colorado and Michigan had none better. The soil was in as good condition as tillage and well-rotted manure could get it. We shall repeat this test the coming year on a larger scale. The nitrate was applied dissolved at one, two, and three applications and in varying quantities, but from the season's work three hundred pounds gave best results. Little difference resulted from the amount used at one application.

Celery plants left in the cold frame six inches apart in the row, row eight inches apart, grew nicely and made a fine crop; one bed six feet wide by twelve long would at the rate of yield secured, furnish an ordinary family with a plentiful supply. The quality was inferior to that blanched with earth, but the appearance was somewhat better, the leaves being intact and perfect in form. Practically the same result has followed the blanching with boards practiced and reported upon in previous years.

Variety tests with sweet potatoes in heavy and in light soil repeat the results of former years that Yellow Nansemond and Yellow Jersey are reliably the best for our section, with Red Jersey well placed in the list. The returns from shipments made by some of our growers indicate that Red Jersey is well received in Western markets. The old question as to whether Nansemond and Jersey grow in the same hill is yet a matter of discussion, not so intense as Gano vs. Black Ben Davis, of course, but interesting. Seen in the pile Nansemond seems to look a shade brighter yellow than Jersey, but in various soils the difference is less well marked. The variety Vineless has been rather variable as to yield, some seasons being far below, and at other times well up with other varieties in point of yield.

The adaptation of the peanut to practically the same soil as the sweet potato, and the fact that it is a great nitrogen gatherer, has led to the inau-

guration of a test as to the value of a rotation of the two crops. It is too soon to draw conclusions regarding this.

Plant Breeding.

PHILIP LUX, SHAWNEE COUNTY.

We are living in a progressive age, and the world has a right to demand that horticulturists use scientific methods.

The agriculturist selects the best seed for each year's planting. The stockman selects the best calf from the herd and the best pig from the litter, and these are kept for breeding. The chicken fancier, by judicious cross-breeding, establishes fixed colors and standard breeds.

There is nothing which will respond more quickly to scientific breeding and which will give better returns for the labor so expended than plant life. Our small fruit raisers adopted such methods years ago and they have been very successful. Of course the first requisite is good soil, good location, and good cultivation. But what is the method generally practiced by apple raisers? We go to the nurserymen, purchase our stock and plant our orchards, regardless of breeding, requiring only that the trees be true to name. Have our nurserymen bred our apples up or have they bred them down, by the method generally employed, of selecting their scions and buds from nursery trimmings or anywhere, regardless of merits, just so that they are true to the name? Is it a wonder that, after years of hard labor and patient waiting, our orchards often prove a disappointment? Since the full benefit of an orchard is reaped only once in a life time, should not we be very careful in selecting our stock?

Several years ago most of our horticulturists discarded the Winesap apple from our commercial list on account of the smallness and disease of the fruit. For the same reason the Missouri Pippin can scarcely be retained any longer as a commercial apple. Our great commercial apple, the Ben Davis, and several other kinds as well, are becoming unreliable.

I believe that had our nurserymen, years ago, selected their scions from young, vigorous bearing trees which were free from disease, our Winesap would to-day be ranked among the first on our commercial list.

I believe that all fungous diseases with time become fixed diseases, increasing and spreading by careless propagation.

Nature has been very kind to us and there are yet to be found, in almost every neighborhood where apples are largely grown, trees of special merit and free from disease.

I would suggest to any one who contemplates planting an orchard, that just at apple-picking time you go through your neighborhood and select, of the kinds which you wish to plant, the trees which have special merit.

Mark such trees, and at the proper time get your scions from such trees and graft them or get some reliable person to graft them for you. From these you get the stock for your orchard.

We should demand the same from the nurserymen, and they should keep a record of when, where, and of whom they obtained the scions. Then they could furnish a pedigree with all stock purchased of them. If a step in this line be taken it would obviate many of the disappointments in raising apples.

Irrigation for Fruit.

H. E. GOODELL, SHAWNEE COUNTY.

It may not seem in good taste to some to say anything on the subject of irrigation at a time when nature is doing the business for us much better than we could possibly do it ourselves; but I have noticed, if we want protection on life or property in the way of insurance, we must make all necessary arrangements at a time when there is no indication of needing it. So with irrigation. If we wait until the drouth has really set in before we have made our plans and are ready to execute them, it will be very little irrigating we will do.

But just how extensive the preparations should be made with profit in this location I am not quite ready to answer at this time—hope to in the near future.

Will give results of some experiments on this line and leave the matter for your consideration.

During the drouth of 1901 I watered thirty Winesap trees, that had been set eight years, first watering about the middle of June, second and last was done two weeks later. The soil was worked over soon after to retain the moisture. We gathered thirty bar-

rels of apples, four out of five grading No. 1—or fancy. The trees went through the drouth in a very thrifty condition. The same trees did a little better this year than last, nature furnishing all the needed moisture and the trees not having exhausted themselves in maturing their crop during the drouth of last year. Apples graded five out of six No. 1, and sold for 60 cents per bushel on the tree.

Now comparing these trees with others of the same age and variety in the neighborhood that yielded about the same number of bushels in 1901, leaves a credit of fifteen barrels on the thirty trees, or \$27 for thirty barrels of water. I consider this a low estimate, as this only covers the amount already received and I expect to get better results for some time from these trees. I do not think that a tree or plant can receive any serious injury and be quite as good as it would have been had it not received the injury.

In the spring of 1896 I set a block of 300 Ben Davis trees, setting the space between the trees with strawberry plants at that time, thus giving the trees full benefit of the cultivation and irrigation given the strawberries, and the trees in turn affording good protection to berries from frost and wind. I kept the ground in berries the first four years—this leaving but two irrigations (in 1901) to charge to the trees. The trees will average six inches in diameter and are very thrifty and free from borers. I have gathered over fifty barrels of apples and expect to gather full crop next year. I estimate that I have gained two years' time on this orchard by irrigation, or \$600 on the 300 trees, less \$15, cost of two waterings, leaving a credit of \$585 to irrigation.

As to raising strawberries by irrigation, our esteemed friend B. F. Smith, of Lawrence, says in part in the thirty-seventh annual report of the State Horticultural Report of Missouri, 1895: "It was about the 10th of May I observed that my strawberry plants and the young crop of berries nearly ready to ripen, were perishing for want of water. I had 700 feet of pipe laid through two acres of berry-patch, using water from city hydrant. The first irrigation was on May 17, using 17,000 gallons of water; the second application was one week later, using 16,000. Without the use of water I estimated the crop would not have exceeded 75 crates, but by the use of water I placed 225 crates of fine berries on the market. It is safe to say 150 crates of berries may be credited to my irrigation experiment—150 crates, at \$2.40 per crate, the average price of my berry crop, gives me \$360, less \$69.80, total expense of irrigation, making \$290.20 net for Kaw River water." Mr. Smith says in conclusion: "Three or four days after the water fixtures were ready for use we had a severe frost. Had I irrigated ten days sooner my berry-patch would have yielded between 400 and 500 crates."

To carry out Mr. Smith's estimate a little farther he realized \$3.09 for every six barrels of water put on his berries.

I am satisfied that I have had equally good results from the application of water during the fruiting season. I have in mind a very successful fruit-grower, who hauled water from a creek to water his fruit trees and strawberries, and his fruit far excelled that of his neighbors, this opinion coming from reliable dealers in Topeka.

I believe nurserymen agree that the dry freeze of last winter was responsible for the great loss sustained by all fruit-growers. I leave the subject for your further consideration.

Commercial Gardening.

A. CHANDLER, RANDOLPH, MO.

Commercial gardening is a subject too broad to be treated in the scope of this paper. To speak of some of the leading products is all that I will attempt at this time.

The potato stands first in the vegetable kingdom. The rich, alluvial soil of the Kaw Valley is the ideal location. The land should be plowed in the late fall, as exposure to frost is all important. Another point is to be ready to plant as soon as the frost has disappeared. In nearly all cases, land intended for use the coming year should have a crop of cow-peas, to supply nitrogen, and turnips, to supply humus to the soil. Where potatoes follow turnips the chances are that you will receive from 10 to 30 per cent more yield as your reward.

For quality the Michigan Rose is a leader. Its snowy whiteness is not excelled. For commercial growing, the Early Ohio stands at the head, and

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They burn fresh cold air and that means strong, pure white, steady light. For perfect convenience and safety, there is nothing that will so certainly suit your needs as

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the past year was a record-breaker. Three hundred bushels per acre was not uncommon.

As a labor-saving machine, the Aspenwall potato-planter is without a rival. The grower must look well to the quality and condition of seed; a good yield can not be obtained without these requisites. Some plant about July 10 to secure vigorous seed, the extra quality compensating for deficiency in yield, a vigorous tuber being the end sought for.

After planting, cultivate at once. Smoothe down the land with a plank drag, harrow and cross harrow, if necessary. Do not stay away from your field ten days or two weeks to do all the other jobs. Freedom from weeds and grass at this stage generally insures a crop. Market reports must be studied closely; avoid a crowded market, and whenever it is possible sell at shipping station in car lots.

Cabbage should receive a fair share of attention from commercial growers. Start plants late in February, in hot-bed, transferring to open field when the weather admits. As many as 10,000 can be grown upon an acre. Wakefield and Winningstadt are desirable early varieties; follow these with Henderson's Early Summer and Flat Dutch varieties. Methods of destroying the cabbage butterfly are resorted to. Salt is not satisfactory. Paris green is dangerous. Lime is used with some success in dust form. A dash of hot water in the early morning has proven successful when used with care and judgment.

Tomatoes are more popular today than ever. The market is filled with them early and late. Ninety-seven carloads reached Chicago in one day last spring. Devices to secure an early crop are many. Plants should be transferred from a hot-bed to a cold frame, thence to the open field. Several hundred small boxes should be secured to protect plants from cold wind and late frosts. Popular varieties are Champion, Stone, and Perfection; the much praised Ponderosa is a back number.

A bed of asparagus ought to be grown by every family, and for two months it claims a place in the market. Early cutting bringing from 75 cents to \$1 per dozen bunches. But the vegetable list is large.

The fragrant onion is in the market all the year, bringing good prices. Acres of them may be seen in the vicinity of Kansas City.

The most popular, and, some years, the most profitable, late vegetable, is the butter bean. It sells for from 80 cents to \$1.25 per gallon this year; it requires a rich, warm soil.

I might write a chapter on the watermelon, also the Rocky Ford or Gem melon. Fortunes are being made with a crop of Gem melons. The man who will devise a remedy for the melon louse will confer a great favor on the melon grower and perhaps secure a good competency for himself.

A few words in regard to celery. Celery growing will require a specialist, but let me encourage him to press on. Michigan celery does not supply the demand. Train loads of it sent from the Pacific coast in the early summer do not supply the market. Its daily use throughout the year is growing. When you can meet the

right conditions for its culture, it is a money-making crop. I have said nothing concerning the use of vegetables as food from a hygienic standpoint, but a better knowledge of the health-giving qualities of our cereals and our many vegetables is desirable; and now that meat is so expensive, it will be a good time to put ourselves in training for a better acquaintance with the whole vegetable kingdom.

Marketing Fruit.

B. F. SMITH, LAWRENCE, KANS.

Twenty-five years ago there was no question or guessing about the markets for our fruit. There were all around us consumers who came to our orchards and berry-patches and paid the prices we asked. But in this great new world, there is no solid ground.

Wonderful changes are going on all around us. Our calculations may be upset anywhere and at any time. We all remember the low prices of stock and agricultural products in the later dates of the eighties and more than half the nineties. The low state of the markets for farm crops drove hundreds and thousands of farmers into the ranks of the fruit-grower. So it is that we older veterans have a large following; and very recently men of large capital and syndicates of monied men are planting thousands of acres of apple trees and berry fruits.

So it has become a matter of serious consideration and close figuring on the market problem, when the orchards and berry farms of the entire country have a good average crop. When all these syndicate orchards planted the past three years come into bearing, then the cry will be louder for markets where profits can be realized and big dividends declared.

Cold storage cars and cold storage houses have done wonders and added largely to the profit of commercial fruit-growing, but they can not create consumers. The writer may be cranky, but to his mind the future along some lines of fruit-growing, especially apples, is not very bright. Here are the figures that cause my foreboding:

Missouri leads the van of States in apple trees planted in orchards. Her figures are a few thousands over twenty millions, or about six apple trees for every man, woman, and child in the State.

New York is second with fifteen millions and over.

Illinois stands third, with over thirteen and a half million trees.

Ohio is the fourth State, with twelve million nine hundred thousand.

Kansas is fifth in the list of great apple tree State, counting eleven million eight hundred thousand.

Pennsylvania carries eleven million seven hundred thousand apple trees.

There are nine other States whose apple tree enumerations run from six to ten millions of apple trees in orchards. Even poor old piney North Carolina contains nearly seven million trees.

Now as a matter of fact a large per cent of the trees are not yet of bearing age. But when they come into bearing, it will take a fleet of large steamships to convey the apple product across the sea to our European neighbors, provided our friends over there do not boycott our apples for some imaginary insectivorous possibility.

Still another consideration in this great orchard problem is that they are mostly far from the seaboard, which will give the railways the first and largest bite out of the apple.

In conclusion, I see that the older apple-growers with their ten-, twenty-, and forty-acre apple orchards are in the same condition of the smaller orange- and lemon-growers of California. They are forced to sell their crops to the large shippers and commercial dealers, so we will have to do likewise. We can not get the low freight rates on two or three cars that the man can who ships whole trains of cars loaded with fruit. Whenever we can get a fair deal, though seemingly low, we can sell the fruit on the trees, and thus get rid of all fuss of picking and packing; then I would advise selling early in the season. Let shippers take the chances of profit or loss.

The shrinkage by decay in our climate is at least 25 per cent. Then the expenses of cold storage makes a big cut in the deal, so that by Christmas 50 per cent of the crop is gone. If one's crop is large he can safely sell low and thus make the orchard pay a profit above ordinary farm crops.

Again, for one to know how and when to sell he should be thoroughly posted on the crop conditions, not only of his own and neighboring States but

of the whole United States. There are several journals published in the interests of fruit-growers about the conditions of the crop. The best ones are the Western Fruit Grower, of St. Joe, in the West, and the Practical Fruit Grower, of Springfield, Mo., in the heart of the Ozark apple-belt.

In the East there is the Fruit Man's Guide, published in New York, a mammoth weekly journal of advice about commission houses and the markets of the world.

Does This Society Need an Experiment Station?

A. H. GRIESA, LAWRENCE, KANS.

This subject was referred to in a discussion of the society last year, and at the request of your president I agreed to present this paper. The most correct Chinese are they that are most faithful to habits of father or great grandfather. This is to some extent true of the people of all the old countries; the more it is true, the less progress, thrift, or intelligence of those people, however much culture they may have attained in certain lines. We Americans differ in that we pick up new ideas, new thoughts and ways from friend or foe and adapt them to our work. We put in practice new ways almost intuitively and scorn the old moss-back. This nation has made large progress as the result of observation, of thoughts going from the rostrum and the press. In this country we have made special progress since the passage of the Hatch bill in Congress making liberal appropriations for the agricultural colleges of every State and Territory. While in these colleges much has been done, only a few have seen any result, and the mass of people have hardly sighted the promised gain. The object of an experiment station is to experiment, to try new ways, things, work, investments and time. Such work at times is like groping in the dark, it leaves the result in uncertainty, often in temporary failure, but it requires study, thought, instinct, natural or educated talents. The general results of testing leads to advancement, as is in evidence by the people assembled here, or take all of Uncle Sam's kin, if you please, for a demonstration. I fancy I hear some one think, "We have a station, what more do we need."

We have the Agricultural College and it has done excellent work, but it has been mainly on the line of farming—a very important help. For horticulture it has done but very little. There is room for a station, to be under the control and direction of this society, to work on the many disputed points that yearly arise, to meet the demand for improved fruits, for testing the merits of new kinds of nursery stock offered in the markets to planters, and not leave each one to try his luck on uncertainties. A station under the control of the society, managed by a competent man, would soon change doubtful efforts to sure ones. The higher attainments of the art of better horticulture would be in reach of all fruit-growers of the State. The comparative merits of varieties of any fruit, forest, or ornamental trees, and the soil and climate best adapted to the same, are of vast importance to the planters of the State or Nation. The improvement in quality of any fruit would mean an increase in the consumption and sale-price of that fruit.

The originating of new fruits so far has been largely by chance, and the introduction has been slow and uncertain. In all this mist of darkness with no reliable help, who will claim that good progress has not been made? To originate new fruit of superior types is in demand, and is being worked for in the station of the Iowa State Society, and by individuals. It is being done in Missouri by the College Farm, and their new station at Mt. Grove; it is being done in other States. We need fruits of special merit such as we have not now, a Jonathan, a Grimes, or Spy that would ripen later and keep till spring, as the Ben Davis and many others do; or if we could rely on an apple like the Spitsenburgh or King to please the appetite in midwinter, or could test the many ways of spraying, or new ways of combating insects, of culture, or of irrigation in the eastern part of the State—all these are questions of importance to be settled. A station by this society, controlled by one in sympathy with its needs, could do wonders for it. This man should not be a politician, but a competent man with experience and ability—a devoted horticulturist up in all details of the work by experience and education, and he should be paid by the State.



The Hatch bill referred to above provides for the payment by the National Government of \$15,000 to each State and Territory, and an increase of \$1,000 each year till the sum of \$25,000 is reached, to endow an agricultural college in the States, and it seems that some arrangement might be made with the regents to divide the work on this line and set apart some of the appropriation to pay for it, and let the reports be printed and published from the college for the benefit of the State. That would relieve the college of work, enlarge its scope, and we, as a society, would get special work that is new to us.

To do this, the question is, is it better to start out with owning the farm, or to arrange with one that has the farm already equipped and merely pay him for the work? In the first place it would require the ownership of a desirable farm, planted to trees, with suitable houses, water facilities, implements, and the many expenses incidental to such work, then it could be kept for all time under the same management. If merely a place is selected and the man paid for his work, it would reduce expenses, and might for the first decade give good results; but to own one would be most satisfactory in a long term of years.

I merely present these thoughts for you to consider and to use for the best interests of the society, the State, and the Nation.

The Law of Heredity.

F. L. KENOYER, INDEPENDENCE, KANS.

When God created the earth and filled with the myriads of living beings he established a law governing their existence and development. This law that is as fixed as the law of gravity that holds the universe together, has been revealed to us by the mouth of God in these words: "Let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit after his kind, whose seed is in itself upon the earth. Let the earth bring forth the living creature after his kind, cattle and creeping things, and beasts of the earth after his kind; and it was so." This is the law of heredity. There is no law governing our existence of so great import as this. Upon it hangs the weal or woe of all mankind. The prosperity of this the happiest, the most prosperous, the most enlightened, the most Christianized of all nations, and the misery and degradation and idolatry of the savage African tribes are alike due to the workings of the law of heredity. There is nothing more certain or easier demonstrated than that acquired characteristics in both animals and plants are transmitted from parent to offspring. The original horticulturists in the Garden of Eden demonstrated the truth of this when they entailed upon all future generations the consequences of their transgressions. Man has ever been ready to recognize the workings of this law upon the animal kingdom from the time that Jacob with his ringed rods changed the color of Laban's flock, down to the present day, but how slow we are to apply it to the vegetable kingdom as well!

Goodness and badness, virtue and vice, are alike inherited from parents by both animals and plants. Every living organism has a character that may be improved by conforming to the laws that govern its being, or dwarfed by disobedience to those laws. This was said as truly of plants as of man: "I the Lord am a jealous God, visiting the iniquities of the fathers upon the children unto the third or fourth generation of them that hate me: [or disobey my laws] and showing mercy unto thousands of them that love me and keep my commandments." We do not expect to find as high moral development in the child of the drunkard the gambler, the libertine, as in the child of the minister, the college professor, the honest farmer. We do not look for so great physical development in the child of the man of ease, the invalid, the bookkeeper, as in the child of the blacksmith, the carpenter, the fruit-grower. We do not expect so much mentally of the child of the slave, the dude, the Ignoramus, as of the child of the teacher, the author,

the statesman. Why? Because we expect the child to inherit whatever traits of character its parents have acquired. The farmer recognizes this principle in the selection of the most perfect ears of corn and the most highly developed wheat and oats for seed. The stockman sells or slaughters his scrubs and keeps only those that approach his ideal of perfection for the perpetuation of his herds and flocks. The poultry fancier pays the closest attention to eliminating defects in his fowls and selects for his pens only such as will score well up into the nineties. He well knows that only in this way can he hope to keep his flock up to the highest standard of perfection.

It is only among the nurserymen and fruit-growers that the importance of selecting the highest types of a variety for propagating purposes is questioned in the least. One Ben Davis apple-tree is considered as good as another, no matter whether the scion was taken from the nursery row, from a trifly bearing tree, from a water sprout, or from a half-starved, stunted old tree that has not borne a crop of fruit in ten years. One strawberry plant is thought to be as good as another if it has the desired label attached; no matter whether the environments of the mother-plant has forced it to acquire the fruiting habit, the vining habit, the barren habit, or no habit at all. The dullest, most careless and most ignorant farmer could not be persuaded that one ear of corn is just as good as another for planting so it is labeled, "Hickory King," or "Gold Coin," unless he is like the Irishman who said, "I believe one man is just as good as another and a great deal better." He invariably prefers the well-developed thoroughbred ear of corn that has been brought to its present state of perfection by years of careful selection, to the shrivelled nubbins that has come up through great tribulation in a patch of cockleburs. Among horticulturists alone of all mankind may be found a few persons who do not believe that "like produces like" in their calling. Fortunately, however, they are becoming fewer. Let a man with years of experience in growing fruits and plants venture to advocate through the horticultural press the planting only of carefully selected, high-grade, thoroughbred, pedigreed nursery stock, which is in line with the teachings of all authorities on plant-breeding, and some one is ready to pronounce him a crank with a hobby, a fool for want of sense, or a knave who is endeavoring to fill his purse by imposing upon the credulity of the public.

The character of every organized being is shaped by two forces, heredity and environment. The former it receives as a legacy from its parents, the latter it makes for itself in its struggles to adapt itself to surrounding conditions. Every tree, every plant undergoes some organic change, which is either an improvement or a deterioration, in its efforts to bring its life into harmony with the heat and cold, the sunshine and shade, the moisture and drouth, the good or bad cultivation, the tenacious or porous soil, the fertile or impoverished land of the locality where it is compelled to grow. No two plants are exactly alike, as no two have grown under the same environments. They have their individuality as truly as has man. The experimenter and plant-breeder improves the character of his plants by placing them under the proper conditions of soil, moisture, culture, etc., and then selecting for the propagating bed those that most nearly reach his ideal.

New varieties are produced either by crossing two varieties that have desirable qualities, and selecting the resultant seedlings, or by bud variation, selecting the best buds from plants that reproduce by division. The former method is generally employed in producing the desired new varieties, and the latter in improving existing varieties. It is not generally known that a cross between two varieties may be obtained by grafting. The stock has an influence over the scion that increases with the distance the scion is placed from the root. If the graft is made at the ground, the character of

the scion is changed so little as to be hardly perceptible; if at the upper part of the trunk the effect is more noticeable; if the union is far out upon the smaller limbs, the influence of the stock upon the scion is so marked as to produce a distinct variety intermediate between the varieties used for stock and scion. My attention was first called to this when a boy on the old home farm in the Hoosier State. My father had a large apple orchard; about one-half of the trees were seedlings. Some of these were left ungrafted; some were grafted about a foot above ground; others were grafted just where the head was formed; a few had some of the larger limbs grafted; and my brothers and I took our first lessons in grafting by grafting some of the worthless seedlings far out on the smaller limbs. One tree that bore small, knotty, sour, green apples was grafted near the ends of the limbs with Belleflower, with the result that Belleflowers could scarcely be recognized as that variety. They had lost their original flavor, color and size, and were too warty to be marketable. A seedling that produced early, smooth, yellow fruit was grafted in the same way with Golden Russet, resulting in an early, sour, fall apple very soft in texture and with scarcely any trace of the rusty coat. These are but two examples of the many changes we produced in that orchard, some slight, others so marked as to form new and distinct varieties. It may take repeated grafting to fix varieties produced in this way. Why may not some of our standard varieties be improved by this method? Why may not the Ben Davis be bettered in this way and forever stop the contention over the poor quality of old Ben? Varieties often deteriorate, or "run out," as it is usually termed, in their efforts to adapt themselves to unfavorable surroundings. Last summer I visited near Kentland, Indiana, the farm of Charles E. Hatch, a man who has had considerable experience as a berry grower. His land is very rich, heavy, black loam that produces sixty to eighty bushels of corn per acre. His strawberry-patch was a revelation to me—runners ten feet long connecting a string of a dozen plants, conquering everything in the shape of weeds, running through the fence into the adjoining field, and attempting to conquer that. Mr. Hatch told me that they made but few plants and bore abundantly the first year, after that they assumed the viney habit and were less productive. He has found that plants from a one-year-old patch are all right for setting but from older patches are of so little value that his neighbors will not accept them as a gift. His old plantations of blackberries raspberries, and dewberries acquire the same rampant growth and become less productive. My southern Kansas berry-farm, in common with the majority of the fruit-farms in this State, consists of rich, sandy soil, the natural home of the berry. Such soil develops stocky plants of the highest fruiting tendencies, with few runners or but little surplus cane growth. Such plants seemingly never "run out," and plants from old plantations are often apparently as good for setting as from the one-year-old propagating bed. No wonder some growers advertise their strawberry plants at \$1.50 per 1,000, while others charge \$3 to \$4 for the same varieties! The difference in price is usually the difference in the quality of the plants. Cheap plants are dear at any price. This is also true of all other nursery stock.

Implements of Horticulture.

EDWIN SNYDER, OSKALOOSA, KANS.

Within the last few years wonderful strides have been made in the invention and use of improved machinery in all branches of human industry, and agriculture and horticulture have not been left behind other industrial callings in this matter.

The greatest improvement has been in more efficient and convenient soil working tools. Plows, harrows, disk cultivators are far better and handier than what we were using twenty years ago.

The latest and best orchard tool invented is the extension-head reversible disc-harrow. I have arrived at the conclusion that it is about the only soil working tool that should be used in the orchard after a few years of growth.

Among its many good points I would mention, its thorough, effective work in leaving the surface of the ground in the finest condition for plant growth. As a rule running only two or three inches deep and thoroughly pulverizing the soil to that depth destroying all weeds and without the slightest injury

to tree roots. It fills a long felt want of the horticulturist.

The extension head makes it possible to get close up to the tree without inconvenience to operator or team.

Before I commenced using these harrows I was greatly inconvenienced and dissatisfied with the results of my efforts to cultivate close to trees. With a double shovel and the horse hitched long with a very short singletree, I could get pretty close to the tree and do fair work but it required a strenuous effort, and when switching limbs and twigs struck me in the face, I was frequently betrayed into exclamations of impatience.

Now I sit upon the spring seat of a Clark's extension head disk harrow out of harm's way, ride along with comfort and do comfortable satisfactory work up to the tree trunks, whistle Old Hundred or some other cheerful tune and do four times as much work as would be possible the old way.

All up-to-date orchard growers, so far as I am acquainted, use these or similar disk harrows. I am informed where the most extensive cultivation of orchards is practiced in the great commercial orchards of California these harrows are almost exclusively used.

Of the various cutting and trimming tools, I have little to say. I have used Sam's pruning knives and pruning shears, but have about discarded everything except a sharp light axe and a broad-bladed sharp corn knife. I suppose many orchardists will consider these savage, barbarous implements to attack a fruit tree with; but they are effective and expeditions, time-saving tools; and if used with judgment and skill do no harm to the tree.

In these strenuous times speed is an important element in any successful work. The saw and shears are too slow.

Of the various spraying tools I have little to say. I should have tried a dust spraying machine last year, but the manufacturer wrote me to remit before he shipped, which was evidence that he either doubted my solvency or the efficiency of his machine. In either case I did not want to do business with him. I am glad now I did not. I use an Empire spray pump. It seems to do good work. I suppose there are many others that do as well.

I have always entertained some doubts about the efficiency of spraying machinery. The principal insect enemy I had to contend with last year was the canker worm and I looked in vain for corpses of the pest after spraying.

My neighbor's unsprayed trees were as free from wormy apples as mine.

I do not wish to be understood as being opposed to or even discouraging spraying. My experience has not been extensive enough to give a positive opinion upon this point only just enough to make me cautious about investing in any very expensive machinery for the purpose.

I have no time to dwell upon the improved machinery for gathering and handling fruit. In this direction as great improvements have been made as in machinery for cultivation, and the fruit-grower who would keep up with the procession must have the latest and best in this line.

I desire to congratulate my brother fruit-growers upon the rapid advancement in our calling, the improved implements of recent invention for cultivation and harvesting the crop, the increased demand and consumption of fruit insuring a profitable and adequate market for all we may produce, and lastly, upon that intelligent conception of the progressive spirit of the times which keeps our calling fully abreast of any other industrial pursuit of the day.

Keeping Fruits.

FRANCIS GOBLE, WYANDOTTE COUNTY.

This may be done in two principal ways; first, by being placed in cave or natural storage; second, in artificial or cold storage; and as preliminary to the discussion of this subject—taking the apple for the principal feature—much can be said about its class and condition preparatory to its being stored.

Almost any of the land in eastern Kansas will grow excellent apples, and for quality, color and keeping hill-top is perhaps the best. Bottom lands grow apples in large quantities which are large in size but not as good in quality or color, nor do they keep so well.

Northern slopes retard the maturity of the fruit and prepare the apple best for storage.

A very important matter is not to have trees too thick on the ground. A perfectly healthy growth of tree, hav-

Sloan's Liniment

There is nothing like it to kill a Spavin, Curb or Splint.

Invaluable for cuts, kicks or bruises. Manufactured scientifically by a famous Veterinarian.

Sold by Dealers generally.

Horse size, 50c. and \$1.00 per bottle. Family size, 25c. per bottle.



ing all its needs of rootlets supplied with proper food and moisture, with the proper cultivation, plenty of light, air and heat, will produce perfect foliage and fruit of its kind. The fact that insects do not as often attack a perfectly healthy tree is sufficient in itself to satisfy the most skeptical that starved rootlets can not sufficiently vitalize the tree. Many of the commercial orchards of the West are planted 70 to 100 trees per acre. We are in the same boat ourselves; and while we are willing to admit that 70 to 80 trees per acre, under proper care, will be profitable for three or four crops, we must insist that nature, uncurbed, will give us a great straggling lot of trees, which will be choked and rendered barren by their own luxuriance.

Air and light are essential to perfect growth and the ax must be used to make space for them.

At gathering time market the fruit if prices current will justify it. The work is soon over and the farmer can devote the balance of his time to other matters. The apple business, we must allow, has its "ups and downs," as other business avocations do, and the old adage that "only a few in any business make money," will apply to people engaged in this, as well as in other businesses.

Apples, however, are a staple article of food; and the fact has been established beyond a peradventure, that by proper packing and storing their keeping can be continued over a period of several months with but slight loss. The commercial men of the country who handle this product have organized themselves into a national society. They meet at least once a year, generally at a time when they can fix a conservative estimate on the apple-crop of the country, and it is needless to say that this fixity is never made known to the outside world. There is no doubt that some of our national reports have been controlled by this society and have been made to read crops much larger than have actually existed. Admitting these to be facts, we conclude that no set of men are more competent than you apple-growers to judge of the fitness of an apple for shipment or storage, and the time was never riper than now for the practice of said judgment.

There is but one of two things to do, sell at the price which this society fixes for you, or pick, pack and store as it does. For when they will have gotten the bulk of the apple crop of the country they will soon put up prices and will be glad to pay you your price to keep you from meddling with theirs.

As I said in the beginning, keeping fruits may be done in two ways, by cave or natural storage which can be built at a reasonable cost. I have one such on a farm in Salt Creek valley, just west of Leavenworth, Kans. The house or storage was built in the top of a slope, from west to east, and is two stories high, the main part of the building being underground. It has a large double door in the west, with half windows above it, and double windows in the east; also two ventilators properly placed in top of building. The walls are of limestone, eighteen inches thick, and the roof is double, having space between, fourteen inches thick, filled with sawdust closely packed. The doors and windows are doubled, and when tightly closed the building is almost air-tight.

When I lived on that farm I seldom sold at gathering time, but held the apples until later. That enabled me to gather the fruit at a time when most of it could be saved. It is often the case that when we sell at gathering time the buyer will hold the fruit on trees to get the highest color and thus entail on us great loss by over ripening and dropping. We gathered in soft split baskets which were carefully filled and removed at once by means of wagon to storage house.

They were then separated into three classes, firsts, seconds, and culls. The firsts were held for the best wholesale trade, the seconds were sold to grocers and peddlers, and the thirds to any one who would buy them.

The Jonathan apple usually ripens about September 1, at a time when the weather is quite warm. We usually pick and pack this apple in three-bushel barrels and place in cold storage at once. When treated thus the Jonathan is an excellent keeper and we have always made money out of its storage. The balance of our winter sorts were usually placed in the building above described, and when filled, great care was exercised until temperature of building could be properly reduced. During cool days and nights the entire ventilation would be thrown open and when the weather was warmer it was closed up. By this means the temperature of the building was soon run down to 35 degrees, which is a good temperature for fruit. I have held the temperature of this building close to the freezing point with a variation of not to exceed five degrees for three months, with extremes of both warm and cold on outside. In a building where this temperature is maintained, apples, properly packed, will keep several months with light loss. I never placed a crop of apples in that storage that did not pay me well for my trouble. The crop of 1897, the last crop stored there, was a fair one, and at gathering time the very best prices paid were \$1.50 per barrel, packer to furnish barrels, do packing, and to receive on board cars at nearest station.

All fruits from the farm, culls and all, were taken from the trees and packed together in bins in this house and sold to C. C. Clemmons, of Kansas City, Mo. They were packed during the month of February, Mr. Clemmons furnishing the barrels, men to do the packing, but we were to place stock on board cars at nearest station. Two dollars and eighty-five cents per barrel was paid us for the fruit and Mr. Clemmons inquired very carefully for more of the same kind of stock. Our loss was comparatively nothing, as many were taken that would have been thrown out in the fall packing. Peddlers came to the house and paid good prices for the culls, thereby making a good market for our apples that year.

The second means of keeping fruits, is by mechanical refrigeration, brought about by machinery of various types. The compression system is, perhaps, mostly used, anhydrous ammonia, as a refrigerant, being expanded and forced through coils of pipes arranged about the rooms. I do not care to elaborate much in my definition of mechanical refrigeration, never having given its theory much thought, but I am convinced that temperature can be controlled by this means, and by it the American farmer has received one of his greatest aids.

Horticultural Conditions and Progress.

B. F. SMITH, LAWRENCE, KANS.

Beginning with the strawberries; the product was a disappointment, not over twenty-five per cent crop; and prices were lower in comparison with the output. The low rate of percentage is charged up to the great drouth of 1901. The black raspberry crop, while not large, was satisfactory in prices received. Old blackberry fields were a failure. There were a few berries on new berry-patches. As to grapes and cherries, they were few and scattering. Of peaches and apricots, there were none in Douglas, Franklin, or Johnson Counties. But in Wyandotte County there were a few scattering seeding peaches on the tops of the hills. There was an average crop of pears of good size and free from insects or blight. Pears sold well throughout the season, the average price being about \$1 per bushel. Plums were a failure. Goose-

berry bushes were badly damaged by the drouth of 1901, hence the crop was small and sold well. The apple crop of Douglas, Franklin, and Johnson Counties was estimated early in the season at from a half to three-fifths of a good average crop, but irregularly distributed. In the round-up of the gathering season a higher estimate was put on the crop.

The range of prices for Jonathan, Grimes, Huntsman, York Imperial, and Gano was \$1.50 per barrel; Ben Davis and Winesap, \$1.25, and other sorts about \$1 a barrel. Apples were larger in size, and more free from insects and blight than they were last year.

The York Imperial and Gano were larger and more highly colored than I ever observed in any other season; likewise Jenitons and Winesaps were better colored than usual. This is satisfactory proof that we need an abundance of moisture, to get the color desired in the four last-named varieties of apples.

There was too much water in the soil this year for the Ben Davis. It is the least desired of any variety in Lawrence, except possibly very small kinds. The grocery trade has lost more of the Ben Davis by decay than of any other sort. Then their patrons will not buy them when they can get Jonathan, Grimes, Huntsman, Gano, or any other good apples.

The apples that made the growers the most money in comparison to number of bearing trees were Jonathan, Gano, York Imperial, Grimes' Golden, and Huntsman. In looking backward over the business, along our lines of work in the year 1902, would say that some progress is being made. Young orchard trees of all sorts and small berry-patches of many varieties have been planted the past spring, and more will be planted in 1903, to take the place of old orchards and worn-out berry-fields.

Horticulture and fruit-growing will not decline in our district. But we desire not to grow more fruit than the markets can use at prices that will compensate us for the labor bestowed on them.

Report on New Fruits.

Your committee on new fruits beg leave to report as follows:

BLACKBERRIES.

Honorable Mention—Variety of blackberry named *Kentucky*, recommended to be as early as Early Harvest. We find the berry much larger than Early Harvest. Should be planted for trial.

Special Merit—Variety of blackberry unnamed, marked seedling by D. G. Watt, Douglas County. We find it a large-sized berry with excellent flavor and almost without seeds. It is said to ripen with Snyder. Mr. Watt states that it has been in cultivation for four years and no rust has appeared on the canes.

APPLES.

Special Merit—A variety grown by Dr. Cutter, named Mason's Orange, very similar to Yellow Bellflower. The grower claims it to be superior to Bellflower in productiveness in Kansas.

Plate of sweet apples shown by Mr. Bailey, of Morgan County, Mo., excellent in quality, medium size, named McNair's Sweet.

Plate of seedlings, no name, shown by Mr. Bailey, fair quality but under size.

A variety of apples shown by Dr. Cutter, named Winter Banana, not in good condition, no special merit.

B. F. PANCOAST,
E. P. DIEHL,
Committee.

Meeting of Officers and Trustees.

The officers and trustees met at 4 p. m., December 31, 1902. Present, President Fred Wellhouse, Topeka; Vice-President J. W. Robison, Eldorado; Treasurer Gerald Holsinger, Rosedale; Secretary Wm. H. Barnes, Topeka; Trustees, First District, D. F. Van Orsdol, Silver Lake; Second, B. F. Smith, Lawrence; Third, F. L. Kenoyer, Independence; Fourth, John Cousins, Eskridge; Fifth, Wm. Cutter, Junction City; Sixth, J. J. Alexander, Norton; Seventh, Dr. G. Bohrer, Lyons.

The following officers and committees were elected:

Entomologist, Prof. S. J. Hunter, of the State University.

Committee on orchard treatment, Geo. Holsinger, Geo. A. Blair, Edwin Snyder.

Handling Fruits, G. C. Richardson, J. F. Cecil, C. E. Hildreth.

Vineyards, A. Obendorf Jr., G. S. Espenlaub, and J. S. Entsminger.

Keeping Fruits, Geo. B. Whiteker, G. L. Holsinger, Wm. Moeser.

New Fruits and Nomenclature, Wm. Cutter, F. Holsinger, B. F. Smith.

Experimental Horticulture, Prof. W. E. Ringle, Prof. Albert Dickens, E. J. Holman.

Ornithology, Prof. D. E. Lantz.
Best Horticultural Implements, J. W. Robison, G. M. Munger.

Irrigation, Hon. W. A. Reeder, F. Holsinger.

Home Adornment, Mrs. A. H. Thompson, Mrs. J. J. Alexander.

Fungii, Prof. A. E. Popenoe.
Plant-Breeding, J. W. Robison.

Commercial Gardening, O. F. Whitney, A. Chandler.

Legislation, President Fred Wellhouse, Vice-President J. W. Robison, Trustee Dr. G. Bohrer.

Marketing Fruits, J. S. Perkins.
Shade Trees, Dr. G. Bohrer.

Grange Department.

"For the good of our order, our country, and mankind."

Conducted by Ed. Blair, Cadmus, to whom all correspondence for this department should be addressed. Papers from Kansas Granges are especially solicited.

NATIONAL GRANGE.

Master..... Aaron Jones, South Bend, Ind.
Lecturer..... N. J. Bachelder, Concord, N. H.
Secretary, John Trimble, 514 F St., Washington, D. C.

KANSAS STATE GRANGE.

Master..... E. W. Westgate, Manhattan
Overseer..... J. C. Lovett, Bucyrus
Lecturer..... Ole Hlber, Olathe
Steward..... R. C. Post, Spring Hill
Assistant Steward..... W. H. Coultis, Richland
Chaplain..... Mrs. M. J. Allison, Lyndon
Treasurer..... Wm. Henry, Olathe
Secretary..... Geo. Black, Olathe
Gate Keeper..... G. F. Kyner, Lone Elm
Ceres..... Mrs. M. J. Allison, Lyndon
Pomona..... Mrs. Ida E. Flier, Madison
Flora..... Mrs. L. J. Lovett, Larned
L. A. S..... Mrs. Lola Radcliff, Overbrook

EXECUTIVE COMMITTEE.

Henry Rhoades..... Gardner
J. T. Lincoln..... Olpe
A. P. Reardon..... McLouth

SHORT-SIGHTED PETER.

Short-sighted Peter, you know him I know.
You'll stumble upon him wherever you go.
His hatchet-like face and his low, rasping voice.
Are never intended to make one rejoice.
Unless it is when he is going away,
And his going prolonged to a permanent stay.

Short-sighted Peter, he lives in the dark,
With a rattle and bat, where there's never a spark
Of sunny good nature or song light and gay.
Comes drifting along for to brighten the way.
He grunts when he speaks and his heart fills with pain,
If every faint effort don't show him a gain.

Short-sighted Peter he once joined the Grange,
And spent a whole dollar—he did—of his change.
But his far better half, when she wished to go to,
Was told by old Peter it never would do,
For the cost was so great and no greater the gain,
And the paying of dues was a terrible strain.

Short-sighted Peter, no thought but for self,
Sordid and greedy and grasping for pelf,
Seemed to forget when the school year began,
Seemed to forget till his boy was a man,
That the school is the place for the children of ten,
Instead of at work in the place of hired men.

Short-sighted Peter, they'll take him some day
Up to the churchyard and lay him away.
Then the old farm and the wealth that it gave,
Will be a sweet plum for the lawyers to save.
If your name is "Peter," it's time for a change;
No short-sighted Peters we want in the Grange.

Telephones on Farms.

Talk about it as we may, and considering every other excuse we may offer, the social side of his nature is what has driven the young man from the farm to the town in perhaps nine cases out of ten. To the fact that the isolation of the farm, under the influence of latter-day invention, is becoming more and more a thing of the past, is in large part due the distinct movement, which now is recognized everywhere, back to the farm. Among the first of these is the farmer's telephone, which to-day is exerting such a fine influence in extending the social life of rural districts, annihilating distance and bringing the voices of the men and women and young folk of the neighborhood farms, near and remote, to the ear in familiar and pleasant converse, lighting up the hour, once so dreary with sheer lonesomeness, and peopling the home with kindred spirits.

There are some other things which do much for the farm in a social and business way—the trolley, for instance.



STRAWBERRY PLANTS THAT PAY

TO PLANT. Sure to produce BIG RED BERRIES. You cannot fail if you plant our plants. We have been growing berries in Kansas 21 years; began when 12 years of age, and know just what you need. Our Catalog tells you all you want to know. Have Raspberry, Blackberry plants, etc. Write for Free Catalog. Address F. W. Dixon, Holt, Kansas.

BARGAINS IN SEEDS

Choice kinds of Vegetable and Flower Seeds at 2 cents per Packet. Flower Plants, 5 cents each. Many choice novelties. Don't buy until you see our New Catalogue. Mailed FREE if you mention this paper. IOWA SEED CO., DES MOINES, IOWA.

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17 Peach, \$1.00.
50 Concord, \$1.00.
1000 Mulberry, \$1.00.
Immense stock, fine quality, low prices. Freight prepaid on \$10.00 orders. General catalogue free. GAGE COUNTY NURSERIES, Beatrice, Nebr., Box 625

200,000 Fruit Trees WHOLESALE

1,000,000 berry plants and large supply of ornamental, forest, and evergreen trees. Strictly first class and healthy. Wholesale prices for orders by March 1.

FREE by mail, a beautiful rose, a rare shrub, or a useful plant for ten names and P. O. of persons who may want to buy fruit trees.

BALDWIN (NURSERYMAN), Seneca, Kans.

GREAT CROPS OF STRAWBERRIES

AND HOW TO GROW THEM.

The best book on strawberry growing ever written. It tells how to grow the biggest crops of big berries ever produced. The book is a treatise on Plant Physiology and explains how to make plants bear Big Berries and Lots of Them. The only thoroughly bred scientifically grown Strawberry Plants to be had for spring planting. One of them is worth a dozen common scrub plants. They grow BIG RED BERRIES. The book is sent free to all readers of the Kansas Farmer. Send your address to

R. M. KELLOGG, Three Rivers, Mich.

them so. When you see a fellow with moss on his back who is opposed to good roads and who thinks that telephones and free delivery of mails are intended only for cities, don't call his a "granger," for he isn't. He is one of the fellows who just can't help being on the wrong side. In Indiana a good many years ago, the people elected a progressive representative to the legislature. He succeeded in getting a road law passed and under its provisions a certain number of miles of road were to be built each year. Some smart fellow figured up the cost and when that representative showed up at home he had to hide out for a while to keep from being present at a necktie party. But "time heals all wounds," and when that representative died a monument was built to his memory and paid for by private subscription. This is not written with a hope that any member of the Kansas legislature will see it.

I would suggest as one of the subjects for discussion in subordinate granges the following: "What benefit would farm telephones be to this community, and what would it cost to put them in?"

I would be pleased to have the name and address of the secretary of every subordinate grange in Kansas and I also desire articles which have been read in the grange that will be of interest to other granges. The KANSAS FARMER man says he will print them gladly, so let them come.

B. J. Sheridan, editor of the Western Spirit, of Paola, and owner of one of the finest farms in Miami County, recently joined New Lancaster Grange of that county. For several years past Mr. Sheridan has by voice and pen helped push the grange work along in his county, and we are glad to see him a full-fledged member.

Do you want business? There is plenty of business to be had, but business is not looking for you. You must go after it.—Advertise in the KANSAS FARMER.

But the trolley means the investment of many thousands of dollars. Not so with the telephone. A few dollars invested in wire, insulators, transmitter and receiver, a few days' work in setting out poles and stringing of wires, and presto! the world is at your call! We know of one Wisconsin farmer whose telephone cost him \$19, and he has connected with city and county 'phones, is a director in one farmers' telephone company which has 60 miles of wire of its own, and one or two sales made on the Chicago market, as a result of having the 'phone in his house, paid for the outfit many times over. In his case the telephone was not only not an expense, but a source of large gain, and we are confident this has proved to be the case in thousands of instances.

Every farmer should have a telephone in his house. None may enumerate its advantages nor catalogue its uses. It not only encourages socialability, it creates it in many a life; it brings the doctor within call; the merchant is always at hand; it saves many a weary journey and gives to real service many an hour that otherwise must have been lost. Now is the time to put in the 'phone wherever one is lacking. The long winter days and evenings will be made more pleasurable because of its presence to every member of the family. And the economy and value of it may not be computed.—Farmers' Voice.

Patrons will be pained to hear of the death of Bro. John Trimble who has for a quarter of a century been the capable and faithful secretary of the National Grange.

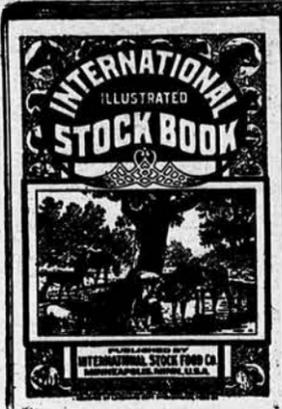
Grange News.

New Lancaster Grange, Miami County, conferred the third and fourth degrees on twenty-four members at their first January meeting. This grange has some excellent workers in it and bids fair to become a rival of Cadmus, Olathe and Stanley granges in point of membership. They have called a meeting for the purpose of talking "cooperation," and it may result in the establishment of a store at that place. It is an ideal place for such a movement, as the only store they had burned down recently and will not rebuild if the grange decides to start one.

Cadmus Grange will have a farmers' institute February 1. Dr. M. S. Mayo and Prof. Minnie McIntyre, of Manhattan, will be present. The members of the order will bring their dinners and spend the entire day at the hall; an excellent time is looked for. The speakers will be at the institute at Wellsville, February 3, 4, and 5.

Cadmus Grange, at their meeting December 28, 1902, elected the following corps of officers: Master, T. T. Hope; overseer, Miss M. A. Summers; steward, H. K. Traul; assistant steward, Warren Smith; lecturer, O. C. Love; chaplain, Mrs. Josie Miner; secretary, H. C. Wishart; treasurer, Joseph Lawrence; gatekeeper, Clarence Pulhamus; Ceres, Coral Shattuck; Pomona, Minnie McIntyre; Flora, Blanche Cady; lady assistant, Alta Lee.

How many people of Kansas know that the Olathe Grange owns one of the finest opera houses in Kansas, in addition to their mammoth cooperative store and bank? It is a paying investment, too; yet many wise-acres shake their heads when they hear of a few wide-awake farmers pulling together for mutual good. The Johnson County farmers are among the most progressive of the State and it is the influence of the grange that has made



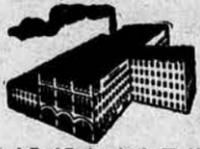
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The Stock Interest.

THOROUGHBRED STOCK SALES.

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

- January 13, 1903—L. B. & A. M. Thompson, Nashua, Mo., Galloways, at Kansas City.
- January 14-15, 1903—C. W. Armour and Jas. A. Funkhouser, Herefords, at Kansas City.
- January 22-23, 1903—Combination sale pure-bred Hereford cattle, at South Omaha. W. M. Rogers, McCook, Neb.
- January 23, 1903—Breeders' State combination Berkshire sale, at Topeka.
- January 28-29, 1903—C. A. Jamison, Peoria, Ill., Shorthorns, at Chicago.
- February 2, 1903—G. E. Fuller, Morrowville, Kans., bred Poland-China sow sale.
- February 3, 4, and 5, 1903—Combination sale at Wichita, Kans., Percherons, Shorthorns, and Poland-Chinas. J. W. & J. C. Robison, Snyder Bros., and others.
- February 5, 1903—Thompson Bros.' sale of Poland-China bred sows and gilts, at Marysville, Kans.
- February 6, 1903—Breeders' combination sale of Berkshires, at Kansas City.
- February 6, 1903—Winn & Mastin, Mastin, Kans., Poland-Chinas.
- February 10-11, 1903—G. M. Casey and T. J. Wornall, Shorthorns, at Kansas City.
- February 10, 11, and 12, 1903—J. F. Stodder, George Bothwell, and others, Shorthorns; also C. A. Stannard and others, Herefords, at Oklahoma City, Okla.
- February 16, 1903—J. S. McIntosh, Manhattan, Kans., Shorthorns.
- February 17, 1903—Geo. F. Kellerman, Shorthorns, at Kansas City.
- February 18, 1903—C. M. Garver & Son, Abilene, Kans., bred Poland-China sows and gilts.
- February 20, 1903—S. S. Spangler, Milan, Mo., Percheron horses.
- March 3, 1903—L. M. Monesse & Son, Smithton, Mo., jacks, jennets, saddle horses, and Poland-China swine.
- March 8 and 4, 1903—C. H. Gardner and M. A. Judy, Aberdeen-Angus cattle, at Chicago.

Proper Treatment of the Brood Sow.

D. TROTT, ABILENE, KAN.

The brood sow is one of the most important and valuable animals on the farm, and it is through her efforts, to a considerable extent, that the mortgage is lifted from the farm, or kept off altogether. Where a number of good brood sows are kept and the proper care is taken of them and their progeny, not many mortgages will be found. A good brood sow will not often pull a man into debt, but will go a long way toward getting him out, or keeping him out entirely. She will also help to buy shoes, socks, hats and bonnets for the little folks and furnish them with a toothsome slice of bacon or ham for their dinner. Besides she helps to fill the farmer's pocket with that useful article which is called money. Farmers as well as others generally feel pretty good when they have a full pocket book and a nice snug bank account. We are all fond of money, but not so much for money itself as for what it will buy. As things are today we can not get along without money. A man who is well supplied with it has a pretty good friend, and he can also prove himself a friend to those who are less fortunate. As the brood sow is a money maker I wonder if we all take the proper care of her? Do we treat her as a friend, or do we kick her every time we meet her? While she is furnishing the material with which to make money she should have proper care. She should be of that quality that is desirable in a brood sow, both as to breeding and individual merit. She should be in a vigorous condition at breeding time. She should be mated to a suitable male, one that will keep up that quality in her offspring and not one that will bring disgrace to her owner. She should be mated to a male that will produce the kind of which you can be proud, and which will be a pleasure and profit to feed. From mating time she should have plenty of exercise, good food of the kind that nature demands, in order that she may produce strong, vigorous offspring. It would be unreasonable to expect her to do her best if she should be mated to a poor scrub, and neglected as well. If she is kept in a small ten by twelve pen for six months at a time, and fed nothing but corn and water, nothing but failure could be expected. It would be impossible for her to produce the kind of stock that would prove money-makers. Lots

of exercise, lots of alfalfa or other green food in season, alfalfa hay, sorghum fodder, Kafir-corn fodder, a field of green wheat or rye, with corn or other good food, are just the things for a brood sow in winter. A short time before her family is expected her pen should be put in proper shape. It should be roomy and comfortable to suit the weather, such as will keep out heat in summer and cold in winter, or would not allow rain or snow to beat in on her bed. After farrowing she should be fed lightly for a few days, increasing her feed as nature and her family demand. Proper care of her and her family will go a long way toward producing the material that fills the pocket book, as well as the material to support the body and furnish the larder. Healthy food, clean pens, proper care, etc., should produce healthy hams and bacon. And who among us is not fond of a nice liberal slice of well cured bacon or ham when we know that the food which produced it was of the right kind? It is said that "man can not live by bread alone," but good bread and vegetables and ham and bacon make a meal good enough for a king.

Likes Balanced Ration Discussion.

EDITOR KANSAS FARMER:—I am very grateful to you for the able and complete answer to my question on balanced ration for hogs.

Others of your readers have expressed to me their appreciation of your discussion of this subject. The matter of feeds and feeding is a very important one with the farmer in this day of high-priced lands. I shall be pleased to have a further discussion of the balanced ration for other stock than hogs.

I regret that I can not give you much experience in hog feeding as I am rather an amateur hog grower and have not been feeding scientifically. I have forty head of growing and breeding hogs. They are principally pure-blood Poland-Chinas of the Chief Tecumseh 2d 14579 family. They are running in a ten-acre lot sown to wheat which has afforded them good pasture up to the present. They have well water, plenty of salt and charcoal, comfortable house to sleep in, and are fed at present 120 pounds of whole corn per day and what alfalfa hay they will eat. Have just begun feeding alfalfa. The hogs are thrifty and making a good growth. Have never had any disease among my hogs.

I shall endeavor to conform my feed along the line discussed by you and give you results some time in future.

I should be pleased to have the experience of those who have fed cottonseed-meal, as we need a feed with protein in a more concentrated form to accompany alfalfa and corn for young and growing hogs.

Jefferson, Okla. T. S. PARIS.

Consolidation of the Poland-China Records.

EDITOR KANSAS FARMER:—The meeting at Chicago of the National committee, appointed at the American Royal, for the purpose of bringing about a consolidation of the different record associations, was, I am informed, a grand success, attended by many of the leading breeders from all parts of the country who were, without exception, heartily in favor of consolidation. It was voted at this meeting that the committee request the stockholders of the record associations at their annual meetings, to appoint a committee from each to meet with the National committee at Chicago February 16, and it was also suggested that the committee consult a corporation lawyer, with a view of getting some definite plan of procedure, to be presented to the stockholders of the record associations, at their annual meetings. Accordingly Mr. Kirkpatrick and I, on behalf of the com-

mittee, advised with Judge D. B. Holmes, formerly general counsel and corporation attorney for the Metropolitan Street Railway of Kansas City, as well as representative for a number of steam railroads and one of the best-known corporation lawyers in the West to whom we presented the by-laws and articles of incorporation of each of the record associations. After careful consideration, he gave as his opinion that the merging of the records, so far as the legal aspect was concerned, would be a simple thing; that there was no complication whatever from a legal standpoint that would interfere. It was decided that Judge Holmes should prepare a prospectus of the proposed merger outlining fully the plan that should be followed for effecting a consolidation, and that a copy should be mailed to every stockholder of record association in the United States. The plan outlined in this prospectus is as follows:

For each of the four records, the American, Ohio, Standard, and Central, to elect two directors, while the Southwestern, a new record in the South, should elect one, making nine in all, which nine would constitute the board for the first year; to this board of nine is to be left the entire organization and plan of management of the new company for the first year, after which the stockholders will elect the board in the usual manner. The prospectus will recommend that the associations make a loan of about \$500 to cover initial expenses, such as incorporating, etc., which sum is to be pro-rated against the five records according to their membership, so that the stronger records will have the larger amounts to pay, but as the average for each record will be only about \$100, this is not an item of moment. It will suggest that the assets of each record, after its proportion of the \$500 loan is set aside, be distributed among its shareholders in the form of a dividend or otherwise, and that the old record then go out of existence. The \$500 loan referred to, when paid off by the new association, after they become self-supporting, can be distributed among the old stockholders of the various records. Each stockholder in any of the old records is to receive a share in the new in lieu of it, and as he will have received his pro rata of the assets of the old company, it will not be possible under this plan for any shareholder to lose a penny, as it is simply trading one share for another.

If the stockholders will, at their annual meetings, follow the plan outlined in this prospectus, the merger will be accomplished; the only possible reason for objection to the plan would be a selfish one, and if each or any of the records permit themselves to be actuated by selfish motives, than the idea of consolidation might as well be abandoned. In other words and to make it plain, if any record refuses to consolidate unless its secretary, form of pedigree, etc., be retained and adopted, then we will never have a consolidated Poland-China Record. Unless the welfare and prosperity of the breed predominates in the minds of the stockholders, over the selfish and personal interest for their particular record, then it is useless to try to do anything, for it is evident the new record could not have five secretaries, five forms of pedigree, etc. Each record may be honest in the belief that

MOORE'S
The Original
HOG REMEDY
Hog Dip.

MOORE'S DIPPING TANK

Used on Outside and Inside of Hogs
Kills lice and fever germs, removes worms, cures mange, canker and cough; aids digestion, promotes healthy growth, and Prevents Disease, at Small Cost.

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And Nature's Perfect Healing Salve
MAN OR BEAST.

Druggists, or by mail. Trial box, 4c; 2 oz., 25c; 6 oz., 50c. Balmoline Mfg. Co., Sta. B Abilene, Kas

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A positive and thorough cure easily accomplished. Latest scientific treatment, inexpensive and harmless. **NO CURE, NO PAY.** Our method fully explained on receipt of postal.
Chas. E. Bartlett, Columbus, Kans.

Immune Hogs

The pigs are born Cholera-proof.

Innoculation before birth the most scientific and best hit ever made in preventing Hog Cholera. Write for free book and agency.
ROBERT RIDGWAY, Box 300, AMBOY, IND.

its methods are the best, yet they can not all be right. Certain it is that all are good and even more, certain it is that these nine directors, whom the records will be asked to name at their annual meetings, will, as men of honor and judgment, select from the five the organization and forms that seem most complete and suitable all round. The fact that there will be an equal representation from each of the four larger records will make it absolutely impossible for any one record to get the best of it, even though there were some two of the directors disposed to be unfair. The recommendation made at the Chicago meeting, that a committee be appointed to confer with the National committee on the subject, although made with good intent and as the best method thought of at the time, would not, in the opinion of Judge Holmes, in any way aid in effecting consolidation. Under the by-laws of some of the records, it is expressly stipulated that all matters, such as changing location of record, consolidation, etc., shall be passed on only at annual meetings; therefore it would not be possible for stockholders to empower a committee so that it could liquidate the record and be absorbed by a new association. The only thing possible to accomplish by this committee meeting would be the formulation of a plan of consolidation, to be held over and passed upon by the several associations at the next an-

The National Cornstalk Remedy

The greatest discovery of the age, prevents stock from dying of cornstalk disease. The remedy is a real preventive. We have such absolute confidence in it that we require no money from buyers until they have fed and tested the remedy. If it is not a represented you pay nothing. We want every farmer to try our remedy. It never fails when fed with salt as directed. Order a pail to-day, which will protect 60 head for the season. The price is \$10.00 per pail. Address

NATIONAL CORNSTALK REMEDY CO.,
Jas. R. Muir, Manager. Range Block, Omaha, Nebraska.

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GOMBAULT'S Caustic Balsam

A Safe, Speedy, and Positive Cure
The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUSTIC OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

nual meeting. This would merely postpone action for another year, when they would be right where they are now, with the same plan to pass upon that they now have. Consequently why defer for another year what may as well be determined now? If there is any real sentiment in favor of consolidation, why not do something definite and effective now that will make consolidation possible? This appointing of committees can not accomplish anything, and will be a means for those opposed to consolidation to retard progress to that end. The plan outlined by Judge Holmes is undoubtedly the best and in fact the only one by which we can hope to merge the records. If not followed by the stockholders, it is useless to go to the expense and annoyance of appointing a number of committees. It is well known that two of the records have at different times appointed committees to consider plans for merging, the committees of one appointment even having held a meeting in Chicago. What was the result? Each committee wanted the best of it and nothing was accomplished. Last year a committee was appointed by the American and Standard companies, with the purpose of consolidation, but if a meeting was ever held, no one on the outside ever heard of it. So it will be just as long as it is left to committees. It will be impossible for committees from the different records to agree upon a plan; each committee will favor its own record, and unless the stockholders will lay aside these personal desires in view of the general good of the breed and vote the directors as stated, leaving the whole thing to them, consolidation is an impossibility, in my opinion. To incorporate a company, the names of the directors for the first year must be mentioned in the articles of incorporation. Judge Holmes says, before a new record can be legally incorporated, directors must be named; if the stockholders don't do this, who will? There is no question but a big majority of the larger and more influential breeders and stockholders of the various associations are in favor of consolidation, and if it is not brought about, it will be due to the carelessness and indifference of these men, who undoubtedly constitute a majority. I am certain there will be some who live close to the seats of government of the various records, who find it easy to attend the meetings at home and be big fish in a small pond, and whose selfish motives overbalance their interest in the advancement of the breed, who will oppose this movement and do everything possible, in a quiet way, to kill it. But I also believe that the thinking breeders are awake to the situation and that they will this year, if never before or again, attend the meetings or be represented by proxy, to help in this great undertaking.

Every loyal Poland China breeder in the United States, who is a member of a record association, ought to be particular this year to be represented in the cause of consolidation. If you can not be present, send your proxy to some one you know to be in sympathy with it; if you send your proxy to the member of the National committee representing your association, it will be sure to be properly voted. The National committeemen are: T. R. Wilson, Morning Sun, Iowa, for the American; C. F. Dietrich, Richmond, Kans., for the Standard. (Proxies may also be sent to H. M. Kirkpatrick, Wolcott, Kans., by members of this association; H. E. Kendrick, Wilmington, Ohio, and Joe Cunningham, Loes, Ind., for the Central; members of the Southwestern will have to select their own men, as it was not known at the time the National committee was named that any of the members of this association desired to merge with the others. Therefore no committeeman from that record was appointed. The committee desires it understood, however, that this record will gladly

be taken into the merger, and hope that the prospectus referred to above will be compiled with so that it may be possible to include the Southwestern if anything definite is done. The benefits to be derived from consolidation are so well known and have been so fully discussed through the press and otherwise, that I shall not say more on this point, but I do want to wager my prediction of the result if they do not soon come together, and it is that the Poland-China breed will lose ground and that at least two of the other breeds will soon be worthy rivals. From my connection and experience with the American Royal show this year, I am pretty well convinced that our breed will have its hands full fighting the other breeds, without being constantly fighting among ourselves. The members of all other records are breeding the same kind of hog, the type is practically the same in all sections of the country, then why these rival records and sectional discords which now exist? I know there is now a better feeling among breeders belonging to all records and from different sections than ever before, since I have been in the business, and now that the subject of consolidation is hot and in the minds of all, why not put aside all jealousies, selfish motives and ill feeling and unite? One record, centrally located, where the breeders from all parts of the country could annually meet and discuss matters of importance for the advancement of the breed, one number and name for one hog, one volume, one management, would certainly be a desirable result. Remember "in union there is strength" and let the example of all the other breeds of swine, all breeds of cattle, sheep, and practically every kind of live stock, that of having but one record, be a lesson. A consolidated Poland-China Record would be the strongest institution of its kind in the United States. If every stockholder will do his duty, we may have such a record.

FRANK D. WINN,
Mastin, Kans. Secy. Committee.

Present for the Agricultural College.

Frank Rockefeller has sent the following letter to F. D. Coburn, of the board of regents of the Kansas Agricultural College:

"After patient waiting I am now prepared to present to you as an act of friendship, for the Agricultural College of the State of Kansas, the Hereford bull calf we talked of. He is a son of Columbus 17th that many good judges among my friends tell me should have unquestionably taken the championship honors at the late Chicago International show, instead of second place. I now have fifteen of his sons on hand, and this is the first of his get I have ever disposed of. He is a calf I am willing to show against any Hereford calf in America.

"I told you I would not give you a calf until I could pick one that in my judgment would grow into an animal which, with proper care, could hold his own against all comers. I have made the selection and am now ready to make the delivery. Please advise me in relation thereto. He will do the college good, and will be well fitted both in blood and individuality to go into any herd."

Iams' Percherons.

Our sensational horse cut is from the "Home of the Winners," of Frank Iams, St. Paul, Neb. Iams' Scorro (44639) is a black Percheron, 5 years old, weight 2,540 pounds. He is a massive drafter, of fine proportion, smooth, with big, clear fifteen-inch bone. He has all the quality and finish of a model draft stallion. He has a big, lofty style and very bold, dashing way of going. He is a real live cyclone in action.

Iams' Tama Jim (20810) is a black, 5-year-old Percheron, weight 2,560 pounds. He is a sensational draft stallion of big size, big, clean fourteen-inch bone, smooth in form, and with that extra fine finish rarely seen in a draft stallion. He has that big, aristocratic style admired by all and his flashy, bold way of going makes him a sensation in motion. This pair are the largest and best formed pair of real drafters owned by any one man in the United States. They are the wide-as-a-wagon sort, with two good ends and a place for their dinners. They are royally bred, there being five top crosses of brilliant blood in them. They are fit to head the best herds in America, as you can see at my barns 9-months-old colts from them that weigh 900 to 1,000 pounds.

These are the types of imported and home-bred stallions to be seen at Iams' barns; 2 to 6 years old, weight 1,600 to 2,500 pounds. He imported 63 head in October and has on hand 117 head. They are all in fine breeding condition, 95 per cent blacks. He is making sales to every buyer that can pay cash or give bankable notes, as he has no buyer, no salesman, no commission to pay, no partner to divide profits with. The above five facts demonstrate to you that Iams can afford to sell first-class stallions at 50 cents on the dollar and then make money. His breeding guarantee is broad and liberal, guaranteeing 50 to 60 per cent. That, with his twenty-one years' experience at

St. Paul, Neb., in the importing business, makes him a safe man to do business with.

Write Iams for his 1903 catalogue, which will be the greatest horse catalogue in the United States, showing over forty horse cuts (true to life) now in his barns. It is a hummer and an eye-opener to all horsemen.

Hereford Sale at South Omaha.

On January 22 and 23, there will be held a public sale of fine Hereford cattle at South Omaha, at which a grand opportunity will be offered to farmers and breeders, for getting the best blood of this famous breed of cattle at prices which will suit the purses of those who desire starting a thoroughbred herd, or who require more animals to richly increase a herd already established.

Eleven Nebraska, Iowa, and Missouri Hereford breeders will contribute from their herds for this sale, and 100 animals in all will be offered; the greater portion of the offering is of females, and for that reason the sale should be well patronized by those who wish to secure foundations for pure-bred herds.

W. W. Gray of Fayette, Mo., will bring fifteen of his grand herd to the sale, the same being of choice, registered "Anxiety Wiltons," sired by his famous bull, Printer. The heifers offered will be bred to March On 14th and he will also bring one calf sired by this latter-named bull, and out of a Printer heifer, to show that the mating is a very successful one. The sample thus shown will prove to the most particular breeder that no one can make a mistake in purchasing his well-bred animals.

The bulls to be offered by Mr. Gray will show for themselves their elegant breeding, and all of the stock he will take to the sale will be of the very best and should be thoroughly appreciated by the breeders of the Northwest. For catalogue of sale, write to C. E. Thomas, secretary, Stock Yards, Chicago, Ills.

Stock Gossip.

Gen'l Mgr. A. G. Leonard, of the Union Stock Yards, Chicago, bought the roan imported bull Gay Englishman at the Geo. Hardin & Son's sale to put at the head of his Shorthorn herd. Gay Englishman was sired by W. S. Marr's chief herd-bull Bap-Favorite. He is out of Roan Lady who belongs to one of the best families in Mr. Marr's herd and which has produced winners at all of the leading stock shows.

In the combination sale of Hereford cattle from twenty leading herds held at Chicago on January 8, ninety head were sold at an average of \$265.83. The top of this sale was \$3,800 paid for Britisher, the grand champion bull at the Chicago International of 1902. He was consigned to Geo. Leigh, of Aurora, Ill., and was sold to Giltner Bros. Under the terms of the sale, Mr. Leigh contracted to take the first ten heifer calves sired by Britisher at \$200 each.

J. N. Woods & Sons, breeders of Polled Durham cattle and Poland-China swine, Ottawa, Kans., report a splendid business in the sale of their young Poland-China boars, in fact they have disposed of all the young boars of serviceable age in the herd. They still have a few bred-gilts which if generally known would result in an enormous demand at once. The amount of inquiry that has been received at this office in regard to bred-gilts of good breeding indicates that the demand for this class of stock is far from being satisfied.

By unanimous action on the part of the directors of the Shorthorn Breeders' Association, Shorthorn headquarters will be moved from Springfield, Ill., to Chicago, and will find a home in the new Record Building on Exchange Avenue. Owing to the fact that Vol. 54 of the registry is now in press and can not be distributed until March, the transfer from Springfield will not occur until that time. The business of this association is thriving as is indicated by the fact that over 1,500 entries for Vol. 55 were received during the last three days of December.

D. T. Mayes, Knoxville, Mo., informs us that he still has a number of splendid up-to-date boars of June and July gilts that represent the best large English Berkshire lines of breeding. It is claimed for this herd that one can get more value for his money than from any other herd in his State. The Berkshires of good blood lines are remarkably scarce and it is a real pleasure to be able to name a man who still has some extra good ones for sale. Mr. Mayes has the record of a breeder who guarantees the stuff which he sells and we hope our readers will take advantage of this announcement and consult his breeders, card on another page, and write him at once.

In the dissolution sale of Anoka herd of Shorthorn cattle belonging to Geo. Harding & Son, Waukesha, Wis., eighty-seven animals brought \$32,075, average \$391.66. The seventy-four females brought \$27,320, average \$369.19. Thirteen bulls brought \$6,755, average \$519.61. The top of the sale was \$1,605 which was brought by Best of Archers who went to Journell & Co., Urbana, Ohio. The top of the female sale was \$1,150 paid for the imported cow Missie 163d, with heifer calf at foot. She went to Robt. Miller, of Stauffville, Ont. This sale was brought about by the desire of Mr. Geo. Harding to retire from active business. F. W. Harding, his son, will still be active as a Shorthorn breeder.

Mr. D. P. Norton, Neosho Valley herd of Shorthorns, Dunlap, Kans., tells us that his herd is in better shape than ever. He also mentions that he still has an extra fine bunch of bull and heifer calves that he offers cheaper than anybody else if quality is considered. His herd bull, British Lion, is making a grand record. Last October the roan cow, Elgira 25th, sold for \$1,000 when six years old. She had 75 per cent of British Lion's blood and was sired by Isabella's

CATARRHAL FEVER.



THIS is a disease characterized by inflammation of the respiratory mucous membranes. It is most common in spring and fall but may occur at any season of the year.

Causes.—The causes of catarrhal fever are sudden change from the nostrils and redness of wet, inhalation of poisonous gases, contagion. The disease is most frequent when the animal sheds its coat in the spring or fall.

Symptoms.—The animal will appear listless with drooping of the ears. The extremities are alternately hot and cold, the hair will stand on end; cough with discharge from the nostrils and redness of mucous membrane of the nose, and dry mouth are prominent symptoms. The bowels are constipated and the urine is scanty and is of high color. In some cases inflammation extends to the bronchi or even to the lungs.

Treatment.—Give animal good surroundings, allow him all the water he will drink. Dissolve in the drinking water a half-ounce of saltpetre twice a day for two or three days, then diminish the dose to half the quantity. Feed easily digested, laxative food such as bran, oats and grass in season. If there is much exhaustion give two-dram doses of quinine three times a day. If the appetite is much impaired dram doses of tincture of nuxvomica with half-ounce doses of tincture of quassia should be given three times a day.

To allay irritation of the mucous membrane and cough, a dram of muriate of ammonia with two drams of solid extract of licorice should be given three or four times a day. Inhalations of steam give excellent results.

Along with this treatment the general condition of the animal's system should not be overlooked. Give that most powerful tonic, Dr. Hess' Stock Food. It is both a nutritive and a curative—gives the correct balance of nutrition to all other foods and tones the vital organs and the blood, so the system is able to throw off the disease quickly. If the animal should require special attention or prescription, in the package of Dr. Hess' Stock Food you will find a little yellow card entitling you to the free prescription and advice from Dr. Hess.

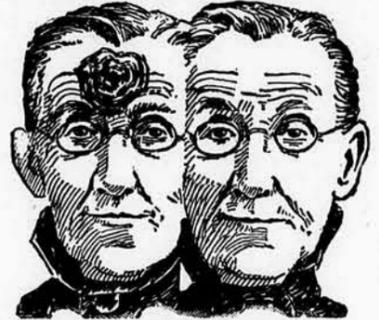
If the medical and veterinary colleges know of nothing better than Dr. Hess' Stock Food for horses, cattle, hogs, and sheep it must be good. Dr. Hess is a graduate of both. No unprofessional manufacturer can equal it.

Sold on written guarantee, in 100 pound sacks, \$5; smaller packages at a slight advance. Fed in a small dose.

Dr. Hess' Stock Food a standard work consulted and commended by the profession, will be sent free if you state what stock you have, what stock food you have used and mention this paper. Address Drs. Hess & Clark, Ashland, Ohio.

Cancer Cured

With Soothing Balm Oils



MRS. B. F. SMITH, COLUMBIA, MO.

Thousands of persons successfully treated by this mild method of cancer, tumor, catarrh, ugly ulcer, piles, fistula, and all skin diseases.

Below are given the names of a few who have cured:

Mr. L. Watson, of Midway, Mo., 75 years old, had one located on the side of his face and it was removed and the sore healed in six weeks.

Mrs. B. F. Smith, of Columbia, Mo., had a very large one removed from her forehead in a short time.

Mrs. W. A. Southard, of Buffalo, Mo., cancer of the breast, size of teacup, cured by home treatment.

Mrs. R. H. Elliott, Sweet Springs, Mo. Rev. H. K. Pervier, Boston, Mass, 10 Myrtle St., Jamaica Plains.

Mr. T. J. Thomas, 1045 East 5th St., Kansas City, Mo., cured of a very bad cancer on back of neck.

Mrs. Capt. R. A. Stewart, Troost Hotel, 12th and Troost, Kansas City, Mo., cancer.

Mrs. John Smith, clerk Centropolis Hotel, Kansas City, Mo., cancer.

Persons desiring to know more of this valuable treatment should call or address

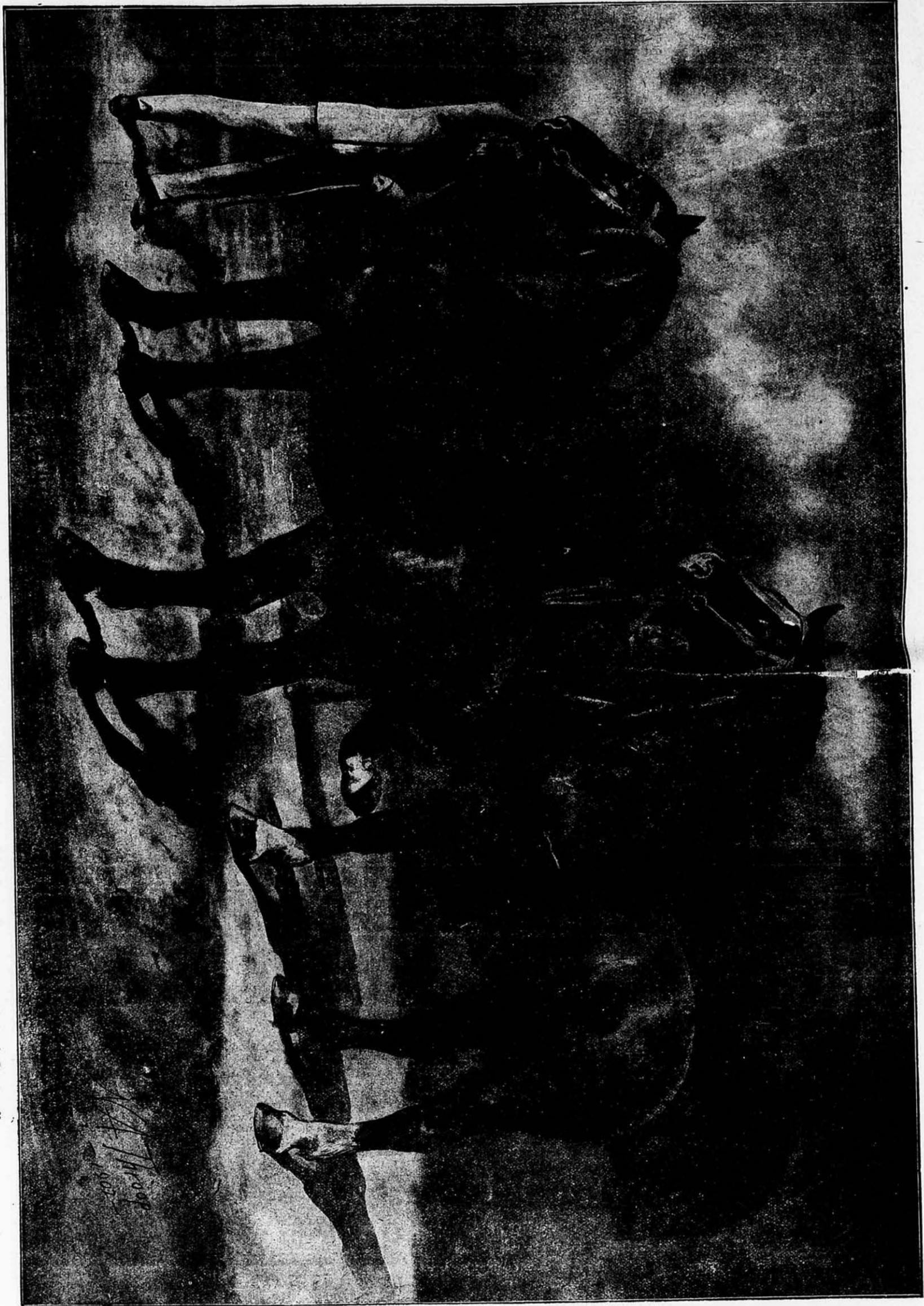
DR. BYE, Ninth and Broadway, Kansas City, Mo.

Heir, which makes her of the same breeding practically as British Lion. Mr. Norton's advertising card appears on page 77 and lovers of good Shorthorns can do a good thing for themselves by consulting him either by mail or in person.

Jno. W. Roat, owner of the Crescent herd of O. I. C. swine, Central City, Neb., writes that his advertisement in the Kansas Farmer, which appears on page 77, is a paying one. Mr. Roat still has a few and choice bred-gilts to send to Kansas.

(Continued on page 72.)

PILES NO MONEY TILL CURED. 25 YEARS ESTABLISHED.
We send FREE and postpaid a 200 page treatise on Piles, Fistula and Diseases of the Rectum; also 100 page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.
DRS. THORNTON & MINOR, 1077 Oak St., Kansas City, Mo.



“Largest and Most Sensational Pair of Black Percherons Imported and Owned by Any One Man in the United States.”
Owned by Frank James, St. Paul, Neb. “They are worth going 1000 miles to see.”

Agricultural Matters.

Growing Alfalfa in Kansas.
 FROM BULLETIN NO. 114, FARM DEPARTMENT
 KANSAS STATE EXPERIMENT
 STATION, BY H. M. COT-
 TRELL, M. S.
 (Continued from last week.)

DISKING.

Our first experience in disking alfalfa was in 1898. A field had been seeded to alfalfa in the dry year of 1894 and a poor stand secured. In 1897 this alfalfa was heavily pastured by hogs. The hogs were taken off early in the fall, and a heavy growth of crab-grass came up. The crab-grass was so thick, and the stand of alfalfa so thin, that it was not worth keeping.

Late in March, 1898, this field was harrowed with a disk harrow, the disks sharp, and set at as great an angle as possible. It was immediately cross-disked, with the disks set the same way. The ground was thoroughly pulverized and the alfalfa apparently destroyed. It soon started, branched out thickly, and we made three good cuttings from that field that summer.

In 1900 we went a step further in disking alfalfa. The season was very dry at Manhattan, the rainfall in June being 1.19 inches, in July 4.51 inches, and in August 2.84 inches. Two fields of alfalfa, two years old, were disked.

One field was disked March 28, the first cutting for hay made May 31, disked June 6, the second cutting for



Fig. 6. Alfalfa blossom, enlarged.

hay made June 25, disked June 27, the third cutting of alfalfa made August 13, and the alfalfa disked for the fourth time August 20. The last cutting of alfalfa was made September 13. This shows four diskings and four cuttings of alfalfa on upland in a dry year. Another field of alfalfa was disked and cross-disked March 27. The first cutting of alfalfa was made June 4 and the second disking June 6. Through July and the early part of August the alfalfa was cut from day to day and fed green to dairy-cows, to help out dried-up pastures. August 20 the field was disked, and October 3 the last cutting of alfalfa was made.

The alfalfa in both fields made fine late fall growth and went into the winter in good condition.

The stand of alfalfa on both fields disked in 1900 was good. A harrow with sharp 16-inch disks was used, the disks being set at a slight angle, just sufficient to turn the soil over, and the harrow was weighted to make the disks split the alfalfa crowns to a depth of two inches. The disking split the alfalfa roots, and this made them throw out many new shoots. The disking made an earth mulch over the field, and prevented the evaporation of water, so rapid in a dry time from an alfalfa field just after being cut. The disks were set so that they barely turned the soil over, and running at a depth of two inches, they turned the roots of the crab-grass and weeds up to the sun, which killed them. These disked fields were clean and free from crab-grass in the fall.

In 1901 we made a trial of disking one-year-old alfalfa and secured good results. In disking alfalfa at this age the disks must be set more nearly straight than with older plants. The disks must be set so that they will not cut the tap-roots and the harrow can be weighted to make it cut two inches in depth.

Disking has the same good effect on

alfalfa that cultivation has on corn. We recommend that every year the alfalfa be disked early in the spring. We would prefer to have it disked in the spring before growth has started, but in 1901 we disked alfalfa when six inches high, without injuring the plants. Disk immediately after each cutting throughout the season, no matter how often the alfalfa is cut. The disking will make the crowns throw out many new shoots, will form an earth mulch over the land, preventing loss of water from the soil, and will kill weeds and crab-grass. In dry, hot weather alfalfa should be disked the same day the hay is removed, if possible, as a week's exposure of the soil to sun and winds without disking may cause the evaporation of an inch of moisture.

If the stand of alfalfa is fair to good, set the disks at the least angle at which they will turn the soil over, and weight the disk-harrow to make it cut into the crowns to a depth of two inches. If the alfalfa is old, and the growth of crab-grass thick, set the disks at as great an angle as possible, and if this does not tear the soil and alfalfa roots pretty thoroughly, cross-disk with the disks set the same as for the first harrowing. A disk harrow will not hurt an old alfalfa root, and will usually do it much good.

When disking, the ground should be stirred and pulverized sufficiently to form a good earth-mulch two to three inches thick. In midsummer, on hard, dry soil, it may be necessary to disk and cross-disk to secure this result. On loose, sandy soils, a light disking, or even harrowing with a smoothing harrow, may produce this mulch.

As stated under the previous heading, whenever alfalfa does not thrive, cut it. Immediately after cutting the alfalfa, disk it, and disk it thoroughly. If the succeeding growth is not healthy, cut and disk again, and repeat these operations until a thrifty condition is secured. Unless alfalfa is hopelessly injured from some cause, this treatment will put it in good shape.

WHEN TO CUT ALFALFA FOR HAY.

Alfalfa should be cut when not more than one-tenth of the plants have come in bloom. Cut at this early stage, the yield of hay for the season will be much greater than if the alfalfa is cut near maturity, and every pound of hay secured will be worth more for feed.

We cut a strip through a field of alfalfa when one-tenth was in bloom; another strip was cut after full bloom had passed.

The strip cut early was nearly ready to cut the second time when that cut after full bloom was being harvested the first time. The strip cut early grew vigorously through the season and made three cuttings and a good aftermath. The strip cut after full bloom gave a low yield the first cutting, and did not grow sufficiently to yield a good second cutting. Early cutting invigorates the plant.

The late cutting of the first crop seems to injure the plant more than at any other time, and we have found it profitable to cut alfalfa the first time as soon as one-tenth was in bloom, even though the weather was bad and we knew that the crop would spoil in curing. The increased yield from succeeding cuttings over that cut late much more than makes up for the loss of the first crop.

Successful clover-growers the first time they try alfalfa often ruin the stand, so that it has to be plowed up, by waiting to cut until it reaches the stage at which clover is usually cut.

The great value of alfalfa is the large amount of protein it contains, that material in feed that is absolutely necessary for the formation of blood, lean meat, and milk. The higher the protein in alfalfa, the more valuable the crop. The chemical department of this station found the effect of cutting alfalfa at different stages as follows:

	Protein. Per cent.
One-tenth in bloom.....	18.5
One-half in bloom.....	17.2
In full bloom.....	14.4

The Colorado Experiment Station found the effect of cutting alfalfa as follows:

	Protein. Per cent.
Coming in bloom.....	18.5
Half in bloom.....	14.6
In full bloom.....	12.9

The Utah Experiment Station for five years cut alfalfa at different stages of maturity and fed the crop in producing beef. The average production per year per acre was as follows:

	Hay, tons.	Beef, lbs.
In first bloom.....	5.35	706
In full bloom.....	4.90	562
Half blooms fallen.....	4.65	490

These experiments made in three States—Kansas, Colorado, and Utah—prove that alfalfa cut in the first bloom will give the greatest yield and feeding value.

HOW TO CURE ALFALFA.

The leaves of alfalfa contain nearly four times as much protein as the stems, a ton of dried alfalfa leaves containing as much protein as 2,800 pounds of bran. Every effort, then, should be made to cure the alfalfa in such a way as to save all the leaves possible. The methods of curing will vary with the condition of the crop, ground, and weather. When alfalfa has made a slow growth, and at the time of cutting, the ground and the weather are dry, there is no difficulty in curing. Often, under these conditions, it is safe to rake within a few hours after mowing, and stack a few hours after the alfalfa has been put in the windrows. When alfalfa has made a rapid growth, and is rank and succulent, and the weather and ground are damp, the problem of curing is a difficult one. It is easy to dry the leaves, but the stems will contain much moisture after the leaves are too dry. Alfalfa hay should become so dry before stacking that when a handful of stems are twisted together no water can be squeezed out. The most practical way to accomplish this, and at the same time save the leaves, is the plan to adopt, and this will vary with different seasons and places.

There is usually no difficulty in curing any but the first crop. When the conditions for curing the first crop are unfavorable, we have usually found the most practicable methods to be to cut the alfalfa early in the morning, after the dew is off, allow it to barely wilt in the swath, then rake, and before night put in narrow, tall cocks. After the dew is off the next morning and the surface of the ground has become dry, we open these cocks carefully, so as not to shatter off the leaves. If the weather is favorable the hay may be stacked in the afternoon; if not, we recock carefully, and repeat treatment until the hay is properly cured.

Some alfalfa-growers, in stacking the first cutting of alfalfa, put alfalfa and dry straw or prairie hay in alternate layers; this is a satisfactory way if the dry material is available. Others use ten to fifteen pounds of salt or air-slaked lime to each ton of hay, sprinkling the salt or lime so as to cover as much of each load as possible. Experiments made at this station indicate that considerably less gains are made by cattle when salt is mixed with the feed. A trial of lime on alfalfa, made at this station, showed little effect.

SPONTANEOUS COMBUSTION OF ALFALFA.

This subject has been treated fully in Bulletin No. 109 of this station, and will be treated briefly here.

There were many instances during the summer of 1901 of alfalfa hay becoming so hot that it took fire by spontaneous combustion and was destroyed. A single instance will give an idea of the conditions under which this took place.

J. L. McCormick, Zeandale, Kans., had alfalfa hay on rich bottom land. It made a rank growth, and was cut late in May, when the first blooms appeared. It lay in the swath about one and a half days, when it was put in windrows with a side-delivery rake. After curing in the windrows one or two days, the alfalfa was gathered on wagons with a hay-loader, and placed in a stack with a stacker. The stack was built thirty feet wide, thirty feet high, and of sufficient length to hold 150 tons. Two months and a half after stacking fire broke out. The stack settled badly in the middle, and two or three weeks before fire broke out several loads from the second cutting of alfalfa were placed on the top of the stack, to fill out where settling had

taken place. At that time the stack was quite hot and the smell of heating alfalfa was strong, but no danger was anticipated. The hay kept getting hotter, and it was decided to take the stack down and save as much hay as possible. One end was taken off safely. After the top of the stack near the middle had been taken off for several feet, the hay was so hot the men could no longer stay on the stack. A few minutes afterward smoke burst out at the ground all along the stack. Men cut two feet into the side of the stack and a blaze started. This was kept smothered with water until fifty tons of hay had been taken away, when the fire could no longer be controlled, and what hay remained was burned.

All cases of spontaneous combustion of alfalfa hay that have come to our notice have occurred with the first cutting. Early spring growth of alfalfa in an ordinary season is rank. The alfalfa was cut either in May or early in June, and at this time of the year the weather is such that it is difficult to thoroughly cure the alfalfa without getting it wet. Usually there



Fig. 7. Alfalfa stem and blossom.

is considerable damp weather and little wind after the first cutting is put in the mow or stack, and this hinders further drying. With later cuttings the growth is not so rank and succulent, and the weather is dryer, and there is often wind. This makes curing easy.

At this station we have not had alfalfa heat sufficiently to take fire, but we have had it become so hot that, as a matter of safety, we took it out of the barn several weeks after putting it in the mow and stacked it out of doors. We have had so much trouble with the first crop heating, that for the past four years we have stacked it outdoors and put the other cuttings in the barn. We have cured the first cutting as carefully as we knew how, keeping it several days in cocks, putting covers on the cocks at night, and opening the cocks during the daytime; and with all these precautions, if there came a week or more of wet, "muggy" weather in July or August, the alfalfa hay would become hot. If the weather stayed dry, no heating took place. The College barn is of stone, and is well ventilated at the roof above the mows. In all cases of spontaneous combustion given in this bulletin the alfalfa was handled as little as possible, and was turned but little. This resulted in the leaves becoming dry, while the stalks contained considerable moisture.

Where weather conditions were favorable, this moisture in the stems was sufficient to promote fermentation, and in the cases given the fermentation generated sufficient heat to start a fire. Usually alfalfa will not get hot enough to do this, and the heating causes little damage. It is quite common to find alfalfa from the first cutting that is brown or black from the heating, and the cattle eat it with relish.

LOSSES IN CURING.

Prof. William P. Headden found, at the Colorado Experiment Station, that in an average alfalfa plant the stems amounted to forty to fifty per cent of

leaves may become so dry in a short time that they will appear dry, while on the inside the stems are almost as full of moisture as when cut. Alfalfa should be cured as rapidly as possible and handled as little as possible, because the great loss in curing comes from the shattering off of the leaves and delicate stems. The longer the leaves can be kept alive the more quickly the alfalfa will cure. The less the leaves are exposed to the sunlight and the more the stems are exposed to the air, the quicker the hay will be cured. The best method of doing this will vary with the conditions of temperature, dryness of air, and amount of

the danger from heating and spontaneous combustion is greater when large quantities are stored in one body. We have investigated this matter to a considerable extent, and can not find any evidence of greater danger in the larger stacks. Where alfalfa is stored in stacks without protection, the greater the quantity in the stack the less the proportion that is exposed to the surface to be injured by weathering. With the improved haying machinery now in general use in the State, stacks thirty feet in height are cheaply made, and if the hay has been properly cured it will keep with less loss in such stacks

time all efforts in that direction have proved to be but little better than no law at all, and consequently unsatisfactory. The object of a game law should be of a twofold character. First, to prevent any person from being guilty of trespass and damage, by entering on any premises other than his own, to shoot, net, or trap birds or game of any description whatever, without first obtaining a special permit from the owner or occupant of any premises or tract of land upon which such person desires to hunt, and upon such terms or rent as the owner or occupant may agree to. The premises, together with

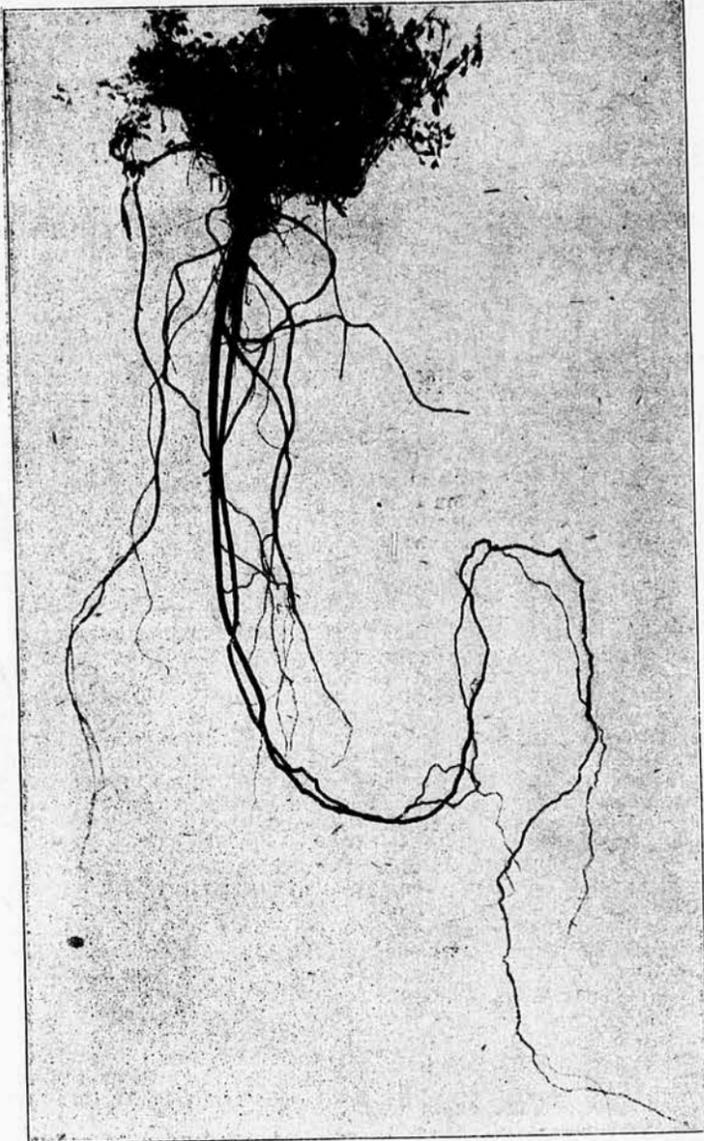


Fig. 8. Alfalfa plant, taken June 11. Root nine feet and nine inches in length; 150 stalks. This plant was nine years old, and grew in high upland having a stiff hard-pan subsoil; water 180 feet below the surface. In digging, after the first foot of soil was taken away, a pick had to be used the entire depth.

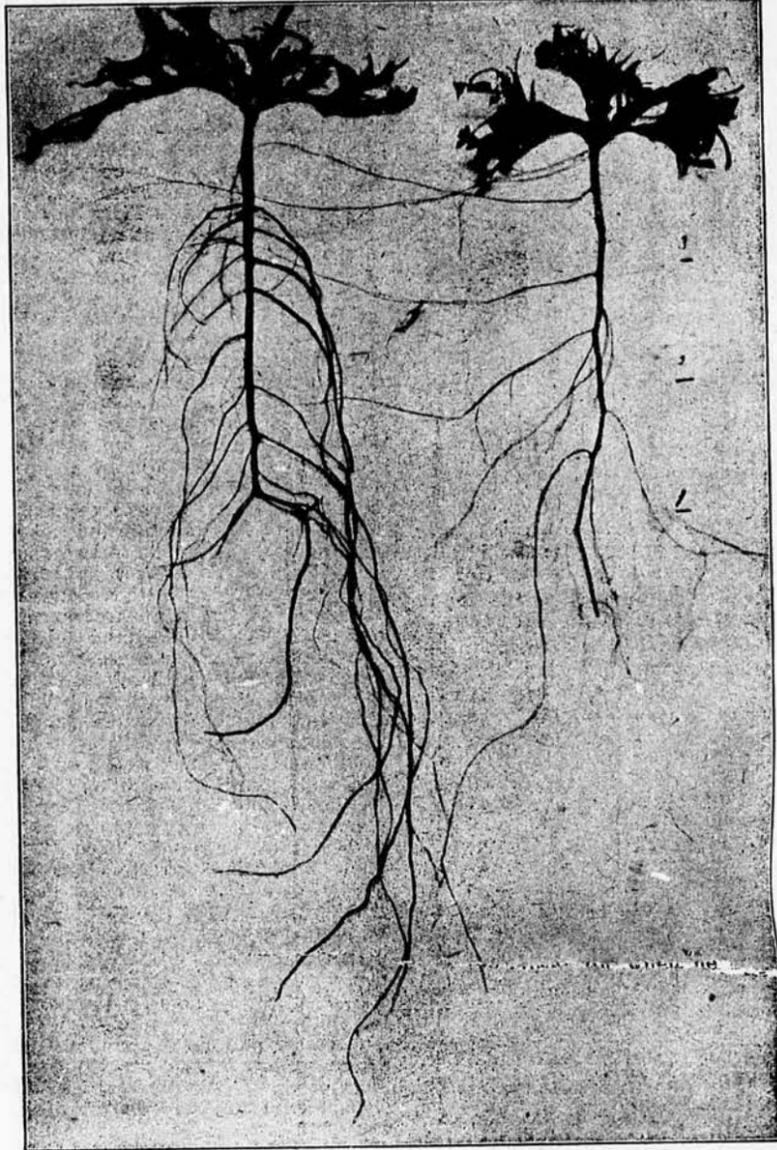


Fig. 9. Alfalfa plant, grown on unland. Seeded September, 1901; plants dug April, 1902.

the weight of the plant, while with very leafy, small-stemmed plants the leaves sometimes form more than sixty per cent of the entire weight. The leaves were readily lost if the hay was not handled carefully. He concluded from his experience and observation that the minimum loss from the falling off of the leaves and stems in careful haymaking amounts to from fifteen to twenty per cent; and, in cases where the conditions have been unfavorable, as much as sixty or even sixty-six per cent of the entire dry crop is lost. Stated in another way, with the best of conditions for making alfalfa hay, and with great care, for every ton of hay taken off the field, at least 350 pounds of leaves and stems are left scattered on the ground. With unfavorable conditions and careless handling, for every ton of hay taken off the field, 3,000, and in very bad cases as much as 3,800, pounds are left and lost.

THEORY OF MAKING ALFALFA HAY.

In making alfalfa hay all the leaves possible must be saved, as they are worth, pound for pound, nearly four times as much as the stems, and to avoid heating and spontaneous combustion the hay must become so dry before stacking than when a handful of stems is tightly twisted together no moisture can be squeezed out. After the alfalfa has been mown, the leaves, so long as they remain alive, pump moisture out of the stems and exhale it through their pores into the air. After the leaves become dead, the only way moisture can escape from the stems is by evaporation, and this is a slow process unless the weather is hot and the air dry. When newly cut alfalfa is spread out directly to the hot sun the leaves are quickly dried and killed, and their help in exhausting the water from the stems is lost. When this is done the

wind. The digestible food materials in alfalfa hay are more easily dissolved and lost by leaching from rains than those from most hay plants. Repeated wetting and drying from showers not only cause this loss from washing, but bring on fermentation.

STORING.

Correspondents frequently inquire as to whether it is best to store alfalfa hay in small stacks or mows of twenty to thirty tons each, or in quantities of 150 tons or more. Many think that

than it will in those of less height. The feeding value of the alfalfa is easily reduced by rains, and in most parts of the State it will pay to protect the top of the stack after it is completed with some kind of a covering.

(To be continued.)

Kansas Game Law.

EDITOR KANSAS FARMER:—During the last thirty years there has not been a session of the Kansas legislature that did not have one or more bills introduced for the protection of the different species of birds. Up to the present

all the game that may frequent or temporarily stay upon the same, are, or should be, under the absolute control of such owner or occupant. This fact, I think, is generally conceded on the ground that all their food is obtained on the farms they are reared upon. This being true, the law should be plain and entirely a prohibitory measure, except upon the terms already mentioned, including the additional condition that any person who wishes to hunt should be required to obtain a license to hunt, paying not less than \$10.00 for the same, if a resident of the State. Then let the law provide a penalty of not less than \$10.00, or more than \$50.00, for each violation of the same.

Shooting, trapping and netting by any one upon and along the public highways of the State should be prohibited entirely, and at all seasons of the year, for, it is safe to say, at least eight birds out of every ten are shot by persons going along the public roads, as here the most and largest hedges are found, and are naturally resorted to by quails in particular, as places of shelter and protection.

This mode of procedure, as a means of cutting off the wholesale destruction of birds, may seem somewhat drastic, but when we consider that the real owners and producers of all the game except migratory birds get next to none of them, and the amount of horses, cattle and other stock upon the farms that are killed, crippled or temporarily injured by these trespassers, to say nothing of the accidental wounding, and fatal shooting, of persons throughout the State, it can not but be just to enact such laws as will afford the shortest, simplest and most effectual means to prevent it. A law that hurts very tenderly, and is full of loopholes, will do no good.

LYONS, Rice County. G. BOHRER.

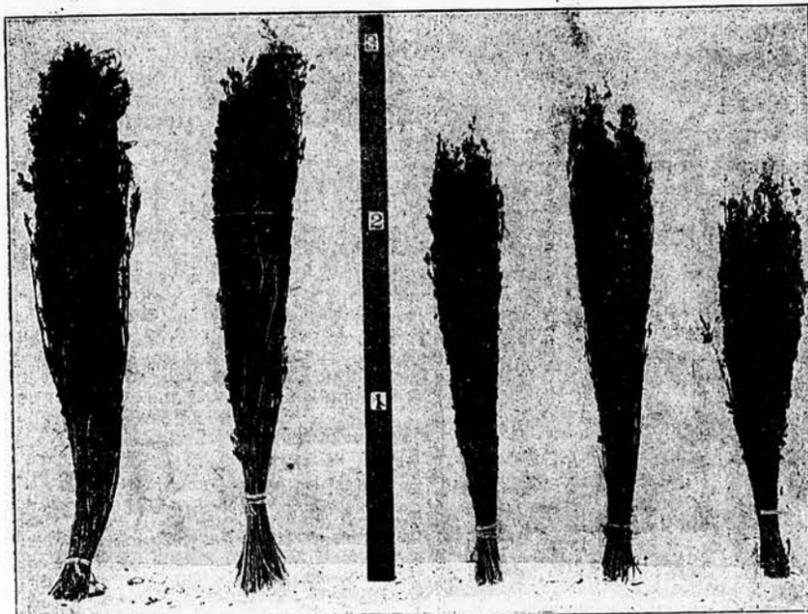


Fig. 10. Photograph from samples of five cuttings of alfalfa grown in 1901, without irrigation, by Mr. M. O'Brien, Liberty, Kans., the season being the most unfavorable in years. The five cuttings aggregated fourteen feet and two inches in height, and the average yield was seven and three-fourths tons per acre. Mr. O'Brien's neighbors were certain that alfalfa would not grow in their section of Kansas.

The Home Circle.

KANSAS QUIVIRA.

In that half forgotten era,
With the avarice of old,
Seeking cities that were told
To be paved with solid gold
In the kingdom of Quivira.

Came the restless Coronado
To the open Kansas plain
With his knights from sunny Spain:
In an effort, that tho' vain,
Thrilled with boldness and bravado.

League by league in aimless marching,
Knowing scarcely where or why,
Crossed the uplands drear and dry,
That an unprotected sky
Had for centuries been parching.

But their expectations, eager,
Found instead of fruitful lands,
Shallow streams and shifting sands,
Where the buffalo in bands
Roamed o'er deserts dry and meager.

Back to streams more trite, more tragic,
Marched the knights with armour'd
steeds;
Not for them the quiet deeds;
Not for them to sow the seeds
From which empires grow like magic.

Never land so hunger stricken
Could a Latin race remodel;
They could conquer heat or cold—
Die for glory or for gold—
But not make a desert quicker.

Thus Quivira was forsaken,
And the world forgot the place,
Until centuries apace
Came the blue-eyed Saxon race,
And it bade the desert waken.

We have made the State of Kansas,
And to-day she stands complete—
First in freedom, first in wheat;
And her future years will meet
Ripened hopes and richer stanzas.

—Eugene Ware.

Thomas Alva Edison.

With the commercial introduction of a radically new type of storage battery, public attention is again drawn to the man who has done more than any other in our time to apply electricity to the needs of every-day life. There is not an electrical instrument, or an electrical process now in use, but bears the mark of some great change wrought by the most ingenious of Americans.

Some brief account of Thomas A. Edison, as an inventor and as a man, may not be without interest to the readers of a journal, many of whom are themselves inventors. To those who believe that Edison's work is the product of an inspiration given by nature to but few, the story of the manner in which he achieves success will seem shockingly unromantic. In the genius who works by inspiration Edison has no great faith. "Genius is two per cent inspiration and ninety-eight per cent perspiration," is the incisive, epigrammatic answer he once gave to a man who thought that a genius worked only when the spirit moved him. Yet it must not be supposed that Edison is deficient in imagination. Every great inventor must have something of the poet in him; for without a most lively fancy, he could never see the possibilities of his own creation.

If the limits of this article permitted a discussion of Edison's numerous inventions, the characteristic of commercial utility would be found common to them all. Not being given to scientific rhapsodies, Edison does not concern himself with what may be of service a century hence; he confines himself rigorously to the needs of the present.

Knowing full well that he is probably not the first who has set for himself the task in the performance of which he is engaged, he reads all that is pertinent to his subject in the vast library which forms an important adjunct of his laboratory. Not content with the information gathered from his own shelves, his literary agent is ordered to send him more. If one were to examine a certain revolving book-case in Edison's study at home, one could foretell what electrical problem is soon to be solved in the Orange laboratory; for in that case are always contained the volumes which interest him most at the time.

After a thorough review of his subject, Edison begins laboratory work—an expert keenly alive to the failures of his predecessors, careful to avoid useless repetitions of old experiments. It is now that the two per cent inspiration gained by exhaustive reading, and the ninety-eight per cent perspiration which he is ready to expend, are applied. Experiments are made; not a few, but hundreds and even thousands. Model after model is built. Failure upon failure is met with, until further effort seems hopeless. Undismayed, Edison performs more experiments, builds more models. Failure spurs him on. At last an experiment is performed or a model made which gives faint encouragement. So far from be-

ing elated, he regards the promising result with great suspicion. The failures have been too many; the apparent success after all may be due to an accidental combination of circumstances that may never occur again. Only after the partial triumph has been confirmed by many trials does complete assurance come.

If ever an Edison invention was a product of infinite pains and unflagging pertinacity, it was the electric incandescent lamp. He had read all that could be read of the labors of others to provide a more efficient light. He knew of Starr's work in England and of Draper's work in New York with the platinum wire. He had studied what Despretz had done with sticks of incandescent carbon contained in a glass globe exhausted of air and filled with nitrogen. He knew all that was worth knowing of illumination by means of incandescent carbon inclosed in a vacuum. Then he set his wits at work to find out why everybody had failed. Early in the spring of 1877 he began to experiment. First he thought that a carbon filament might be made out of cotton thread. Five hours were spent in carbonizing a thread. The frail black filament obtained crumbled at the touch. Attempt after attempt proved hopeless. At last a carbonized thread was rescued intact from the furnace; and that, as bad luck would have it, broke in the mounting. For days no further progress was made. He locked himself and his assistants in his laboratory, vowing that neither he nor they should open its doors until he had produced an operative incandescent lamp. After repeated mishaps and incessant testing, a lamp was completed which burned for days before its light expired. Then, and not until then, did he and his laboratory assistants rest. Every imaginable substance was now tried in the effort to devise a perfect filament—iridium, platinum and all the metals, threads rubbed with coal tar, plumbago, South American fibers, monkey-bast fiber, Manila hemp, South American bast, whitewood, palm leaf, paper of all kinds, jute, cardboard, bamboo, and a host of other substances. After thousands of tissues and threads had been tried, it was finally determined that vegetable fibers produced the best filaments.

He had now to determine what vegetable fiber best suited his purpose. A man was dispatched to China and Japan with orders to test the native bamboos. Another explored the Amazon for fibers, suffering untold hardships and tasting no meat for a hundred and sixteen days. A third was sent around the world, with instructions to search Ceylon in particular, from the north to the south and from the east to the west. The whole globe was scoured. Finally the explorers brought back some eighty varieties of bamboo and three thousand specimens of vegetable fibers. Of all these, only three or four were found available.

Trial after trial was made to determine what shape of bulb should be adopted; what particular quality of glass should be used; what was the most effective way of exhausting the air, and what was the simplest method of sealing the bulb. And even after these tasks had been performed, it was necessary to devise a means of generating a current of the proper character.

In all these there was no guessing, no trusting to luck. Edison knows exactly what he wishes to accomplish, and how his end is to be attained. Absolute certainty of purpose and of method saves him from frittering away his time in useless experimentation.

Chance has given perhaps an occasional idea, but it has not lightened his work. A device, whose invention he himself has attributed to accident, is the phonograph. He had taken out a patent on a telegraph repeater, in which a chisel-shaped stylus indented a sheet of paper curled around a cylinder. These indented marks were to be used in retransmitting the recorded message. "While singing into the mouthpiece of a telephone, the vibrations of the voice sent the fine metal point into my finger," he tells us. "That set me to thinking. If I could record the movements of the point and send it over the same surface afterward, I saw no reason why the thing would not talk. I tried the experiment first on a strip of telegraph paper. I shouted 'Hello! hello!' into the mouthpiece, ran the paper back over the steel point, and heard a faint 'Hello! hello!' in return." Then he decided to make a talking-machine. The men in the laboratory laughed at him. In the end he proved that he was right.

When the first operative phonograph was completed, Edison packed up his instrument and came to the office of the Scientific American. Without ceremony he placed the machine on the editor's desk and turned the crank. The machine introduced itself. "Good morning," it said. "How do you do? How do you like the phonograph?" And thus it happened that the editors of the Scientific American constituted the first public audience that ever listened to the phonograph.

The story of the incandescent lamp is repeated in Edison's invention of a method of electro-magnetically concentrating ores. The system has been so fully described in these columns that a detailed description is hardly necessary.

About the latter part of 1897 Edison devoted his exclusive attention to the invention of a new storage battery, on which problem he had been engaged for some five years. For over a year he worked harder than a day laborer. He was at his laboratory at half-past seven in the morning. His luncheon was sent to him. In the evening he left for dinner, but returned at eight. At half-past eleven at night his carriage called for him; but often the coachman had to wait for three or four hours until the inventor came out of his laboratory. Yet despite all this labor, no apparent progress was made for months.

When vacation time comes, and with it a chance to leave his laboratory, Edison plays just as he works, with his whole heart and soul. He will hear nothing of business. Science is thrown to the winds. Letters sent to him are utterly disregarded. Only a telegram of the most imperative nature will command his attention. And so it is with the little relaxation which he permits himself during his work. His hours of rest are few; yet his short sleep is sounder and more refreshing than that of many whose enterprises are of less pith and moment.

Of Edison's personality much might be written. When you meet him for the first time, you feel immediately at your ease—he is so unaffected and cordial. Then if you are a newspaper man, you begin to study him out of the tail of your eye. He is neither tall nor short, stout nor thin. His white hair makes him seem older than he really is; he is only fifty-six. His face is clean shaven—the mouth firm, the chin strong. In his dress he is careless to a degree. If you are fortunate enough to have him pilot you through his laboratory, you will find it no easy matter to keep up with his quick step. He is nervously active; everything he does is done quickly, yet not hastily. He explains things tersely and clearly. You talk to him; you notice that he is somewhat deaf, and you wonder why this man of all men, should not resort to some invention that will enable him to hear better. But he looks upon his deafness not as a misfortune. Eminent specialists have told him that he can be cured; but he has assured them that he prefers not to be treated, arguing shrewdly that if he could hear the noises which have been so long

muffled, he might find it more difficult to concentrate his mind on his work.

Some day a patient boswell will lovingly intersperse in the chronicle of Edison's life-work many a tale of his delicate sense of humor. If there is one thing that Edison loves, it is a rollicking story. Many a black hour in the laboratory has been brightened for his assistants by his keen wit and sparkling repartee. Occasionally the outer world hears his scientific opinion expressed in some playful sarcasm. When asked once by a New York State official what was the best method of electrocuting murderers, he gave vent to his deep-rooted opposition to capital punishment in the bantering retort, "Hire out your criminals as linemen to the New York electric lighting companies." Then he began an exhaustive investigation which finally revealed the quickest and most painless method of electrocution. Every man in the laboratory who hears a good joke or a clever remark feels it his duty to repeat it to the "Old man," as Edison is affectionately called in the shops.

His laboratory and his plant are not so much a place of business as a school of scientific invention, of which he is the master. Indeed, he has ideas of business which a Wall Street man might charitably call eccentric. Nowadays his business affairs are conducted by able men. But in the days when he built his first plant at Newark, and when the actual work of keeping accounts devolved partly on him, he conducted his financial affairs in a picturesque, nonchalant way. "I kept only pay-roll accounts, no others," he assures us; "received the bills, and generally gave notes in payment. The first intimation that a note was due was the protest, after which I had to hustle around and raise the money. This saved the humbuggery of book-keeping, which I never understood. This arrangement, besides, possessed the advantage of being cheaper, as the protest fees were only one dollar and a half. Notwithstanding this extraordinary method of doing business, everyone was willing to accept the notes and my credit was good." The hours of work were just as erratic. "We had no fixed hours, but the men, so far from objecting to the irregularity, often begged to return and complete certain experiments, upon which they knew my heart was especially set."

Like all successful men, Edison has his enemies. He has been accused of appropriating the work of others as his own. There is a rumor abroad that he employs a number of brilliant young men, whom he pays handsomely to work out his ideas, and that it is they who really ought to be credited with the invention of many devices that bear his name. That he is dependent to a certain extent upon the help of his assistants is undoubtedly true. Nature has given him but a single pair of hands and a single head. In his laboratory the help that he receives consists largely in the performance of tasks too multifarious for a single man. Something more than a bare idea to work with is given to each man in the laboratory. He is told exactly how the result desired is to be attained. In other words, the men in the laboratory are intelligent human tools in Edison's hands. To him alone is due the invention of the many contrivances with which his name will ever be associated.—Scientific American.



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TURNING NEW LEAVES.

The time of year again has come
When men make resolutions
That henceforth they will better guard
Their cash and constitutions,
Some merely make a mental vow,
That they will act more wisely,
And some make oath before the 'squire,
Who writes it down precisely.

Some, thinking they're tobacco slaves,
Again are new leaves turning,
And say hereafter pipes, cigars
And tobies they'll be spurning.
Then some who've used a plug each day
The habit now are ruing;
They've settled that they'll "shake" the
weed,
And so they swear off chewing.

The man who has at times indulged
In practice known as "boozing,"
Perceiv's the error of his ways
And conscience is accusing.
He says that he no more will go
Where glasses off are clinking,
He'll spend his nights in better style,
And so he swears off drinking.

Some vow no more they'll borrow cash
To waste in foolish spending,
And some who've frequently been
"touched,"
Decide to stop all lending.
Some who have often stretched the truth
Are for reform declaring,
And some who long have been profane
Now stop and swear off swearing.

Some make these vows at each year's end,
But brief is reformation,
For when the testing time arrives
They can't resist temptation.
But many to their vows adhere,
Save cash and constitutions,
So cheer them on, and do not scoff
At New Year's resolutions.

—Pittsburg Chronicle-Telegraph.

ANIMAL INTELLIGENCE.

It would be a difficult matter, I believe to determine which has the greater degree of intelligence, a horse or a dog. I give my preference to the horse, for, if he is abused by his master, he remembers the insult and generally returns blow for blow. We owned a beautiful little pony and had taught it a great number of tricks. It could paw its age (she never grew older than 6 years), nod and shake her head when asked questions, lie down for any one to mount her, climb up on a bench, open the stall doors, and do several things more that I will not mention. Once she was standing at the extreme end of the barn and the man who did the chores had to carry the feed past her each time to feed the others. She would get very impatient, and the man would not feed her first—oh, not for anything. He did not like her. So one day when he was going by she kicked him. He gave her a terrible whipping and she never forgave him. If she was loose, it was no use for him to attempt to catch her. Any other person could walk right up to her. Another time she fell through a bad bridge, and after that we had difficulty getting her over one. The children at home grew up and finally went away from home. Papa sold her, and the last I ever heard from her she was on her way to Tennessee to become the property of some little children.

I saw another little pony that could "cake-walk." The band played "Georgia Campmeeting" and the pony did her steps and bows almost perfect. This same horse represented the United States and another horse represented Spain. United States wore her colors, and in attempting to haul down the ones from Spain, discharged a small cannon which Spain pretended killed her. After she was down United States got her colors and stamped on her. When asked by her master what she would do with Spain if she would be a subject of her country and wear her flag, United States helped her on her feet and bowed to her.

The above is true, also the following story of the dog. I do not claim a dog has any great degree of intelligence. It seems to be instinct. This dog was only a little Skye terrier, but was greatly beloved by my youngest brother, Don, who fought all the terrier's battles, and he had many. Little Don sickened, and in a few days died. After his burial the dog seemed entirely lost, and would sit around and howl dismally. One day mama picked up one of Don's coats. The dog jumped upon it and would not be put down. Finally the coat was laid on the floor and never was a dog more happy. He died in about a year from my brother's death.

One day a child in our neighborhood was lost. All the afternoon and through the greater part of the night the entire country searched for him. We thought he would never be found alive, for a small creek ran near, and

it was no uncommon sight to see big, hungry wolves in the timber. The child's parents were distracted, though it was known the dogs had gone with him. Some one stumbled into a deep ravine, and there the child lay, sound asleep, with a dog on either side of him. E. A.

Weir, Cherokee County.

I could tell of several intelligent animals that we have raised on the farm, one of which was a colt we called Doll. She used to watch us go in the granary for grain for the horses. She would eat from the box with the other horses and when the boxes were empty she would go to the door and try to open it till she learned to do it to a finish. She would also shake hands with her front hoof when you told her "Howdy" and put out your hand.

A SMART CAT.

Rosie was a little kitten when I was only a boy of 14 years. She was a wee bit of a kitten when we got her, being only 2 weeks old. At first we had to feed her milk from a teaspoon, as she was too small to lap the milk. When she was hungry she would climb out of the box in which her bed had been made and mew for her milk, and after being fed she would climb back in her bed and sleep.

After she grew up to be a mother-cat she was so cute about her hunting. Ground squirrels and gophers are plentiful out here in Meade County. She would go and catch ground squirrels and bring them in where the little kits were, then mew and mew until the kits would come. Then she would go back and catch more. She would also catch rabbits that were nearly grown, quite as large as she was. She certainly would have to come upon them while they were asleep.

I have known her to bring several snakes to the house, but never learned how she killed them; but I have seen her pulling with all her might at a snake, her front feet braced, while the snake was two-thirds its length in a hole.

Another cute trick was when we used to take a pail of water to drown out squirrels. She would run along beside us just as contented as could be, and sit by the hole while the water was being poured in, and when Mr. Ground Squirrel came up she never failed to catch him.

I used to take the gun and go hunting for rabbits, and would divide with her when I got any. She soon learned to follow me whenever I took the gun and started out. I would try to make her go back, as the walk was too much for her, but at the first shot she would come to me with a bound.

One time in the winter, when she had three little kittens, and was 10 years old, she went out to the millet-stacks and caught a snow-bird which she brought in to the little ones. Of course, the one that met her first in answer to her calls got the bird. The other two looked at her, then at the lucky mate, then went to her and mewed. She mewed a few times to them, licked their heads and started off. In a few minutes she returned with two birds in her mouth which she gave to the two kittens. She then lay down to rest and seemed satisfied with her work.

We were all real sorry when she died. She lived to be 13 years old, and during her lifetime she always came to the call "Rosie, Rosie," instead of "Kittie." This is a real, true story. —CYRUS F. WELLS.

Meade, Meade County, Kansas.

An Intelligent Cat.

Last summer about the time the first crop of alfalfa was being cut we had two cats, and one of them had three small kittens.

Our neighbor south of us had a large field of alfalfa across the road just south of the house. The cat that had the little kittens would go over in the alfalfa field to catch birds and things to eat.

When the time came for the alfalfa to be cut the man who was running the mowing-machine, began cutting on the side next to our house; and that evening the cat came home with both of her hind legs almost cut off. The hamstrings in her hind legs were cut so she could not move around much and she was unable to get anything to eat. We began to feed her until, one morning, the other cat caught a young quail and brought it to the house to eat it. After she ate it, she went off and soon returned with another young quail in her mouth and called the other cat's kittens to her and gave it to them. Then she went off again and

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returned with another quail and gave it to the little kittens' mother. She did this every morning for about a week. And then the cat got so she could move around and shift for herself.

The cat did not bring young quails all the time, but would bring birds, and lizards, and other things she could catch.

CLAYTON KEITH.

Cedar Vale, Chautauqua Co., Kans.

One winter a few years ago we had a little colt that had no playfellow so he amused himself opening and shutting an old stable-door which fastened with a wooden button. He would turn the button, open the door, and if he happened to be standing too close to let the door pass him, he would rear upon his hind feet until he had pushed the door past, then shut it and fasten it with the button.

One day he was in the yard where the well was, and finding a bucket of water on the curb, he picked it up with his teeth, but when he set it down again it happened to be too close to the edge of the curb, and tipped over, spilling the water. Finding the bucket empty he stepped up to the pump, and taking hold of the handle with his teeth he began shaking it up and down as he had seen us do.

A little wren and his mate had their nest in a gourd hanging in a cherry tree near the kitchen door, and if any of us stepped to the door the little fellow was up on a limb in an instant, singing a cheery greeting, and as soon as we were gone he was very busy hunting bugs, etc., though apparently keeping an eye on the kitchen door, for as soon as we made our appearance, he was back on a limb, singing.

Another pair had their nest in a small house on the clothes-line post. One day while his mate was sitting, the singer flew to their little porch with a morsel and gave the usual signal; when she reached the door, he was sitting on the clothes-line singing as best he could while holding the morsel of food in his bill. She looked around and went back to her nest, when he again flew to the door and caller her out, but by the time she reached the door again he was on the clothes-line as before. He called her out that way three times, then finally gave her what he had brought for her.

A pair of bluebirds looking around for a suitable place for house-keeping spied a house put up for the wrens, the door of which was a little small for a bluebird. But after twisting and struggling around one of them managed to get inside. When he tried to come out he found it a more difficult task, as the opening was up some distance from the floor, and he had no suitable place to stand while crowding his shoulders out. After several vain attempts, during which his mate fluttered around and chirped, she at last took him by the top of his head with her beak, and fluttered and he wriggled as hard as he could and out he came, after which they left that house.

Last summer one of my White Wyandotte hens decided that a coop occupied at night by a flock of small chicks, would be a fine place for a nest, and all went well until one evening. White had decided it was time to begin sitting; so she greeted each chick that tried to arrange himself for the night with a peck from her beak which sent him out faster than he had entered. I noticed the trouble, so took White to the hen house, telling her as I went, that "That coop belonged to those chicks and she could not be

there at night, but must go to the hen house with the rest of the hens." She seemed to listen very attentively and would answer me now and then in her way.

The next day as I passed the coop several times I saw her sitting quietly in one corner, but that evening at roosting time she got up and walked out and when I went to look for her a little later found her sitting on the roost in the hen house.

"A Smart Dog."

I hardly know which animal displays the most intelligence, but the dog seemed to range among the first.

One in particular I have in mind, although scarcely more than a pup, who shows an unusual amount of intelligence. I will call him Jack. Jack's main aim in life, so far, is to eat. He first calls our attention to his presence by barking and keeps it up until noticed. When he gets in the house he jumps upon a chair for a piece of bread. If outdoors, he gets up on anything available. Once I had a piece in my hand and was standing by the wagon and he tried in vain to get on the tongue but it proved too small to afford standing-room.

His great trouble in life is driving up the cows, for when he was small they would run after him and hook him, so he is afraid of them. He will go after them but with a very sad expression on his face. There is one calf which was picketed out in the summer and they played together. Although generally good to mind, he will not drive that calf.

We can leave him in the room where there is meat, milk, etc., and tell him not to touch it and he never does.

UNA.

When I was a child in Mercer, Pa., my father bought a terrier-dog which answered to the name of Hagar. (For fear she would go back to her old home, my father kept her chained to the floor in a tight stall and kept it locked. There was no way any creature could reach her except through an opening from the hay loft above the manger. My mother had a fine flock of chickens. After a time, we saw our chickens were disappearing very rapidly and mother became suspicious of the dog, but father laughed at the idea; he said nothing could get into the stall and it was impossible for the dog to catch them. The next morning, my little brother took Hagar's breakfast and set it by the ring in the floor to which she was chained, came out, locked the door, and stationed himself by a crack in the partition wall where he could watch the dog. She never once looked at the food but went as far from it as her chain would permit and lay down, closed her eyes, and in a moment seemed fast asleep. Soon the chickens began to come down from the hay-loft through the opening over the manger and began greedily to eat Hagar's breakfast. In a moment she sprang and caught and killed a fat hen. She dropped the hen, lay down and went to sleep again. After a little the hens rallied around the food again, when in a few minutes another hen met the same fate. My little brother, thinking that quite enough, went into the stall, removed the dead hens and food, drove the hens out and fastened them out, and went to the house to report, carrying the dead hens as proof. The next morning, my father fed and watched the dog. She immediately went to sleep as on the day before, only my father stopped the fun when Hagar had killed one hen. He found she had used her food as bait and had

lived on chickens. She was unusually intelligent and very beautiful. My father prized her highly. He was a blacksmith and carriage-maker, and as his shops were three miles from the county seat, in the country, his farmer neighbors often came to borrow tools. When one came to borrow, Hagar would follow him home and if he laid the tool where she could reach it, she would grab it and take it home to father. One day a neighbor came and borrowed a scythe of father. Hagar followed him home at a safe distance. The man ground the scythe and prepared it for afternoon work, laid it down on the grass and went in to get dinner. Then came Hagar's chance. She took the scythe and started for home. When dinner was over, the man failed to find the scythe anywhere on the premises and when at once to tell father. Father felt sure that Hagar was mixed up in the matter, and feeling anxious for her safety, went with the man across lots towards his home. When they reached the fence which separated our orchard from the highway, there lay poor Hagar cut to death; she was on the inside of the fence, the scythe entangled in the fence on the outside. She was mourned loyally by us children, and deeply regretted by father; but mother took the matter very coolly, as Hagar would catch chickens. She left two puppies who proved to be fine watch-dogs, but one of them was a perfect thief from the time he could walk. But, as Kipling says, that is another story. L. W. T.

The Way One Little Girl Taught Her Kitten to Beg.

A little girl with whom I am acquainted had a nice little kitten which she named Tabitha Long-claws Tiddle-winks, a long name, but the kitten seemed unusually intelligent.

The little girl had tied an apple to the ceiling of the room by a long string, with which she and her kitten would play on stormy days. The kitten would stand on its hind feet and strike the swinging apple with its fore feet, first one foot and then the other.

The little girl would pet and feed her for this until she began to think she was doing something nice.

She would sit on her hind feet for an hour before dinner, begging for the good things she could smell cooking. Time flew fast and soon Tabitha Long-claws (as she was called for short) had a family of kittens around her.

And when they were fed, the kittens took up all of the room around the pan, so the mamma cat would reach over the kittens, put her paw in the milk, draw back and sit demurely down and wash her foot until all the milk was off, then repeat the trick.

When she grew older she became very cross; if any one came too near her, she would scold by growling, loud and cross. She was very jealous of any other cat. One of her kittens was allowed to come in the house, something Tabitha Long-claws was not used to. She made life miserable for the poor kitten and the people by her scolding. If any one came too close to her she would fly at their feet and scratch and bite, for which she was whipped soundly. And she finally ran away growling to herself, as much as to say: "They have brought a young cat into the house to take my place and I am insulted. I shall leave this place, my dear mistress has gone anyway."

She went, apparently brokenhearted and never returned.

But her little mistress, now a woman, takes pleasure in teaching kittens to sit and "beg." This she does by holding a morsel of meat or something tempting above kitten's nose just so she can not reach it.

They are quick to learn and will soon do this without being told.

There is now a pretty young "grand" kitten in the same house in which Tabitha Long-claws was raised, which is just as good for mice, as graceful and as pretty as her grandmother-cat ever was. R. E. KIM.

Larkin, Kans.

A Pony and Her Colt.

Topsy and Fly were a pony and her colt that were kept in the pasture with our cows.

I went after the cows every evening in the summer and I used to pet the little colt, Fly. But one evening I met Topsy running towards the barn without her colt and I wondered where the colt was. So I looked all around for it, and finally I heard a whinny from the direction of a shallow well, and I looked and saw the colt.

I could do nothing but run for assistance. I had gone only a little ways

when I met Topsy with my father riding her.

When she came running to the barn without her colt, he became alarmed, so he jumped on her back and she took him straight to the well, on a gallop.

While he helped the colt out, Topsy looked on anxiously and after it was out, she appeared to feel as though she had gone to the right place for help.

We noticed that there were a great many tracks around the well. This showed that Topsy had gone around the well several times, and then decided she could do nothing herself, so she went for help.

Two Colts.

Dolly and Queen are two colts that run loose in the farm-yard. All horses know intruders, which was shown by the way these colts acted.

One day a large white hog strayed into the yard, and Dolly seeing the hog, threw up her head, pricked up her ears and pranced after the hog.

Then a lively chase began, they ran around the hay stacks and through the orchard till they finally reached the gate and the hog ran down the road not to return again. Dolly came trotting back looking as though she had had a great victory.

Another time a gate had been left open into the sheep-pasture, and the sheep came out into the yard. As soon as any of them came near the barn, Queen would run them back, and then she would come back holding her head as high as though she was a real queen, and expected her subjects to praise her. AMANDA CHRISTIANSON. Corning, Kans.

One Sunday morning two or three summers ago, a spider built its web on our smoke-house door.

A wasp spied the spider and was going to get it, but the spider didn't do anything but weave the wasp's feet into its web.

Later I looked, and the wasp was dead. I think the spider thought there wasn't any use running and it wouldn't be a coward.

I will tell you about a horse, her name was Nell. One of our neighbors had her and thought a good deal of her; he wanted to move away from here, and Nell being so old he couldn't very well take her with him, so he gave her to us children.

Nell wasn't a gentle horse; whenever we went to catch her she would run after us and kick.

One night she got into Mr. C.'s cornfield. Mr. C. thought he would scare her; so he wrapped up in a sheet and went out where she was, and she ran him back to his house. She didn't believe in running from imitation ghosts. J. E. B.

My father owned a very fine shepherd dog named Jack. We had raised him from a puppy, and he was of great assistance on our dairy farm. At milking time we had only to say to him, "Jack, go after the cows," and away he would go by himself, separate the cows from the other cattle, and bring them in triumph to the milking yard. If sometimes, as rarely happened, one or more was left behind, we told him of it just as we would tell a boy, and he would go back and hunt until he found it and bring it in, never making a mistake in the number or kind he was after.

In the fall of 1862 my eldest sister married and my father gave Jack to her, her husband being also a dairy farmer. She was not permanently settled in the new home until spring, but Jack remained there with her husband the most of the winter intervening, making occasional visits to us in the old house. Whenever at such a time sister wished to send any message to her husband she would write a note, tie it to Jack's neck and tell him to "take it home to John" (her husband's name), and he obeyed her as quickly and as intelligently as a child could. The distance between the two places was seven miles and quite thickly settled all along. It soon became known that Jack was acting as a "messenger-boy," and to test him different people along the route would try to



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take the note from him, but in vain. He guarded it with the utmost care, bore it straight to the one for whom it was intended, and he alone could take it from him. As the dog was several years old before any thing of this kind was attempted, and, considering the distance he went, and away from the only home he had known until then, it has always seemed very remarkable to me. We loved him as if he were human, and when he died, at an advanced age, he was deeply mourned by us all.

Another unusually smart dog was "Billy," a mongrel black and tan, belonging to my husband in his young manhood. Billy loved his master devotedly, and was unhappy away from him. In 1869 Mr. K. went to Virginia, the dog of course being left behind at his father's. The poor little thing was utterly disconsolate, and mourned pitifully for his master until about a week after his departure when the first letter from him came. At the time father K. brought this letter from the office and carried it up stairs where mother to whom it was addressed, was lying down for her midday rest, Billy following closely after him. In some way, that seems mysterious to our duller senses, the dog knew the letter was from his master and his joy knew no bounds. He jumped upon the bed, sniffed at the letter and made all the wild demonstrations of joy with which he was wont to greet the return of his master after any absence from him, and it was some moments before he could be quieted. After this, he was much more reconciled to the separation, and comforted himself farther by taking an old coat of his master's for his bed, and would have no other.

Instances like these force us to the conclusion that animals have some degree of reason. We are more ready to admit the possession of souls in our "four-footed brothers," and with the Indian, grant them a place in our "happy hunting ground."

Fay, Kans. F. S. KELLOGG.

For the Little Ones

THE REASON WHY.

I know two boys who love to play—
Who all their teachers disobey—
And never do attention pay
To any word their elders say
From January until May!

But when the summer pleasures go,
And autumn's ruddy colors show,
And chilly winds begin to blow,
And dark November brings her snow—

These naughty boys make solemn pause,
And try to keep their teachers' laws,
And study hard and win applause;
And all this change is just because
They want to please old Santa Claus!

Now since this story is quite true,
Can one of these bad boys be you?
—Youth's Companion.

The Snow Man.

Marjorie and Gregory were twins (that means that Marjorie was just as old as Gregory, and Gregory was just as old as Marjorie). And they loved each other very much, oh, so much, that they could not tell you how much; and Marjorie always wanted Gregory to have the biggest apple, and Gregory

always wanted Marjorie to have the most candy; so you can see what a lovely time they always had.

One day when there was a beautiful blanket of snow all over the ground, Marjorie and Gregory went out to make a snow man. Marjorie made the leg and arm and body on one side, and Gregory on the other. Then they made the head, and Gregory stuck in a piece of corn-cob for one ear, and Marjorie a lump of coal for the other, and Gregory made one eye out of a little piece of wood, and Marjorie made one out of a stray button that she found in her pocket; and after a while they had a very fine looking snow man, all but a nose. But who was to make the nose?

"You need not bother about the nose, Marjorie. I'll make it," said Gregory. "Oh, but I want to make it!" said Marjorie.

"Well, I'm the biggest, dear," said Gregory, smiling at Marjorie, sweetly. "Yes, but I'm the littlest," said Marjorie, beginning to cry.

"Oh, well, if you're going to cry—" began Gregory. He almost said something cross, and he would have been very sorry afterward, but he thought just in time, and said, "Well, that's all right, you can do it."

When Marjorie saw how good he was, she wanted to be good, too, so she dried her tears and said, "Well, brother dear, I think you can do it better because you are the biggest."

So Gregory made a funny big nose and they both laughed at it. And then he said, "Now, he hasn't any mouth. Just run your little finger along under his nose, and then he will have one."

After that, whenever they made a snow man, Gregory made his nose and Marjorie made his mouth. And she almost always made it so that it turned up at the corners, and looked as if the man was laughing at them. But they did not mind, but just laughed back at him, for they had more fun than he.

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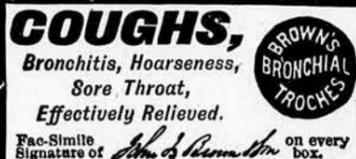
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In the Dairy.

Conducted by Ed. H. Webster, Professor of Dairy Husbandry, Kansas Experiment Station, Manhattan, Kans., to whom all correspondence with his department should be addressed.

Tenth Report of Cow-Test Experiment.

See KANSAS FARMER for April 10, May 15, June 26, July 17, September 18, October 16, November 27, and December 11, for previous reports. The January report is as follows:

No.	Name of Cow.	Selected by—	Fresh—	Yield.		Grain consumed.		Judges rank for profit	
				Milk, lbs.	Test, per ct.	Butter fat, lbs.	Corn Bran. chop. Total.		
243	Cowslip	J. W. Bigger	Nov. 3, 1901	194.3	5.2	10.10	64	128	3
236	Haster	E. C. Cowles	Dec. 10, 1901	33.5	6.7	2.24	34	68	1
244	Rose of Cunningham	J. W. Cunningham	Jan. 28, 1902	315.8	3.95	11.23	62	124	2
238	Clover Leaf	M. L. Dickson	Jan. 18, 1902	340.2	5.3	18.03	77.5	155	7
245	Molly	A. H. Diehl	Jan. 20, 1902	340.2	5.3	18.03	77.5	155	5
241	Rose of Industry	C. L. Elssasser	Jan. 15, 1902	340.2	4.35	25.20	108.5	217	8
240	Daisy Belle	S. A. Johnson	May 3, 1902	562.5	6.00	33.75	124	248	9
246	Floss	C. C. Lewis	Oct., 1901	272.0	7.45	20.26	108.5	217	6
242	May Queen	G. L. Priest	Dec. 25, 1901	272.0	7.45	20.26	108.5	217	4

Roughness per head for the month: Alfalfa hay 258 lbs.; millet hay 187 lbs.; sorghum hay 219 lbs.; Kafir fodder 200 lbs.; ensilage 372 lbs.; total 1,236 lbs.

TOTAL RECORD FROM MARCH, 1902, TO JANUARY, 1903.

No.	Name of cow.	Yield				Total Milk, lbs.	Total Butter fat, lbs.	Grain consumed, lbs.	Roughness, lbs.
		March Milk, lbs.	March Butter fat, lbs.	April Milk, lbs.	April Butter fat, lbs.				
243	Cowslip	761.6	33.89	762.1	23.00	797.5	35.88	658.9	30.64
236	Haster	849.5	32.28	743.7	29.00	878.4	36.01	793.0	34.10
244	Rose of Cunningham	1200.1	36.00	1090.1	35.97	1241.2	41.58	1065.5	36.41
238	Clover Leaf	733.1	21.62	642.9	20.25	745.7	23.86	593.9	21.97
245	Molly	824.0	25.95	726.8	24.34	830.3	29.47	742.5	26.73
241	Rose of Industry	802.0	25.27	791.5	26.91	838.1	33.10	664.6	23.92
240	Daisy Belle	503.6	25.68	477.0	25.04	564.6	30.40	438.3	23.89
246	Floss	630.3	30.88	582.8	29.43	687.3	35.39	613.0	31.84
242	May Queen	559.2	25.16	585.1	24.87	577.0	27.69	476.7	28.36
236	Haster	657.5	27.29	582.7	25.06	385.9	20.84	314.4	16.97
244	Rose of Cunningham	826.6	30.58	913.0	32.87	820.5	38.56	415.0	18.98
238	Clover Leaf	401.9	13.65	478.0	16.76	569.4	18.79	513.2	17.45
245	Molly	633.2	24.06	610.7	22.29	552.7	25.42	360.5	18.20
241	Rose of Industry	511.4	20.97	529.4	21.97	512.6	26.14	466.7	25.20
240	Daisy Belle	842.2	29.30	844.7	29.14	767.8	29.17	755.8	30.61
246	Floss	628.0	19.35	314.6	18.40	15.8	.92	.....	.....
242	May Queen	532.0	26.58	547.1	29.82	459.9	31.73	398.0	27.86
		November.		December.		Total		Grain consumed.	
		Milk, lbs.	Butter fat, lbs.	Milk, lbs.	Butter fat, lbs.	Milk, lbs.	Butter fat, lbs.	summed, lbs.	summed, lbs.
243	Cowslip	275.8	16.00	.....	.....	4894.7	254.49	1737.5	6033
236	Haster	209.0	11.29	194.3	10.10	4950.4	242.94	1944.5	6033
244	Rose of Cunningham	186.4	11.00	33.5	2.24	6955.3	284.09	2066.2	6033
238	Clover Leaf	332.3	11.64	315.8	11.23	4924.7	177.22	1303.5	6033
245	Molly	110.0	4.62	.....	.....	4757.5	201.08	1362.9	6033
241	Rose of Industry	817.4	15.71	340.2	18.03	5262.5	239.22	1567.4	6033
240	Daisy Belle	581.9	24.15	579.2	25.20	5405.1	232.44	1599.1	6033
246	Floss	334.9	18.75	562.5	33.75	3211.3	196.27	1266.3	6033
242	May Queen	293.8	20.71	272.0	20.26	4484.2	285.46	2101.6	6033

Where Does Milk Come From?

A friend of the FARMER writes as follows: "Kindly answer the following questions through the KANSAS FARMER: Does a cow's bag contain all of her milk, say at milking time, or does she only have a small amount in the bag? If this is the case, where does the milk come from?"

In answering the first question, we quote from Fleischmann's book of the dairy as follows concerning the quantity of milk that a cow's udder will hold: "The udder of a cow of ordinary milking capacity, carefully examined by us after slaughter, was found to have a total storage capacity of about five pints." As to how milk is formed, from the same source we have, "what takes place in the formation of milk in the udder is not as yet well understood. We do not know to what extent the constituents of the blood, the fat, the albuminoids, the carbohydrates, as well as the lymph bodies, and the substance forming the epithelial cells of the alveoli of the glands,

blood. This conclusion, although of a very general nature, is nevertheless of great practical importance."

A great many theories along this line have been published, but this author sums the whole matter up as above. Thus we still ask where does the milk come from?

Dairy Notes.

Narrow-mindedness in any direction or pursuit is its death-blow, but we all recognize the vast importance of absolute cleanliness in the dairy. A successful dairyman says there is always something to learn in the dairy business. One thing he advises is, never to use old rusty cans or pails. It is an economy to throw them away and get fresh ones. All utensils for dairy work should be made of tin. He has his made to order, uses the best of tin and has the joints made round. The best way to clean vessel in which milk has set, is, to first rinse with tepid water, then wash in hot water in which some good washing powder is dissolved in the proportion of a teaspoonful to a gallon of water. Turn the vessels upside down to drain well, then set them up again to air. Sunlight and air are indispensable.

The milkers should be free from odors, such as tobacco, onions, etc. It is best to use glass cans to deliver milk to customers, as it is impossible for any dirt to get into them. Many a pound of butter and gallon of cream is spoiled because the churn, butter-bowl and milk-pans have not been kept perfectly pure and clean; for the least impurity will impart an unpleasant flavor. Nothing takes on impurities so quickly as milk and butter. Think of the doctor-bills, and drug-bills, and long illness of typhoid fever that ensue from carelessness in this direction. The floors and shelves need to be

scrubbed often. A dairyman whom I know requires his milkers to wash their hands in borax water before milking and then dry them thoroughly; and requires their nails to be cut short, so that no germs can get under them. Pure borax will disinfect, but if adulterated it does no good.

Do not encourage or help any agricultural paper which admits whisky ads into its columns. What right has the publisher of an agricultural paper to send a drummer for a saloon into the sacred precincts of your home? Whisky, like other poisons, is seldom needed, and, like them, should only be taken under the directions of a physician, if at all. Do not take a bad paper because it is cheap. Nothing is cheap which comes like a thief in the night to corrupt the morals of your children and rob your fireside of its joy and happiness. This is not a temperance lecture, it is only good hard horse-sense, based on the experience of

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If the child cries in the night the cause of its distress must first be discovered before relief can be administered, and so it is with the suffering adult.

The brain-worker seeks sleep and rest in vain; tossing and tumbling from dark till dawn he arises with little energy, no ambition; he is weak, nervous, irritable; has no appetite for breakfast and only when stimulated by the incidents of his business or profession can he approach in any way his normal condition of either mind or body. This stimulation is out temporary and as the days go by ceases to appear under any circumstances.

Thousands who read this have undoubtedly experienced similar symptoms. The difficulty in most cases lies with the patient himself. He is prone to mistake the most prominent symptoms for the disease, and, consequently, commence a wrong course of treatment.

Do not say, "My stomach is out of order" and straightway offend it with artificial digestors, which, though harmless in themselves, perhaps, will ruin the stomach by doing its work and keeping it in an enforced state of idleness.

Your trouble lies deeper. It is a case of weakened or disordered nerves and may have arisen from a variety of causes. Overwork, worry, mental anxiety, lagrippe, exposure, mental or physical strain—any one or all of these things will, unless properly and promptly treated, develop into nervous prostration, or the chronic derangement of some vital organ, as the lungs, stomach, liver, kidneys, heart, eyes, etc. Dr. Miles' Restorative Nerve has cured thousands of cases of nervous disorder, of every degree of severity. It is unequalled as a tonic to the rebuilding of weakened nerves and wasted tissue. It will bring sweet sleep by soothing the brain; by the tonic effect of the nerves of the digestive organs it will restore to them their normal activity, bringing back appetite, flesh, color and strength.

All druggists sell and guarantee Dr. Miles' Nerve. Write for free Book on Nervous Diseases to-day. It will help you to understand your trouble. Dr. Miles Medical Co., Elkhart, Ind.

The J. P. Baden Produce Co.
 Winfield, Kansas.

We will bind ourselves to buy your Separator Cream from any Centrifugal Separator on present basis for five years.

How Does This Proposition Impress You?
 We will bind ourselves to buy your cream for five years on our present offer and give you the privilege of stopping at any time you desire. We will pay for Butter-fat in cream as shown by the Babcock test, on basis of quotation of Extra Separator Creamery Butter in New York, as follows:

New York Quotations Generally One Cent Higher than Elgin.
 Within 150 miles of Winfield... 2 1/2c less | From 200 to 250 miles... 3c less
 From 150 to 200 miles... 3c less | From 250 to 300 miles... 4c less

Mark your cans, deliver to your express agent, we do the rest. We will pay all express charges and return cans free of charge. We pay our customers twice each month. Give us a trial and you won't regret it.

We want your Cream; but you can stop shipping at any time it suits your interest, or convenience. If you send us only one can a month, we will thank you and use you right. When you commence doing business with us once you will have no reason to quit. Our manner of doing business, and our attractive inducements are bound to please. The enormous business which we have established, and which is increasing every day in the face of strong competition, is evidence that we have the very best outlet and procure the highest market values for our finished products. This of course enables us to pay you more money for your cream and produce than others. Write us or call on us for further information.

THE J. P. BADEN PRODUCE CO., Winfield, Kans.

The EMPIRE CREAM Separator.
 The Easy Running Kind.
 Will give better satisfaction, make you more money and last longer than any other. Our book shows why. Send for it.
 Empire Cream Separator Co.,
 BLOOMFIELD, N. J.



BUTTER MAKERS
 make better butter and more butter by using the
KNEELAND OMEGA CREAM SEPARATOR
 simple, cheap, efficient. Easily cleaned. Free from repairs. Guaranteed to suit or money back. Send for Free book, "Good Butter and How to Make It." The Kneeland Crystal Creamery Co., 26 Concord St., Lansing, Mich.




Davis Cream Separator Co.

**BEST IN THE WORLD
 EASIEST CLEANED
 MOST DURABLE
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CATALOGUES

Davis Cream Separator Co.,
 54 TO 64 N. CLINTON ST., - CHICAGO, ILL.

Save time and freight by ordering from

**PIONEER IMPLEMENT CO.,
 COUNCIL BLUFFS, IA.**

Stock Gossip.

(Continued from page 64.)

His fall pigs are all in prime condition and are ready to ship. He thinks that Kansas farmers and hog-raisers can not do better than to get a trio of the world's best swine, the O. I. C. He announces that the cattle feeders are after them on the run and their claim that they are the best hogs to follow cattle seems to be substantiated by long experience. Not only because of their rapid growing qualities but because they are less liable to disease. Write to Mr. Roat or visit his herd and you will be repaid.

On January 22 will be held a sale of registered Percherons at Kansas City, that will be of interest to all lovers of good draft-horses. Mr. R. D. Ross, Carthage, Mo., who has long been known as a breeder of French and National draft-horses will offer some of his best at the sale-pavilion on the date named. This entire offering is directly descended from Trophonious 9026 (16085) and Honfleur 4863 (775), and out of Lucrece 773 (11742), and Actrice 7709 (11020). A little tracing of these blood lines will show that this offering lacks nothing, while the individuals to be offered in the sale are fully up to the standard for size, bone, action, and other good qualities which Mr. Ross has maintained in his herd for so long. See the advertisement on page 80 and don't forget the date.

O. B. Smith & Sons, Cuba, Kans., breeders of Poland-China swine, are the owners of Old Moonshine 4783 A, who stands at the head of their herd. The other side of the herd is made up of Tecumseh, Black U. S., and One Price families. Just now they have a yearling boar that would please the most exacting buyers and would be fit for a show-boar if desired. They also have other young boars that are ready for service and they can spare a few bred-gilts. This herd is known as the Republic County herd and embraces not only the finest breeding in Poland-Chinas but Rose-Comb Brown Leghorns as well. There are a few cockerels of fine quality remaining that he can spare. See his advertising card on page 77, and write him if you want good stuff.

The sixth annual meeting of the Missouri Stock Breeders' Association closed its session at Springfield on January 8. Several items of importance were attended to, among them the passing of a resolution asking of the legislature an appropriation of \$20,000 for the purchase of pure-bred herds for the experiment station at the State University, and an added appropriation of \$10,000 to build suitable barns for the herds. Officers for the ensuing year were elected as follows: President, W. P. Harned, Vermont; vice-president, Benton Gabbert, Dearborn; secretary, G. B. Ellis, Columbia; corresponding secretary, Hayes Walker, Kansas City; treasurer, J. C. Hall, Hallsville. Mr. Harned was also elected a member of the executive committee. The place of meeting for next year was left to the executive committee.

Perhaps the most attractive poultry advertisement that ever appeared in a Western paper was that of Jas. R. Young of the Acme Poultry Yards, Manhattan, Kans., whose beautiful signature is a prominent feature in it. This advertisement appears on page 41 of the Kansas Farmer, and contains much that is of real value to the poultry-raiser. When it is realized that the poultry business has already assumed such magnitude that its annual returns exceed in value the total produce of corn and wheat, and when it is realized that this industry is merely in its infancy, the specialist as well as the general farmer will be glad to know where he can get such a desirable quality of birds of one of the best breeds as are those furnished by the Acme Poultry Yards. Mr. Young has been in the poultry business since 1839, and has won a most enviable reputation not only as a breeder of the best Plymouth Rock strains, but as a business man as well. He is perfectly reliable, and our subscribers need have no fears of dissatisfaction in dealing with him. Mention the Kansas Farmer and write Mr. Young for what you want.

Sometime since we had occasion to call attention to the quality of Herefords offered by Wm. Tibbles, Haddam, Kans., whose advertising card appears on page 77. This herd has been built up from the best blood lines, and much of it was sired by Don Pedro 82154, by Shadeland Dean 22d 68662, he by Shadeland Dean 51364. Don Pedro is out of Bright Lass 7th 56820, by Don Carlos, by Anxiety 4th. His present herd-bull is Expatiator 107721, by the great Corrector 48976, out of Lady Edwards 43581, who is a Lord Wilton cow, sired by a Grove 3d bull. Some of the cows now in the herd are particularly rich in breeding, for instance Irene 69034, by Wilton Grove 5th 55225, by Wilton Grove 50255, out of Curley Queen. Irene is out of Ilma 46161, by Star Wilton, by Lord Wilton, and out of the Grove Maid, by Grove 3d. Carmencita 51128, by Murdock 28545, by Beau Monde 9903, by Anxiety 4th. She is out of the Grove Maid 24th 26580, by the Grove 3d. These are mentioned merely to show some of the blood lines that exist in this herd and to indicate the quality which abounds here. Buyers can correspond with or visit Mr. Tibbles in the assurance of being treated right.

H. M. Davis, the big Percheron breeder at Thayer, Kans., has a number of Percheron stallions that are of extra quality and are now for sale. Among these may be mentioned Keota Gordon, coming 3 years old and weighing 1,800 pounds, who is claimed to be one of the best colts in the West. Black Joe is said to be one of the most symmetrical and best finished horses living. He was bred by Singmaster and is a grand breeder. Joker 2d is a very showy, good acting, blocky fellow and a wonderful breeder. Harlan is the maker of a good show-horse, in fact would hold his own in the ring now. The iron-gray Major D. is a five-topped cross Percheron colt which promises well and will make a top notcher. Carlan is a standard-bred colt and the sire of coachy fellows that will outdo a French Coach horse for stye and manners. The mature horses in this lot will be priced so that they will pay out within the next twelve months and the youngest will grow into money rapidly. Visitors who desire to

see this great stud of horses will be met at the train if they will notify Mr. Davis and will be sure of straight treatment and fair prices. See his card on page 78.

The Kansas State Poultry Association held a wonderfully successful meeting and exhibit in Topeka's great Auditorium during the week which closed January 10. Perhaps 2,000 birds of all kinds were on exhibition and served but to emphasize the interest which people of the West are taking in the poultry business. Few realize its importance as yet because it is merely in its infancy. In the same hall, and constituting part of the exhibit, was a handsome display of incubators and brooders, manufactured by the only incubator company in the State of Kansas. Although the Hiawatha is but one season old, it has won many admirers from its efficient work, handsome appearance and the fact that it has no cold corners. This company is located at Hiawatha, Kans., and has just issued a handsome catalogue containing a complete description of the incubators and brooders manufactured by this company, together with drinking fountains, various insect-destroyers, poultry-feeds, etc. It also has many recommendations from prominent people who have given the machines a thorough test. A postal card will bring one of these catalogues which is mighty handy to have about the house. Address Hiawatha Incubator Co., Hiawatha, Kans.

Mr. John M. Copeland, Glasco, Kans., has been a breeder of Shorthorn cattle since 1886, and we welcome him this week to a place in our breeders' directory. We are glad to do this for the reason that his herd represents some of the best Shorthorn blood to be found anywhere in the West. The herd is strong in Lord Mayor, Laird of Linwood and Thistletop blood, and no higher commendation could be given to any herd than to mention these great sires as its founders. The present herd-bull is Minister 2d 150171 by Minister 129219 out of Aberdeen Lassie by Lord Constable 104088. His second dam was Aberdeen Lass 2d, by Golden Rule 93267, his third dam was Aberdeen Lass by Scottish Viceroy 7762, his fourth dam was Miss Ramsden 2d of Maple Lawn, by Baron Kinellar 25609, and all of the young stuff now in the herd is the get of this bull. The owner of Lord Mayor is authority for the statement that he has sold \$26,000 worth of his get and still has fifty head remaining in the nine years which he has owned him and, although he is advancing in age, he has the wonderful record of not having varied fifty pounds in seven years. The performances of Lord of Linwood and of Thistletop are well known to all Kansas Shorthorn men and we congratulate our readers on the opportunity now offered by Mr. Copeland to secure stock of such breeding as he is able to offer.

The depletion of breeding herds during the last year wisely suggests the founding of new herds, or, at least, improving stock in general. The combination sale at Kansas City, Mo., January 26 and 27 will present the golden opportunity of getting in the game early in the year. This sale of Herefords promises to eclipse anything of its kind ever held in this country in character and quality of cattle. J. W. Lenox, Independence, Mo., is selling seven head, two heifers and five bulls. They are an evenly well developed lot all through and should find homes in good herds. Of the bulls we might mention Otto Shadeland, also Beau Laurel jr by the grand Armour-bred bull, Beau Laurel. The best of the bulls, no doubt, is Halbred, a grandson of Corrector and closely bred to the show-cow Happiness that sold for \$2,300. This bull is but 11 months old. One of the heifers is Lakeview Queen, by Earl of Lakeview out of Maranda. Robt. H. Hazlett, El Dorado, Kans., is contributing a number of calves of which none have any show-record outside of the county fair. They are a grand lot. Hazford, sired by Major Beau Real, and he by Wild Beau, a full brother of Wild Tom of Sunny Slope, his dam is Daisy G., the mother of Protocol. Coburn is a bull that will attract much attention and should go into a herd of pure-bred cows. The cow, which H. A. Schwand, Laclede, Kans., are all daughters of Archibald 1st and are in extra good flesh and large, well-proportioned animals. They are good breeders, and are bred to Sir Actor. E. A. Eagle & Son, Rosemont, Kans., are contributing fourteen head of cattle, and by far the strongest lot they have ever offered for sale, and include some of the first matrons of their herd. Among the cows might be mentioned Fanchon, a daughter of Wild Tom, who has a bull calf at foot by Gudgeff, and is due to calf a month after the sale. Stately, a granddaughter of Don Carlos, has a heifer-calf at foot and is safe in calf again to Gudgeff. Rose and other cows in like condition. Three splendid bulls, the offering of Makin Bros., Lee's Summit, Mo., are of the useful type of cattle, they are all well grown and will enter the sale-ring in good condition. They are as follows: Prince Vincent, Conqueror, and Captain, all well-bred and the three best these breeders have ever raised. The chance to purchase the Astor heifers offered by E. H. Brewster, Wilbaux, Mont., should prove an attraction to all. His noted cow, Lucas, with a bull-calf at foot, will also, be there with Capitol 8th. It is almost needless to say that Gudgeff & Simpson's offering is good. There are four yearling bulls, six 2-year-old heifers all bred. The bulls are of the right sort to head herds. Nine head are coming from the farm of Jones Bros., Comiskey, Kans., five of them the get of Lincoln 2d, prize winner of leading shows 1898-'99, St. Louis Lad jr., Sir Lincoln and other good ones. Noble Bros., Otterville, Ill., make their first offering at this time at public auction. Their consignment comprises some fine cattle. S. Drybread, Costello, Kans., has a good consignment with the blood of Lord Wilton, Anxiety, Grove 3d, Corrector and Wild Tom predominating. Judge Spencer is now at the head of the herd. There will be other quality as good from the herds of W. C. Shamate, Eskridge, Kans., G. W. Ross, Waverly, Kans., Chas. Specht, Rosemont, Kans., T. J. Rowe & Son, Rowena, Mo., D. L. Taylor, Sawyer, Kans., Peter Hecht, Tipton, Mo., Lowell, Barrol & DeWitt Live Stock Co., Denver, Colo., J. K. Rosler, Buttler, Mo., A. E. Metsker, Lone Star, Kans., Wampler & Son, Brazilton, Kans. Note date of sale and plan to attend. For catalogues address, C. R. Thomas, secy., Union Stock Yards, Chicago, Ill.

You can find out something you ought to know by writing to the BLUE VALLEY CREAMERY COMPANY, St. Joseph, Missouri.

Cheap Trip.. California In Pullman Tourist Sleepers on fast Santa Fe trains; also FREE CHAIR CARS, in charge of an experienced passenger director, who looks after the comfort of the passengers, points out places of interest, etc. New cars, courteous employees, excellent meals; the cheap and comfortable way to Los Angeles and San Francisco. Address T. L. KING, G. P. & T. A., Or T. M. JAMES, 830 KANSAS AVENUE, NORTH TOPEKA.

CANCER CURED With Soothing Ba'my Oils MR. M. YANT, OF CRETE, NEB.

No need of cutting off a woman's breast or a man's cheek or nose in a vain attempt to cure cancer. No use of applying burning plasters to the flesh or torturing those already weak from suffering. Thousands of persons successfully treated by this mild method. Cancer tumor, catarrh, ugly ulcers, piles, fistula, and all skin and blood diseases. Write to-day for free illustrated book. Address DR. BYE, Kansas City, Mo.

TO WOMEN WHO DREAD MOTHERHOOD! Information How They May Give Birth to Happy, Healthy Children Absolutely Without Pain—Sent Free.

DISEASES OF MEN ONLY. The greatest and most successful Institute for Diseases of Men. Consultation free at office or by letter. BOOK printed in English, German and Swedish, explaining Health and Happiness sent sealed in plain envelope for four cents in stamp. All letters answered in plain envelope. Val. cooels cured in five days. Call or address Chicago Medical Institute, 513 Francis St., ST. JOSEPH, MO.

The "1900" Ball-Bearing WASHING MACHINE SENT FREE

Without deposit or advance payment of any kind, freight paid both ways, on 30 days' trial. Unquestionably greatest family labor saver ever invented. Saves time, expense and wear and tear. A little of the family washing without rubbing clothes, hand scrubbing, or back breaking. Revolves on ball bearings and is therefore easiest running washer ever made. Will do two hours' washing in ten minutes. Washes collars, cuffs, laces, and the most delicate materials perfectly clean and positively without tearing them or wearing out a single thread. It will wash blankets, bed spreads, and the heaviest clothes just as easily and thoroughly. Clothes are torn and worn out more by wash boards and out-of-date hand rubbing washers than they are by use of the saving in soap, coal, and wear and tear of clothes will pay for machine in a short time.

ABSOLUTE PROOF. \$1,000.00 will be paid if this letter is not genuine. KANSAS CITY, Mo., May 14, 1902. I have given your washer a fair trial. It is the best washer I ever saw. It has washed my heavy blankets with ease. I washed them last spring and rubbed more than an hour and yet they had to go through again, but the "1900" Washer cleaned them thoroughly clean. We do our washing very quick and have no tired and worn-out feeling as of old. Mrs. J. L. BANNER, 4302 Troost Ave

Remember—You take absolutely no risk, incur no expense or obligation whatever. The Washer is sent by us on 30 days' trial, freight prepaid coming and going, and positively without any advance or deposit of any kind. THE "1900" WASHER CO., 256 F, State Street, Binghamton, N. Y.

PILES Rectal Diseases radically and permanently cured in a few weeks without the knife, cutting, ligature, or caustics, and without pain or detention from business. Particulars of our treatment and sample mailed free. Mr. M. McCoy, Goganc, Kans., Captain Company A, Fifteenth Indiana Infantry, writes: "Hermit Remedy Company, Dear Sirs:—I have doctored for piles since the Civil War—thirty-six years—and am now glad to report that after using your treatment for a few weeks I am completely cured. I believe you can cure any one, for a man could not be in a much worse condition than I was and live, and I am duly grateful to you. Respectfully, "M. McCoy." We have hundreds of similar testimonials of cures in desperate cases from grateful patients who have tried many cure-alls, doctors' treatments, and different methods of operation without relief. Ninety per cent of the people we treat come to us from one telling the other. You can have a trial sample mailed free by writing us full particulars of your case. Address, HERMIT REMEDY COMPANY, Suite 736, Adams Express Building, Chicago, Ill.

THE MARKETS.

Kansas City Live Stock and Grain Markets.

Kansas City, Mo., January 12, 1903. Kansas furnished two bunches of top cattle here this week. One draft weighing 1,614 pounds was brought in by Captain Birkett, of Eureka, and the other, weighing 1,525 pounds, was fed by J. A. Wood, of Ogdensburg, Kans. Both lots brought \$5.45. Receipts for the week amounted to 34,200 head, a slight gain over comparative periods. The packers wanted cattle the fore part of the week and were not adverse to giving the best prices since the close of December, but on Friday a break of 15@20c was had. Beef steers are now selling \$1@1.50 lower than a year ago. The run of the stock during the week was liberal and the market fluctuated from day to day according to the supply. The close was strong, however. Fed cows are selling at a range of \$3.25@3.75, while half-finished stock and canners bring lower values. The demand for stock cattle showed considerable improvement and the volume of business for the week was fairly large. Best stockers sold at \$4@4.25 and feeders sold up to \$4.50. Milk-cows brought \$30@60.

There is a belief prevalent among operators that better things are in store for the cattle-feeders. Those familiar with the trade say the midwinter rush of cattle to market is now about over and they look for prices to stiffen a little, although no fancy values will be paid the balance of the season. A heavy supply of cattle on feed in Chicago territory is the most bearish feature of the situation.

After a period of ups and downs, the hog market closed last week with a gain of about 10c from our last report. Receipts continued moderate all around the circuit, and at Kansas City the run was light, arrivals approximating only 38,700 head. This market seems to be in the very center of the hog shortage district, judging from the way supplies are coming in, up to and including Thursday values held firm to higher. On that day top hogs brought \$6.65. Friday and Saturday saw breaks occur, however, and the trade quit only 10c above the previous week's close. The bulk of hogs sold on Monday of this week at \$6.40@6.60, and the top sale was \$6.67 1/2. Well-posted traders profess to believe the market will go higher. A good-sized bet was placed here this week that \$7 would be realized by the middle of June. There is an undoubted shortage of swine in the country, but the packers have been able to bear down on pork because of the low price of beef. If the latter goes higher this spring hogs will have to follow.

Sheep receipts amounted to 16,500 head, against 13,000 the preceding week and 11,900 the corresponding days a year ago. Offerings ran largely to muttons and showed liberal offerings of Kansas-fed Western ewes. Quality of the stock received averaged only fair. On Tuesday the worst break of the season was had, values falling 15 to 20c. This has since been regained, however, and the market closed firm for the week on all light muttons. Lambs were in very light supply and sold 15 to 25c higher. Best natives are worth \$5.25 to \$5.70 and Westerns \$5.25 to \$5.60. The movement of Colorado fee sheep will be on in a week or ten days and some traders think this will cause a slight reaction in the sheep market.

A new record was established in the horse auction here on Tuesday when draft teams sold at \$600. The market on heavy horses, 1,500 to 1,700 pounds, was the best of the season and higher than the previous week. Single animals of extra quality brought \$200 to \$225, prices that were higher than those current last spring. The mule market showed life in the Southern trade and there was also some inquiry for miners. Values were a trifle stronger than in the preceding week.

Steadiness was a characteristic of the poultry markets here the past week. The supply of fresh stock just about kept pace with the demand and values showed no change. Turkey hens sold a trifle higher, however, towards the close of the week. Egg receipts continue to show much stock not strictly fresh. Shippers were advised to be careful in this respect as discriminations will be made against their goods if they are not up to grade. Best fresh eggs are worth 21c; seconds 15c; hens 9 1/2c; springs 9c; roosters 20 to 25c; turkey hens 13c; gobblers 12c; geese 8c; rabbits 50c to \$1.20 per dozen; ducks \$2.25 to \$4.00 per dozen.

The three principal cereals put on a gain of 1c or more during the week. Receipts were not heavy and the demand proved a shade too heavy for the supply. Grains had a bearish tendency towards the close, however. Cash wheat No. 2 at Kansas City is quoted at 66 to 68 1/4c; No. 4, 55 to 60c; No. 2 corn 38 1/2 to 39 1/4c; No. 4, 32 to 34c; No. 2 oats 34 to 35c; No. 4, 31 1/2 to 33c. Receipts of hay are running fair, with offerings of prairie liberal. Shippers are advised to send in tame hay. Prices are still holding high, however. Timothy is worth \$9 to \$13; clover \$8 to \$10.50; alfalfa \$8 to \$12; prairie \$4.50 to \$9.50. H. A. POWELL.

South St. Joseph Live Stock Markets. South St. Joseph, Mo., Jan. 12, 1903. There was a good, big, broad demand for beef steers all last week and in spite of the liberal marketing there was only a decline of 10c for the medium to good grades while the common kind sold fully steady. The demand for cows and heifers was strong at 10 to 15c lower prices. Stock cattle were in urgent request, and supplies were not up to the wants, under which circumstances prices gained 25 to 40c within ten days ago. The supply and demand is the keynote to the hog situation now, as was shown last week when prices ruled lower under heavy receipts and the loss was rapidly regained when supplies were reduced. The demand was strong from all the packers. The quantity was of good average with weights running heavy. Prices today ranged from \$6.35 to \$6.67 1/2 with the bulk selling at \$6.55 to \$6.65.

The highest prices this season on the river markets for lambs was realized here today by John Wagner & Son, of Fort Morgan, Colo., who marketed 886 head that averaged 76 pounds and sold at \$6.00. The demand continues strong from all the killers and under light receipts of lambs last week prices gained 15 to 25c. Sheep met with good favor but prices showed no material strength. Best yearlings sold at \$5.00, wethers at \$4.60 and ewes at \$4.25.

Lawrence Seed Markets.

Lawrence, Kans., January 12. We give you to-day's buying prices in our market. Outside prices are for best grades:

Table with 2 columns: Seed type and price. Includes Red clover, Alfalfa, Timothy, English blue-grass, Millet, Cane-seed, and Kamir-corn.

F. BARTEDES & CO.

SWINE.

FOR SALE—Barkshire boars, by son of Imported Commander and King Blossom; also bred gilts. O. P. Updegraff, Topeka, Kans.

YHARLING Poland-China herd boar for sale. Grand Chief, by Grand Chief 2d 55525. He will make a remarkable sire for some good breeder. Address L. W. Hamilton, Kearney, Neb.

FARMS AND RANCHES.

ALFALFA STOCK FARM—My stock farm of 480 acres is now for sale at \$25 per acre; will give time on \$4,000 at 6 per cent interest; contains 100 acres of splendid bottom land for alfalfa and corn, fine timber and everlasting, good water, equally well divided in pasture, hay and plowed land; good house, large barn, 64 by 90, and other buildings; lies 7 miles northwest of Yates Center, Kans. Write direct to owner and save commission. Lewis Reep, Yates Center, Kans.

FOR SALE—160, \$20 per acre. Write D. W. Bowman, Burr Oak, Jewell Co., Kans.

WANTED TO SELL OR RENT—To a good farmer and stockman, 800-acre ranch, good land, well improved, he to take an interest in the stock and products of the farm for his pay. J. C. Hughes, L. B. 302, Hartford, Kans.

FOR SALE—160-acre farm, 7 miles from Topeka, good road, 100 acres in cultivation, 40 acres creek bottom, 30 acres meadow, 25 acres pasture, 2 acres bearing orchard, 3 acres timber, running water, all good land, two good wells, 5-room house, cellar, good bank barn, 32x40, hold thirty tons loose hay and 1,000 bushels grain. Other cribs and granary. One mile from school and church, \$6,500. We have many other farms large and small. Write us about them. Moore & Jones, 600 Kansas Ave., Topeka, Kans.

FOR RENT OR SALE—Two sections of good pasture land, well watered and well fenced, six miles north of Ogallah, Trego County, Kans. Skimming-station at Ogallah. For particulars addressing, W. J. Rogers, Clyde, Kans.

FOR RENT—Farm of 432 acres, cash rent, well improved. For particulars, write to A. C. Krape, R. R. 2, Garnett, Kans.

IMPROVED farms and grazing ranches in western Kansas for sale. Send stamp for list. W. L. Seeling, Paxico, Kans.

FOR SALE—Farms and ranches in central and western Kansas. We have some great bargains in western ranches. Write us. R. F. Meek, Hutchinson, Kans.

FOR SALE—1,120-acre farm in Douglas County, Missouri, 14 miles south of Willow Springs. It is fenced all around with four galvanized barbed wire fencing. It has a new house, two stories high—with an L for kitchen. It has also a new barn, 24 by 40 feet, and it is especially suitable for a sheep or Angora goat ranch. There are seven springs on the place with plenty of water the year round for all stock. The reason for selling is that the owner is too old to attend to the ranch. There are 60 acres under cultivation, and the balance in pasture. Price \$4,000. Write to James Anderson, Leonardville, Kans.

JOHN G. HOWARD—Dealer in farms, ranches and pasture lands. Always the best bargains in Real Estate. Write me what you want to buy or sell. My commission is only 2 1/2 per cent. Emporia, Kans.

FOR SALE—480 acres of wheat and cattle farm land, 160 acres of it in wheat, 10 acres in alfalfa. No buildings. Sure to water. Good neighborhood. Price \$2,400. Write me at Jetmore, Kans., for particulars. A. T. Eakin.

FOR SALE—320 acres fine pasture land in Wabaunsee County, 2 miles from Halifax, good grass and never-falling water. H. R. Rice, Tecumseh, Kans.

POULTRY.

POULTRY FARM—Breeders of Light Brahmas, Plymouth Rocks and Partridge Cochins, took first, second, and third on Light Brahmas; first, second, and third on Partridge Cochins at Fort Scott show. A few good cockerels for sale. Eggs in season, \$1.50 per 15. G. W. Shuman, Fort Scott, Kans. Rural Route No. 1.

FOR SALE—Pure-bred B. P. Rock cockerels, \$1.50 to \$2. Mrs. Ada Ainsworth, Stilwell, Kans.

SIXTY MAMMOTH BRONZE TURKEYS—Two separate pens, headed by a 42-pound tom. Also Pekin ducks. Address Mrs. Fred Cowley, Columbus, Kans.

FOR SALE—Barred Plymouth Rock cockerels, \$1.25 each. J. A. Sawhill, Edgerton, Kans.

FOR SALE—Barred Plymouth Rocks and B. E. Red Games. Prices reasonable. Address Mrs. Porter Moore, R. R. 4, Parsons, Kans.

SEEDS AND PLANTS.

STRAWBERRY PLANTS—500,000 strong, thoroughly cultivated, many leading varieties. Also horse radish roots for planting. Ask for prices. J. Bales, R. R. 2, Lawrence, Kans.

ALFALFA SEED wanted in exchange for choice Poland-Chinas. J. H. Taylor, R. F. D., Chapman, Dickinson County, Kans.

200,000 FRUIT TREES! Wholesale prices; new catalogue. Baldwin, Nurseryman, Seneca, Kans.

MISCELLANEOUS.

FOR SALE—No. 4 Sharples Tubular cream separator, capacity 450 pounds per hour, cost \$125, used six months; in good condition. Cheap for cash. Continental Creamery Co., Topeka, Kans.

FOR SALE CHEAP—Pedigreed Scotch Collie pups. W. H. Richards, V. S., Emporia, Kans.

WANTED—Man with family to work on farm by the year. Must be practical farmer and stockman. Place good for years to right man. Farm two miles from city. Address 708 Harrison St., Topeka, Kans.

"A Man admires a Well Dressed Woman." How to get fashionable goods absolutely in-re. Send 6 cents in stamps. We tell you how. The Great Eastern Mfg. & Trading Co., 186 Pearl St., N. Y.

The Stray List.

Week Ending January 1.

Barber County—J. E. Holmes, Clerk. MARE—Taken up by J. E. Wheat, in Eagle tp. (P. O. Eagle), Dec. 23, 1902, one black mare, branded N D on left shoulder, F C on left hip; valued at \$20.

Woodson County—J. P. Kelley, Clerk. STEER—Taken up by F. O. Wells, in North tp., Nov. 24, 1902, one red yearling steer, white face, C on left shoulder, slot in each ear. Greenwood County—C. D. Pritchard, Clerk.

HEIFER—Taken up by L. A. Gather, in Quincy tp. (P. O. Neal), one heifer, mostly red, some white, 1 year old, tip of right ear cut off, white face and heavy with calf; valued at \$14.

Linn County—J. A. Cady, Clerk. HEIFER—Taken up by W. M. Barker in Sheridan tp. (P. O. Pleasanton), Dec. 11, 1902, one red muley heifer about 18 months old, weight about 750 pounds; no marks or brands; valued at \$18.

Crawford County—John Viets, Clerk. HORSE—Taken up by A. A. Messick in Baker tp., one brown horse, about 8 years old, one-half blaze in lower part of face, two hind feet and right fore foot white; weight about 800 pounds; collar marks.

Week Ending January 8

Greenwood County—C. D. Pritchard, Clerk. STEER—Taken up by L. H. Kinsel, in Quincy tp. (P. O. Quincy), Dec. 13, 1902, one light red steer, 2 years old.

Lyon County—H. E. Peach, Clerk. COW—Taken up by J. A. Sprague, 4 1/2 miles northwest of Emporia, Dec. 13, 1902, one red cow, dehorned, 4 years old, slit in brisket.

Barber County—J. E. Holmes, Clerk. COW—Taken up by T. A. Cross, in Valley tp. (P. O. Isabel), Nov. 1902, one black cow, right ear split, left ear cropped, branded V 2 S heart on left side and hip; valued at \$22.50.

Marshall County—James Montgomery, Clerk. MARE—Taken up by W. A. Yeager, in Cottage Hill tp. (P. O. Blue Rapids), one bay mare with black mane and tall and black feet up to fetlocks. Supposed to be about 1 year old last spring. Rather small.

Jefferson County—R. H. Delbert, Clerk. COW—Taken up by F. G. Stark, in Fairview tp., on Dec. 4, 1902, one red cow or heifer, crumpled horns, some white on belly, flank, and tail, also a small white spot on left leg above knee, and with ear either cut or frozen off; valued at \$25.

Week Ending January 15.

Shawnee County—A. Newman, Clerk. HEIFERS—Taken up by V. Anderson, in Mission Tp., April 30, 1902, one light red muley heifer 2 years old, square cut in left ear; also one dark red heifer, 1 year 6 months old, slit in right ear.

Wilson Co.—C. W. Isham, Clerk. COWS—Taken up by John S. Gilmore, in Fredonia, Nov. 17, 1902, one pale red muley cow, with underbit in right ear and swallow-fork in left ear, white spot in forehead, lower half of tail white, small white spot on back; valued at \$20. Also one dark red muley cow; valued at \$20.

STEER—Taken up by G. H. Sutcliff, in Central Tp., Nov. 23, 1902, one red and white spotted steer, underbit in left ear; valued at \$15.

Comanche Co.—T. M. McIntyre, Clerk. COW—Taken up by L. L. Stubbs, in Nescaunga tp., Dec. 13, 1902, one red and white cow, 3 or 4 years old; valued at \$25.

FRUIT FARMS FRUIT LANDS

My specialty—specially selected fruit lands and commercial orchards. South Missouri, North Arkansas, and Paying Orchards near Kansas City.

SAMPLES.

40 acres, 15 miles southeast of Kansas City, 15 acres assorted apples, 5 grapes; also berries, etc., 8 acres rough, balance fine land; good house, barn, 3/4 mile rock road. Price \$3,000.

177 acres famous Howell Co., Mo., 3/4 miles shipping point, 60 acres bearing apples—3 years old, fine improvements. Price \$4,000. Investigate.

80 acres Benton Co., Ark., near Goodman's big orchard at Gentry, 30 acres 7-year apple, assorted and fine shape, coys buildings, the water, 1 mile from town. The price, \$3,500.

1,200 acres fine fruit land, south Missouri, only 1 mile from R. R., fine for fruit. \$2 per acre.

Fine Pocket Map, Missouri, Kansas, Arkansas, or Oklahoma, and big list of farms, either State, 10c, stamps or silver. LOTT, "THE LAND MAN," 120 West 8th St., KANSAS CITY, MO.

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A bright man, with light team, in every county. Steady work and good wages to the right man. Reference required. For particulars address, KOCH V. T. CO., Winona, Minn.

FARMERS

who wish to better their conditions are advised to write for a descriptive pamphlet and map of Maryland, which is being sent out free of charge by THE STATE BUREAU OF IMMIGRATION OF MARYLAND.

Address: Mr. H. Badenhop, Secretary, Merchants Nat'l Bank Bldg., Baltimore, Md.

The Poultry Yard.

State Poultry Show.

The State Poultry Show was held in the auditorium at Topeka, January 7-10. The attendance was large and included many prominent people. The following is a complete list of prizes awarded:

Barred Plymouth Rocks—H. M. Cole, Winchester, 2 cock and pullet; Charles E. Short, Topeka, 3 hen, 4 pullet; H. L. Vesper, Topeka, 3 cock and pen; Mrs. Geo. M. Clark, Topeka, 3 pullet; L. B. Hamilton, Narika, 2 pen; A. C. Rait, Junction City, 1 cock, 1, 2, and 3 cockerel; J. K. Thompson, Topeka, 1 pullet and hen, 4 cockerel; L. L. Dyche, Lawrence, 1 pen, 2 hen, 4 cock and hen.

White Plymouth Rocks—J. R. Moore, Valley Center, 5 pen and hen; John D. Mills, Topeka, 2 cockerel and cock, 3 pen; J. H. Low, Osawatie, 2 hen, 5 cockerel; W. M. Usher, Topeka, 1 and 3 hen, 3 and 4 pullet; E. Lunenberger, Topeka, 4 hen; J. H. Sweever, Nortonville, 4 pen; Mitchell Bros., Valley Falls, 1, 2, and 5 pullet, 1, 3, and 4 cockerel, 1 cock, 1 and 2 pen.

Buff Plymouth Rocks—A. J. Waddell, Wichita, 3 and 4 hen; Mrs. M. J. Jardon, Baldwin, 5 hen, 3 pullet, 2 cockerel, cock, and pen; Robert Larmer, Ravenwood, Mo., 1 pullet; Mrs. J. E. Hartman, Leavenworth, 1 pen, hen, and cockerel, 2 pullet; Mrs. A. McNulty, Circleville, Texas, 2 hen, 4 cockerel, 5 pen; George H. Gurtler, North Topeka, 1 cock, 2 and 3 cockerel, 4 and 5 pullet, 3 and 4 pen.

Sweepstakes for largest display—Barred Plymouth Rocks, A. C. Rait, Junction City; White Plymouth Rocks, Mitchell Brothers, Valley Falls; Buff Plymouth Rocks, George H. Gurtler, North Topeka; Buff White Wyandottes, W. A. Forbes, North Topeka; Golden Wyandottes, Judge L. Hawn, Leavenworth; Light Brahmas, T. F. Weaver, Blue Mound; Dark Brahmas, N. R. Nye, Leavenworth; Buff Cochins, Charles Steinberger, Wakeeney; Partridge Cochins, W. J. Scott, Nortonville; Single Comb Brown Leghorns, A. J. Kerns, Salina; Rose Comb Brown Leghorns, Harry Finch, North Topeka; Single Comb White Leghorns, H. C. Snort, Leavenworth; Rose Comb White Leghorns, Mrs. Ida E. Filer, Madison; Buff Leghorns, Mrs. A. A. McNulty, Circleville, Texas.

White Wyandottes—Thomas S. Lyons, Topeka, 2 cockerel, 4 pullet, 1 and 2 hen, 1, 2, and 3 pullet; M. B. Caldwell, Beeler, Kans., 3 pullet; Emil H. Mueller, Booneville, Mo., 4 cockerel; W. E. Forbes, Topeka, 2 cock, 5 cockerel, 3 and 5 hen, 5 pen; E. H. Menyer, Leavenworth, 1 cockerel and pen; R. S. Paxton, Leavenworth, 3 cock, 1 and 4 hen, 3 cockerel, 5 pullet, 2 hen; J. H. Brown, Clay Center, 1 cockerel, 2 hen, 1 and 2 pullet, 3 pen.

Buff Wyandottes—W. A. Forbes, North Topeka, 1 and 3 pullet, 1 and 2 hen, 1, 2, and 3 pen, 1 and 2 cockerel, 1 cock.

Golden Wyandottes—S. K. Lasey, Narika, 5 cock; A. C. Smith, Topeka, 2 hen, 3 cock, 5 cockerel and pen; William Greaves, Wamego, 2 pullet; H. H. Geyer, Ottawa, 3 hen, 4 cock; Judge L. Hawn, Leavenworth, 2 cockerel and 3 pen; J. B. McHugh, Courtland, Mo., 4 pullet, 5 hen; George Shelley, McPherson, 1 cockerel, 6 pullet, 1 pen; F. B. Gahagen, Topeka, 1 and 3 pullet, 1 hen, 2 cock and pen; Mrs. A. E. Creel, Carrollton, Mo., 1 cock and 3 cockerel; Elliott Marshall, St. Joe, 4 cockerel, hen, and pen.

Silver Laced Wyandottes—M. B. Caldwell, Beeler, 4 cock, 5 pullet; Mrs. W. J. Barnes, Topeka, 5 pen; Mrs. J. W. Gause, Emporia, 1 hen, 2 pullet, 2 pen, 3 cockerel and pen; Elliott Marshall, St. Joe, 2 cock and hen, 3 pen; Mrs. G. E. McGill, Leavenworth, 4 hen, 4 pen, 5 hen and 3 cock; Mrs. E. A. Creel, Carrollton, Mo., 1 cock, 1 and 2 cockerel, 1, 3, and 4 pullet, 1 pen.

Light Brahmas—Mrs. N. Van Buskirk, Blue Mound, 3, 4, and 5 cockerel; T. F. Weaver, Blue Mound, 1 cock, 1 and 2 cockerel, 1 and 2 hen, 1, 2, 3, 4, and 5 pullet, 1 and 2 pen.

Dark Brahmas—N. R. Nye, Everything.

Buff Cochins—Charles Steinberger, Wakeeney, 1, 2, 3, and 4 cock, cockerel, hen, pullet, and pen.

Partridge Cochins—W. J. Scott, Nortonville, 1, 2, and 3 pullet; 1 pen.

Single Comb White Leghorns—H. C. Short, Leavenworth, 1 and 3 pullet, 2 and 3 hen, 1 and 3 pen, 2 cock, and 3 cockerel; F. P. Bacon, Topeka, 1 hen and cock, 3 pen; E. B. Aley, Holton, 1 and 2 cockerel, and 2 pen.

Rose Comb White Leghorns—Ida E. Filer, Madison, 1 pen, 1, 2, and 3 pullet and 1 cockerel.

Black Langshans—F. H. Snow, Lawrence, 4 cockerel, 4 and 5 pullet, 3 pen; J. W. F. Hughes, Topeka, 1 cockerel, 3 cock, 1 and 3 pullet, 1 pen; largest display H. M. Talmer, Florence, 3 cockerel, 2 pullet, 4 hen, 2 pen; Mrs. Shrader, Berlin, Neb., 2 cock; E. H. Inman, Bartlett, Kans., 1 cock, 5 cockerel; C. I. Yarrington, Princeton, Mo., 1 and 2 hen, 4 pen; E. E. Simpson, Topeka, 5 hen; D. M. Tipton, Rome, 2 cockerel, 5 pen; A. E. Lutes, Topeka, 3 hen.

S. C. B. Minorcas—J. M. Rebstock, Newton, 1 and 2 cockerel, 1 hen, 1 and 2 pullet; largest display, W. E. McCarty, Topeka, 2 cockerel, 3 and 4 pullet.

White Minorcas—E. L. Simpson, Topeka, 3 cock, 1 and 2 hen, 1 and 2 pullet, largest display.

W. F. B. Spanish—Chas. Parette, Atchison, 1 cock, 1 cockerel, 2 hen, 1 and 2 pullet, 1 pen; M. A. Chesney, Topeka, 1 and 3 hen; H. D. Chesney, Birmingham, 2 and 3 cockerel, 3 pullet, 2 and 3 pen, largest display.

Houdans—W. L. Bullene, Lawrence, 1 and 2 cock, 1 and 2 cockerel, 1, 2, 4, and 5 hen, 1 pen, largest display; E. H. Muller, Boonesville, 3 cock, 3 hen, 3 and 4 pen; J. W. Luce, Wetmore, 3 cockerel, 2 pen.

Pit Games—Mockey Bros., Topeka, 1 cockerel, 1 and 3 pullet; C. L. Ward, Narika, 1 cock, 1 and 2 hen; J. M. McFarland, 2 cockerel.

Red Fyle Games—C. L. Ward, 1 cock, 1 hen, 1, 2, and 3 pullet, 1 pen, largest display.

B. B. R. G. Bantams—T. I. Herren, Topeka, 1 and 2 cockerel, 1 and 2 hen, 1 and 2 pullet, 1 pen.

C. I. Games—A. R. Withers, Leavenworth, 2 and 3 cockerel, 1 and 2 hen, 2 and 3 pullet, 2 pen; L. B. Beeler, Newton, 1 pullet, 1 cockerel, 1 cock, 3, 4, and 5 hen, 1 pen, largest display; E. Marshall, St. Joe, 2 cock, 3 pen.

B. B. Red Games—J. L. Patterson, To-

MR. CLARK'S ENDORSEMENT

Will Doubtless Have Strong Influence in the Right Direction

Of particular interest at this time is the publication of an interview with Mr. W. H. Clark, a brother of Secretary of State George A. Clark, of Topeka, Kans., in whose office he is employed. In the course of the interview Mr. Clark said:

"Along in 1890, I was living in Junction City, Kans., and working at my trade of printer on the Republican. I had a bad attack of rheumatism and could not seem to get over it. All sorts of medicines failed to do me any good and my trouble kept getting worse. My feet were so swollen that I could not wear shoes and I had to go on crutches. The pain was terrible.

"One day I was setting the type of an article for the paper telling what Dr. Williams' Pink Pills for Pale People had done for a man afflicted as I was and I was so impressed with it that I determined to give the medicine a trial. For a year my rheumatism had been growing worse, but after taking Dr. Williams' Pink Pills a short time I began to improve. I bought four boxes in all, but I did not need to finish the last one. Before the last box was half taken the pain and the swelling had all disappeared. That was ten years ago and rheumatism has never troubled me since. I am 46 years old now; I weight 191 pounds and can truthfully say that I haven't felt better in the past twenty years than I do right now."

Dr. Williams' Pink Pills for Pale People go directly to the seat of the disorder, purifying and enriching the blood by eliminating poisonous elements and renewing health-giving forces. They are a positive specific not only for rheumatism, but for such diseases as locomotor ataxia, partial paralysis, St. Vitus' dance, sciatica, neuralgia, nervous headache, the after-effects of the grip, of fevers and of other acute diseases, palpitation of the heart, pale and sallow complexions and all forms of weakness either in male or female. Dr. Williams' Pink Pills for Pale People are sold by all dealers or will be sent postpaid on receipt of price, fifty cents a box; six boxes, two dollars and fifty cents, by addressing Dr. Williams Medicine Co., Schenectady, N. Y. Be sure to get the genuine; substitutes never cured anybody.

peka, 1, 2, 3, 4, and 5 hen, pullet, 1 cock, 1 pen, largest display.

G. S. Bantams—Jos. Aigner, 1, 2, and 3 pullet, largest display.

S. S. Bantams—J. W. F. Hughes, 1 pullet; J. S. Forsythe, Winchester, 2 cockerel, 1 hen, 2 and 3 pullet, 2 pen.

Buff Orpingtons—Mrs. H. Shrader, Berlin, Neb., 3 pullet, 2 cockerel; Mrs. Ricketts, Topeka, 2, 4, and 5 hen, 1 and 5 pullet, 1 and 4 cockerel, 1 pen, largest display; O. P. Wingrove, Clay Center, 3 hen, 3 pen; Eccleston & Son, Emporia, 3 cockerel, 1 and 3 hen, 2 and 4 pullet, 2 pen.

B. C. Bantams—Mid-West Poultry Yards, Kansas City, Mo., 1 cock, 1 hen; Stanley Coon, Topeka, 3 pullet; T. C. Wiggins, 3 cockerel, 1, 2, 4, and 5 pullet, 3 pen, largest display.

Blue Andalusians—J. D. Martin, Salina, 1 cockerel, 1 and 2 pullet, 2 and 3 hen, 1 pen; E. Marshall, St. Joe, 1 and 4 hen.

E. G. Dorkings—J. C. Greenfield, Topeka, 1, 2, 3, and 4 hen, largest display.

S. S. Hamburgs—H. H. Von Langen, 1 cockerel, 1 and 2 pullet, largest display.

W. P. Ducks—W. R. Fredericks, Topeka, 4 cockerel; E. E. Smith, Lincoln, Neb., 1 and 3 cock, 1 and 2 cockerel, 2 hen, 1 pullet; Mrs. Shrader, Berlin, 1 hen, 2 cock.

R. C. R. I. Reds—E. F. Hunting & Co., Kansas City, 1 and 2 pullet, 1 hen, 1 cock, largest display.

White Guineas—J. W. F. Hughes, 1 cock, 1 hen, 1 pullet.

Pea Guineas—J. W. F. Hughes, 1 hen; J. H. Low, Osawatie, 1 cockerel, 1, 2, 3, and 4 pullet, largest display.

M. B. Turkeys—Mrs. A. Griffith, Osawatie, 1 pullet; Mrs. I. T. Detler, Grantville, 1 cock, 1 and 2 cockerel, 1 hen.

W. H. Turkeys—Mrs. Shrader, Berlin, Neb., 1 hen, 1 pullet, 1 cockerel; J. R. Taylor, Topeka, 1, 2, 3, 4, and 5 cockerel, 2 and 3 pullet, 2 hen, first trio.

Me and Jake Hefner.

Me an' Jake grewed up together, was school mates back in Indiana, and both married doters of Zeke Jones. This was thirty-three years ago this last fall. We boarded with our folks first year, then we heard about the free land out in Newbraska and we fixed up a big covered wagon and pulled out fur better or worse. Jane and Tilda hated to part with their folks and they couldn't be blamed fur it; I think they liked me and Jake all right but since comin' to think on it, it was callin' fur considerable resolutions on them to leave the peace and quiet of their old homes, fur what?

POULTRY BREEDERS' DIRECTORY

FOR SALE—A fine lot of Black Langshan cockerels for sale. Some with score cards by Judge Rhoades. James Bottom, Onaga, Kans.

FOR SALE—Choice White Wyandottes and White P. Rock cockerels. R. F. Meek, Hutchinson, Kans.

MRS. E. F. NEY—Breeder of WHITE WYANDOTTES, Bonner Springs, Kansas. Cockerels, \$1.00. Eggs in season.

COCKERELS—Indian Games and Black Langshans, farm-raised, price \$1 each, if taken soon. H. Baughman, Wymore, Neb.

SCOTCH COLLIES—Some fine females, from registered stock, for \$4.—A. P. Chacey, R. R. 1, North Topeka, Kans.

SCOTCH TERRIERS—Finest bred in this country. Heather Prince, the champion of Scotland, and sire of Nossagey Foxglove, out of the champion imported Romany Ringlet, best service at our kennels. G. W. BAILEY & BRO., Beattie, Kans.

I HAVE some very fine pedigreed Scotch Collie pups for immediate shipment. I also have some extra fine B. P. Rock hens and young cockerels will sell at a bargain if taken soon, as I need the room. Can furnish pairs, trios, or pens headed by a male no kin to hens or pullets.

W. B. WILLIAMS, Stella, Neb.

For Sale: 150 Pure-Bred Light Brahmas

Best birds we have ever offered. Prices are right and our stock is just what you want. Write us just what you want and will quote best prices.

F. W. DIXON, HOLTON, KANSAS.

They didn't know nor we didn't know, but they cheered up by the time we got oven into Iowa, and by the time we got to the Missouri River they seemed to like to look out and see things we was passin'.

I have been thinkin' considerable about old times lately. Talk about the brave boys in blue and Dewie at Manila, I don't know whether they had more courage than Jane and Tilda or not.

Tell the truth about it me an' Jake didn't have much money; we owned three horses between us and the wagon in the most valuable things we owned was two of the best girls ever growed up in Indiana. As well as I can think Jake started with \$31 to a cent, I had close onto \$28.

Fur a couple days after we crossed the river there was scatterin' houses; there was enough prairie layin' out, but it seemed like the U. P. Railroad owned nearly everything that was worth ownin'. The settlers told us to drift off south of the Platte River to find Government land, and so we did. After leavin' the timbered country in Indiana where there was lots of logs to build houses, it looked queer to see the stables made out of sod and stove pipes comin' up out of the ground where people was livin' down in caves. Jane and Tilda kept wantin' to see down in the dugout caves and we made excuses to a settler and he invited us down to see his folks. Somehow it seemed like we struck home soon as we got in. The wimin was awful clever and I am here to tell you that if it was not so unfashionable, that a dug-out is just about as good as any other kind of house. Everything was nice and clean, pictures on the wall, and homelike just as much as any place I ever seen since then, they seemed so glad to have us come down to see them. They asked about which way we come and about our folks. We went past where their folks lived over in Illinois but we didn't know it. We all got acquainted right from the start.

They was bound to have us settle near to them and the man, his name is Bill Haines, went with me and Jake to the land office and we filed on claims as close to Haines as we could. Bill Haines and his wife and all of us was about equal when it come to what we was worth. Bill helped us us put up a sod stable and done the carpenter work to the dug out. He was carpenter, because he owned all the saw any of us had. It kind o' went agin me to have somebody else do the carpenter work, but Bill was so clever to all of us that I kept quiet about bein' a carpenter myself.

Nobody but people that has took homesteads, a hundred miles from nowhere, can even think about the stayin' qualities that it takes to make good settlers under tryin' circumstances. I don't mean to use up all your paper with one letter, but if you print this letter I will send you another one about sod-chicken-houses, and how the wimin folks and the hens should have more credit than they git fur settlin'



"THE HIAWATHA" Is the most successful hatcher. Its wonderful success and popularity is due to superior construction and its scientific principles of heat and ventilation. **IT NOT ONLY HATCHES GOOD STRONG CHICKS, BUT LOTS OF THEM.** Our machines are guaranteed—your money back if you are not satisfied. They are strictly high grade in every detail. A first-class machine at a reasonable price. Send for our catalogue. It is free.

"THE HIAWATHA" MFG. CO., Hiawatha, Kas., U. S. A.

DON'T SET HENS

the same old way while a 200 Egg Natural Hen Incubator Costs But \$25, other sizes equally as low. Over 125,000 in use. Indispensable to anyone who keeps a hen. Our Patent protected against imitations. Agents wanted everywhere, either sex, no experience necessary. Catalogue telling all about and 25c Free Formula FREE if you write today. **NATURAL HEN INCUBATOR CO., 205, Columbus, Nebraska.**

VICTOR INCUBATORS
Hatch every fertile egg. Simplest, most durable, cheapest first-class hatcher. Money back if not positively as represented. Perfectly automatic. Takes care of itself. Your money back if you say so. Catalogue free.
GEO. H. STAHL, Quincy, Ill.

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Perfect in construction and action. Hatches every fertile egg. Write for catalog to-day.
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and Brooder on 80 days' trial. Improved automatic regulator keeps the temperature exactly right. No guesswork. No complications. Perfectly automatic. Takes care of itself. Your money back if you say so. Catalogue free.
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No incubator is so sure as the Klondike. It is simple, has no delicate parts, is a perfect self-regulator, is automatic in all its actions and can be depended upon at all times. For free catalogue and poultry guide, address **Klondike Incubator Company, Box 978, Des Moines, Ia.**

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with new automatic, direct action regulator, is the best hatcher on earth. Sold at fair price on **30 Days' Trial.** Don't experiment with untried machines. Get a Sure Hatch and be sure. New catalog, full of illustrations and valuable information free.
SURE HATCH INCUBATOR CO., Clay Center, Neb. or Columbus, Ohio.

SHOEMAKER'S BOOK ON POULTRY
and family almanac for 1903. Over 200 large pages of best book paper, with the colored plates true to life. Tells how to raise chickens profitably, their care, diseases and remedies. Diagrams with full descriptions of Poultry houses. All about **INCUBATORS, BROODERS, and Thoroughbred FOWLS**, with lowest prices. You cannot afford to be without it. Only 15c.
C. C. SHOEMAKER, Box 600, Freeport, Ill., U. S. A.

Counting Chicks Before Hatching
is not safe unless you have an **IOWA ROUND INCUBATOR**
R. C. Bauermeister, Norwood, Minn., got 493 chicks from 503 eggs. He followed directions, the machine did the work, because it was built on right principles and by good workmen. The IOWA has fiber-board case, does not shrink, swell, warp or crack. Regulation and ventilation perfect. Our free book gives more testimonials and full particulars. Everything about incubation free.
IOWA INCUBATOR COMPANY, BOX 157, DES MOINES, IOWA

Barred Plymouth Rocks, White Plymouth Rocks, Buff Cochins, Partridge Cochins, Light Brahmas, Black Langshans, Silver Wyandottes, White Wyandottes, Silver Spangled Hamburgs, Brown Leghorns, and Belgian Hares. First-class Standard Stock of Superior Quality. Stock For Sale. Eggs in Season. Write Your Wants. Circular Free.
A. H. DUFF, Larned, Kans.

BEES If interested in bees subscribe for the **Progressive Bee-Keeper** 50c per year. Sample copy free, also copy of catalogue of Bee Keepers' Supplies.
LEAHY CO., HIGGINSVILLE, MO.

up the plains country; I will have to depend considerable on Jane when it comes to the chicken question, but her and Tilda are equal to most anything that needs to be done.

M. M. JOHNSON.

Clay Center, Neb.

Buff Cochins.

The true, well-bred English type of Buff Cochins of today, is quite a different bird from the old American type of Cochins largely found in the past, especially among farmers who are and have been friends of the Buff Cochins. The Cochins belong to the Asiatic class, and have been one of the leaders of their class for many years. Our English cousins have rather exceeded us in producing and improving the Cochin family up to the highest point of excellence in the general make-up of the bird, in utility, as well as fancy. The Cochins that have been bred in



this country are a stocky, leggy bird, with light leg and toe feathering, and light cushions. They more resemble a racy ostrich shape than those of the English type. The English bird is a fine carriage fellow, gets up a high head and tail, a very blocky, plump, round body, and rather a short leg, with extremely heavy leg and toe feathering, and a broad heavy cushion of down feathers.

The Buff Cochins should be just what the word buff means, a solid golden buff, with even color in every section of the body. It is true, that when it comes to absolute perfection it is but a small per cent of them that are near perfection in color, or a very high scoring bird. No bird has ever been found that is perfection, or will score a hundred points. The Buff Cochins, as a distinct breed, are high scoring birds, possibly no other exceeds them in this respect and when it comes to the color of plumage, they have the best over all other buff varieties. The surface color should not only be a good even buff, but the under color down to the skin should also be a rich golden buff, and, if possible, as strong shade as at the surface, but ordinarily the under color runs a shade lighter. A large per cent of well-bred Buff Cochins show a little black in tail and wing feathers, and also some white. This is allowable by the standard, but would run the scale of points lower in their score.

As a farmer's fowl, the Buff Cochins have become very popular, and many farmers keep them in their purity, and would not exchange them for any other as a profitable farm fowl. The Buff Cochins have proven themselves excellent winter layers. When most smaller breeds were getting ready to lay in mid-winter, the Buff Cochins were already doing a good laying business, and furnishing eggs just when eggs were at their highest price. A few years ago, the farming community had an impression that the all-purpose fowls were confined to one or two varieties, but this has been rapidly disproven by the introduction of the large Asiatic breeds, and now you will find them in every farming community, and not only a grade of them, but in their absolute purity, and they are rapidly gaining ground as a farmer's all-purpose fowl.

Those who adopt any of the large or Asiatics as a farm fowl, or as fowls for common market purposes, should bear in mind, that they must be marketed earlier than the small breeds. By this we mean, that the smaller breeds will remain more active at an older age than the heavy fowls. We give them but one year's difference, as compared with the Plymouth Rocks or Wyandottes. The heavy birds will do good service until two years old and past, but never carry them over this limit. They are now beginning to get clumsy, and carry a heavy, fat carcass, and just now they will bring a price per pound equal to two or three smaller birds. It is now largely the rule to carry no fowls over two years old, for none will prove as profitable

over as under this age. As a sitter, and as a mother, no fowls equal the Cochins, and if properly handled, no manner of hatching or brooding can exceed them. The standard weight of Buff Cochins is, cock 11 pounds, hen 8 1/2 pounds, cockerel 9 pounds, pullet 7 pounds. A. H. DUFF. Larned, Kans.

It is a mistaken idea to suppose that turkeys do not thrive in confinement. Some of the best fanciers of these birds in the country practice yarding successfully. Of course, the space in which the turkeys are enclosed should not be too small, not less than from one to three acres for a moderate-sized flock. One advantage of yarding is that it enables the breeder to get all the eggs laid by the hens. Another is that it facilitates the protection of the chicks against the attacks of hawks and predatory animals. It is commonly supposed that because a turkey will fly up a tree to roost, it would fly over the moon if it saw a grasshopper on the other side. A turkey will fly over anything on which it can alight, but it will not attempt to fly over a wire-netting fence, as it can not see anything to rest its feet upon. Remember this fact.—Exchange.

The Apiary.

Conducted by A. H. Duff, Larned, Kans., to whom all inquiries concerning this department should be addressed.

Artificial Swarming.

EDITOR KANSAS FARMER:—In your issue of December 4, I noticed Mr. Duff's method of artificial swarming, which he thinks as nearly like natural swarming as any method that could be adopted. I would, however, suggest that unless there is a fertile queen at hand to introduce to the hive that is without a queen, or what is next best, a queen cell that is sealed over and will hatch in from one to three days, much time will be lost in the matter of recruiting and keeping the numerical strength of the queenless colony, which during the honey-gathering season is a matter of great importance. Then to supply such a want, it was my custom when I kept bees in Indiana, when the swarming season was approaching, to swarm one colony artificially, and in about ten to twelve days after swarming them, the queenless hive would have anywhere from two or three to a dozen or more sealed queen cells. Then I would swarm a number of colonies on Mr. Duff's plan, and give one of the surplus queen cells above referred to, to each queenless swarm. This I accomplished by cutting out a queen cell with a piece of comb about an inch square, and fitting it in a hole cut to fit the comb and cell taken from the colony used to start queen cells. A queen is reared from a worker-egg, and will hatch in fifteen days from the egg, so that if one of these cells is given to an artificial swarm ten to twelve days after it is started by the bees, it will hatch out soon, and in about ten or twelve days after hatching, the young queen will begin laying eggs, so that there will be about ten to twelve days' time saved by being prepared with sealed queen cells to supply to new swarms, or to the hive left queenless. I never knew a queenless colony of bees to refuse to accept these cells, but I always found the cell fastened in a very short time after they realize that they are without a queen, and that this was their quickest and shortest way to fit themselves with a queen. G. BOHRER. Lyons, Rice County.

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The Veterinarian.

We cordially invite our readers to consult us when ever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the Kansas Farmer. Give age, color, and sex of animal, stating symptoms accurately, of how long standing, and what treatment, if any, has been resorted to. All replies through this column are free. In order to receive a prompt reply, all letters for this department should give the inquirer's postoffice, should be signed with his full name, and should be addressed to the Veterinary Department, Kansas Farmer, Topeka, Kansas.

Warbles.—Can you give me a remedy that will kill grubs or warbles in cattle, especially one that can be applied externally? The cattle dips advertise to kill them but my cattle were dipped twice in October last, ten days apart, for the itch or mange, in the swim-bath tobacco-dip. But I find on examining the cattle there are a great many live grubs or warbles in their backs yet. Hope some one has a simple but effective remedy, and will give it to us through the columns of the "old reliable" KANSAS FARMER.

Lamborn, Kans. SETH FENTON. Answer.—We do not know of a medicine that will kill them this time of the year. If it did it would probably make more trouble than to leave them alone. If you will pinch up the skin tight where the grub is and with a sharp knife enlarge the opening a little it will come out easily and when pour the cavity full of camphor phenique.

Injured Spine.—I have a yearling steer which is unable to get upon his feet. When he attempts to rise his rear hoofs are usually turned back. Can not determine whether stifle, hock or pastern are most affected. Front legs seem all right. It is now five days since he got down. Have done nothing except move him to shelter and make him as comfortable as possible. What can I do for him?

O. E. SIMMERS. Abilene, Dickinson County. Answer.—Take equal parts of ammonia, turpentine and linseed-oil; mix and apply over small of back twice a day. Give a teaspoonful of tincture of nux vomica three times a day.

Grease.—I have a 5-year-old bay (Clyde) mare, weighs 1,400 pounds. The hair on her legs is very heavy. Last January she had a crack come half way between fetlock and hock. I applied carbolic acid but the trouble spread from her hoofs to her knees and hocks on all her legs. I tried everything without avail. Finally placed her in care of local veterinarian. The remedy he applied burned the hair and skin off her legs. The scabs formed and have not shed off very well. Most of the hair has grown in. Her legs are sensitive with this dry, crumbly scab, and she is very hard to manage now. The hair on her entire body is full of dandruff and she itches all over. G. W. BAILEY. Beattie, Marshall County.

Answer.—Take sugar of lead 5 ounces, sulphate of zinc 4 ounces, in 4 quarts of water; mix and apply with a small sponge tied on a stick three or four feet long, twice a day. Give in bran dry sulphur sub. one pound, arsenious acid one dram, nitrate of potash seven ounces; mix and divide into thirty powders and give one twice a day. Feed mostly bran and give regular exercise.

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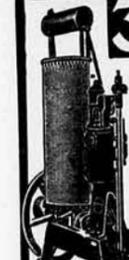
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Shady Lane Stock Farm

HARRY E. LUNT, Proprietor, Burden, Cowley Co., Kans. A few choicely bred Poland-China Boars for sale, some choice open gilts and bred sows

Elmdale Herd of High-Class POLAND-CHINAS

Shawnee Chief 28502 at head of herd. If you wish to buy some extra nice bred gilts, meet me at the Improved Stock Breeders' meeting and let me show you some of the right kind. W. L. REID, Prop., R. R. 5, North Topeka, Kas.

..Oak Grove Herd.. OF PURE-BRED Poland-Chinas

For Sale—A few choice Boars and 50 Gilts, some bred for early spring farrow. Write, or come and see... GUS AARON, R. F. D. 5, Leavenworth, Kans

Providence Farm Poland-Chinas.

Correct by Corrector, Perfection Chief 2d by Chief Perfection 2d, Jewell's Silver Chief, and Kron Prinz Wilhelm, herd boars. Up-to-date breeding, feeding qualities, and large, even litters in this herd. Young stock for sale. J. L. STRATTON, One mile southwest of Ottawa, Kans.

REPUBLIC COUNTY HERD OF Poland-Chinas

Tecumseh Wilkes Black U. S., and One Price brood sows, with Old Moonshine 47783 A at head of herd. A splendid yearling boar for sale that will please you. Also other young boars ready for service and some bred gilts. Use Comb B. own Leghorns of the finest. O. B. SMITH & SONS, Props., CUBA REPUBLIC COUNTY, KANSAS.

PEOAN HERD OF Poland-Chinas.

Our boars of serviceable age are all sold, but we have a number of good ones of September and October farrow; also a fine lot of bred gilts, sired by Model Tecumseh 64133, J. L.'s Best 70655 and U. S. Wilkes 25821.

J. N. WOODS & SON, R. F. D. No. 3, Ottawa, Kansas

CHOICEST STRAINS ...OF... POLAND-CHINA HOGS

400 head in herd. Fashionably bred sows and gilts bred to Broad Gauge Chief 25723, first prize winner International Show, 1900, and Simply O. K. 24290, first prize winner Missouri State Fair 1901. 200 winter and spring pigs in special offer. Bargains in registered Stallions and Mammoth Jacks. Also SHORTHORN and POLLED DURHAM CATTLE.

SNYDER BROS., WINFIELD, KANS

CHESTER WHITE SWINE.

D. L. Button, N. Topeka, Kans BREEDER OF Improved Chester Whites Stock For Sale. Farm 1/2 miles northwest of Reform School.

Maple City Breeding Farm, Breeders of Choice Strains of Registered O. I. C. Swine, and Galloway Cattle

The prize-winning boar, Eli 4049, at head of herd. The best in Chester Whites for sale in set of young boars and gilts. J. S. GILKEY, MAPLE CITY, COWLEY COUNTY, KANSAS.

The Crescent Herd O. I. C. WHITE

The World's Best Swine Some choice spring boars ready for service, and Gilts bred for sale. This stock is O. K. and can not be excelled for the money. Every hog guaranteed. Write for prices and Free Delivery proposition. JOHN W. ROAT & CO., CENTRAL CITY, NEBRASKA.

BERKSHIRE SWINE.

Large English Berkshires

Boars and Gilts for sale at prices to suit. Write quick and get our prices; also a few good yearling boars

Manwaring Bros., Lawrence, Kans

Knollwood Farm Herd

BLUE BLOODED BIG BONED ROAD BACKED BERKSHIRES...

A few fancy young boars ready for service. Orders booked for spring pigs. E. W. MELVILLE, EUDORA, KANSAS.

EAST LYNN HERD OF LARGE ENGLISH BERKSHIRES

Herd headed by Premier 4th 55577 assisted by Rutger Judge 2d 61106.

ONLY THE BEST. Imp. Lady Elma 4th 46683, the highest priced Berkshire ever sold in Kansas City, is in our herd and there are others like her. Inspection invited six days in the week. WILL H. RHODES, Tampa, Marion Co., Kans.

Fall Berkshire Boars

FOR SALE, QUICK, AT A REASONABLE PRICE

We have for sale a few choice yearlings, sired by Baron Duke 30th 50017, he by Baron Lee 4th 33446, and out of Duchess C 35th 33683. The dams of these boars are of the most desirable strains of the most desirable strains of the most desirable strains. Inspection or correspondence desired. Address ACHENCACH BROS., Washington, Kas., Breeders of Berkshire Swine, Double Standard Polled Durham Cattle, and W. P. Rock Chickens.

CATTLE.

ENGLISH RED POLLED CATTLE—Pure-bred Young Stock For Sale. Your orders solicited. Address L. K. HASELTINE, DOHCHESTER, GREEN CO., MO. Mention this paper when writing.

HEREFORDS FOR SALE.—Having sold the most of my herd, I have left for sale five fine yearling bulls. Write me for particulars. I will sell them cheap. E. S. COWEE, R. R. 2, BURLINGAME, KANSAS.

MEADOW BROOK SHORTHORNS—Ten fine young bulls for sale—all red. Red Laird, by Laird of Linwood, at head of herd. F. C. KINGSLEY, Dover, Shawnee county, Kansas.

COBURN HERD OF RED POLLED CATTLE. Herd now numbers 115 head. Young bulls for sale. Geo. Groenmiller & Son, Centropolis, Franklin Co., Kans

D. P. NORTON'S SHORTHORNS. DUNLAP, MORRIS CO., KANS. Breeder of Pure-bred SHORTHORN CATTLE. Herd bull, Imported British Lion 133662. Young stock for sale.

North Elm Creek Herd Pure-Bred Shorthorns and Poland-Chinas

Scotch-topped Young Mary females with 9th Knight of Elmwood 161507 at head. Call on, or write W. J. Smith, Oketo, Kas

Glenwood Herds

SHORTHORNS headed by Victor of Wildwood, by Golden Victor he by Baron Victor. Late herd bull Gloster 137952. Polands headed by Glenwood Chief Again. For Sale—Choice young bulls; also females. Prices right. Choice fall boars and gilts cheap. Visitors invited. Correspondence solicited. Address C. S. NEVIUS, Chiles, Miami County, Kansas. 40 miles south of K. C., on main line of Mo. Pac. Ry.

Corrector Herefords.

A few choice yearling and 2-year-old heifers bred to one of Corrector's best sons for sale very reasonably; also some 4-year-old cows with calves at foot and rebred, and just four bulls under 1 year out of Lord Wilton and Grove 8d cows. Visitors welcome. Correspondence prompt. WM. TIBBLES, Haddam, Washington Co., Kans.

JOHNSON'S Hereford Ranch.

Herd headed by Dick Turpin 81521. Choice young breeding animals of both sexes for sale. Parties met at train if notified L. F. Johnson & Son, R. R. 4, Gauda Springs, Kas

...Hazford Herefords...

Herd headed by the young show bull, Protocol 2d 91715, assisted by Major Beau Real 71621, a nephew of Wild Tom. Females largely the get of Bernadotte 2d 71634. A few choice young bulls for sale. Robt. H. Hazlett, Eldorado, Kansas

CATTLE.

POLLED DURHAM CATTLE. 20 head of both sexes. Bulls of serviceable age and young cows bred. Eligible to two records. Correspondence solicited. A. E. BURREIGH, KNOX CITY, KNOX COUNTY, MO.

ABBOTSFORD STOCK FARM OF SHORTHORNS. For Sale—After August 15, the herd bull, Imp. Beauty's Heir 145125; also 30 high-grade cows and heifers, good milkers. D. Ballantyne & Sons, Herington, Kas.

ESKDALE HERD OF Aberdeen - Angus Cattle.

YOUNG STOCK FOR SALE. JAMES FRATER, Fredonia, Wilson Co., Kans.

MAPLE LEAF HERD OF THOROUGHbred SHORTHORN CATTLE and POLAND-CHINA SWINE.

Farm is 2 miles south of Rock Island depot. JAMES A. WATKINS, Whiting, Kans.

Shorthorn Bulls For Sale From the Valley Grove Herd.

An extra good lot, reds and roans, sired by Lord Mayor 112727 and Knight's Valentine 157068. T. P. BABST & SONS, AUBURN, KANS. (Telegraph Station, Valencia, Kansas.)

MODEL BLUE GRASS FARM HEREFORDS.

Stock For Sale. OVERTON HARRIS, Harris, Mo

Red Polled Cattle

20 years of line breeding. Blood of (A-4), (A-1), (E 11) represented. High-grade stock, either sex, young or aged, for sale. A. Z. BROWN, GUILFORD, WILSON CO., KANSAS.

HEREFORDS and SHORTHORNS FOR SALE.

23 registered Hereford bulls, 8 to 10 months; 12 registered Hereford heifers, 8 to 10 months; 9 registered Shorthorn bulls, 14 to 24 months; 50 registered Bates and Cruickshank Shorthorn cows, 2 to 8 years old, bred to Rosebud's Prince 18748. Prices very low. Call or address Louis Hothan, Carbondale, Kans

...Clover Cliff Farm... REGISTERED GALLOWAY CATTLE

Also German Coach Saddle, and trotting-bred horses. World's Fair prize Oldenburg Coach stallion Habbo, and the saddle stallion Rosewood, a 16-hand 1,100-pound son of Montrose in service. Visitors always welcome. BLACKSHERE BROS., ELMDALE, CHASE COUNTY, KANSAS.

E. H. WHITE, ESTHERVILLE, IOWA Importer and Breeder of GALLOWAY CATTLE

Herd Foundation Stock A Specialty. A Few Choice Females and 14 Bulls For Sale. Inspection or Correspondence Invited.

THE ..N. MANROSE..

Shorthorns

Rural Route 5, Ottawa, Kans. Giltspur's Knight 171591, at head of herd. Young bulls ready for service for sale.

"The Wayside" Herd of Registered HEREFORDS

"ANXIETY WILTONS," with Printer 66884, March On 14th 108876, and Good Sign 140887, as Service Bulls, will be represented at South Omaha, January 22-23—get a Catalogue and Kum. Some excellent young things among this year's calves for sale—private treaty. Do you want SHOW HERDS that will WIN? Get one by Printer, and one by March On 14th, be on top, and see them take first and second place. W. W. GRAY, Fayette, Missouri.

JAMES A. FUNKHOUSER PLATTSBURG, MO., BREEDER OF HIGH-CLASS

Herefords

BULLS IN SERVICE: Heslod 2d 40679, March On 6th 96537, Heslod 85th 116352, Onward 2d 118599.

Sunflower Herd of... SCOTCH and SCOTCH-TOPPED

Shorthorn Cattle, Poland-China Swine. Two Scotch bulls in service. Representative stock for sale. Address Andrew Pringle, County, Kansas.



Eakridge, Wabaussee

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**A. Bumgardner & Son, Holton, Kas., Breeders of
....RED POLLED CATTLE....**
A herd bull and a few young ones for sale.

**ALLENDALE HERD OF
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The Oldest and Largest in the United States
Splendid recently imported bulls at head of herd.
Registered animals on hand for sale at reasonable
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Iola and La Harpe; address Thos. J. Anderson,
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**Vinewood Herd of Registered
SHORTHORNS**

Armour Bearer and Lavender King cows with
American Royal prize-winner Orange Lad 171599 and
Lavender Gloster 166056 in service. Advance Guard
and Lavender King yearling bulls for sale.
D. K. KELLERMAN & SON,
Mound City, Linn County, Kansas.

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Breeders of Scotch and Scotch-topped
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The prize-winning bull, Scott Junior 124222 at
head of herd. Choice young bulls
and heifers for sale.
W. J. SNODGRASS, Gordon, Butler Co., Kans.

**THE SUNFLOWER HERD PURE-BRED
Angus Cattle.**

Herd headed by MALE LAD
30645. Herd numbers 250 head,
the largest herd bred by owner
in America. Stock for sale.
Address
PARRISH & MILLER,
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**CHAMPION
GALLOWAYS
FOR 1902.**

Up-to-date Galloway Cattle, All Ages,
For Sale.
Personal Inspection or Correspondence solicited by
C. N. MOODY, Breeder, ATLANTA, MO.

HESIOD HEREFORDS
Highest class females with Hesiod 16th 56466,
and Copyright 90079 head of herd.

Choice Young Bulls
Including two show animals for sale
Wesley Sloan, Wellsville, Kansas.

**..GREENDALE RANCH..
BREEDERS OF
..PRIZE-WINNING..**

**SHORTHORN CATTLE, BERKSHIRE
SWINE, and SHROPSHIRE SHEEP**
Great constitution and lung capacity gained in
high altitudes. A few select young swine and sheep
for sale. **ED. GREEN, MORRISON, COLO.**

**Elder Lawn Herd
Shorthorns**

Headed by GALLANT KNIGHT
and Imp. Tilly Cairn.
Bulls, Cows, and Heifers, for sale at bargain prices.
Can supply car-load lots if desired.
Some show yard material.
T. K. TOMSON & SONS, Dover, Shawnee Co., Kans.

Bill Brook Breeding Farm.

**SHORTHORN CATTLE and
ANGORA GOATS.**
Herd Bull, IOWA SCOTCHMAN 2d 138687.
Write for what you want. Address
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**Rocky Hill Shorthorns
and Saddle Horses**

Sempstress Valentine 157771 and Mayor
129229 at head of herd. Larkin's Duluth and
Kansas King at head of Saddle Horse Herd.
J. F. TRUE & SON, Perry, Kansas.
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M. E. Moore, Cameron, Mo.,
is offering some fine Pure-bred Holstein-Friesian
Bulls for sale from official tested dams and
sires. A few choice females to offer.

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**PERCHERON HORSES, AND
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**GARRET HURST, Breeder, ZYBA, SUMNER
COUNTY, KANSAS.** Young stock for sale, of either
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Any of the following Percheron
Stallions:
Keota Gordon, weight about 1,800; Black Joe, weight
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1,800 pound horse or over; Carlin, 1,100-pound Stand-
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they can pay out this season.
Address **H. M. DAVIS, Thayer, Kansas.**

**HENRY AVERY & SON,
BREEDERS OF
PURE PERCHERONS**

The largest herd of Percheron horses in the West
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Prices consistent with quality. Address or come
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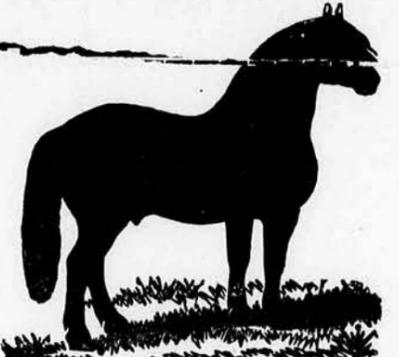
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H. W. McAFEE, Topeka, Kans.
Breeder of
**CLYDESDALE HORSES,
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FOR SALE—25 Clydesdales, including
three registered stallions of serviceable age,
and thirteen mares.
Inspection and correspondence invited.

Cheyenne Valley Stock Farm.



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—Breeder of—

**PERCHERON HORSES, AND
POLAND-CHINA HOGS**

For Sale—Fifteen young stallions and a few mares.
Inspection and correspondence invited.

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Greatest Importing and Breeding
Establishment in the World.
Famous Prize-Winning Stud of
**PERCHERONS and
FRENCH COACHERS.**

On hand upward of
500 HEAD.

Four Large Importations in 1902,
forming, with our home-breds,
The Choicest Collection Ever Assembled,
including Four of the Six First-Prize winners
at the great annual French Show of the Societe
Hippique Percheronne in 1902. At the recent
INTERNATIONAL LIVE-STOCK EXPOSITION

at Chicago, the Oaklawn Percherons achieved
distinguished honors. The Champion Stallion
and every First-Prize winner (except one)
in the regular stallion classes were imported by
Dunham, Fletcher & Coleman.

Notwithstanding the superior quality of
our horses our prices are lower than can be
obtained elsewhere in America.

If a Percheron or French Coach Stallion
is needed in your locality, correspond with
us, with the view of our sending a salesman
to place one, with your assistance. Reliable
men who thus demonstrate ability in this
line of work have no difficulty in arranging
to represent us in the selling of stallions.
Catalogue sent on application.

DUNHAM, FLETCHER & COLEMAN,
WAYNE, DU PAGE CO., ILLINOIS.

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**VERMILLION HEREFORD CO.,
VERMILLION, KANSAS.**
Imported Alberta 2d blood. Boatman 56011 at head
of herd. A few excellent young bulls for sale.
E. E. WOODMAN, Vermillion, Kans.

**Weston Stamp Herd
REGISTERED..... HEREFORD CATTLE.**

Anxiety 4th females with Weston Stamp 9th at head
WM. ACKER, VERMILLION, KANSAS.

Registered Herefords.

THOS. EVANS, Breeder,
Hartford, Lyon County, Kansas.
One car load of bulls, 1 and 2 years old; one car
load of heifers, 1 and 2 years old; a few cows with
calves by side for sale.

CATTLE.

**H. R. LITTLE,
HOPE, DICKINSON CO., KANS.**

Breeds Only the Best,
Pure-Bred
SHORTHORN CATTLE

Herd numbers 185, headed by ROYAL
CROWN 122668, a pure Cruickshank,
assisted by 1-horn Lavender 143002.

FOR SALE JUST NOW—16 BULLS
of serviceable age, and 12 BULL
CALVES. Farm is 1 1/2 miles from
town. Can ship on Mo. Pac. R. I.,
or Santa Fe. Foundation stock select-
ed from 8 of the great herds of Ohio.

**SOLDIER CREEK HERDS OF
HEREFORDS, SHORTHORNS, POLLED SHORTHORNS**

SERVICE BULLS:
HEREFORDS—Columbus 1791364, Eivina's Archibald 75998, Jack Hayes 2d 119781, Jack Hayes 3d 124109.
SHORTHORNS—Jubilee Stamp 126017, Orange Dudding 149469. POLLED—Scotch Emperor 133646,
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Breeders of SELECT
HEREFORD CATTLE
Young Stock for Sale. Inspection or Correspondence Invited

**Scott & March, Breeders of Pure-bred
HEREFORDS.**

BELTON, CASS COUNTY, MISSOURI.
BULLS In Service: HESIOD 20th 66304, Imp. RODERICK 80155, MONITOR 58275,
EXPANSION 93662, FRISCOE 93674, FULTON ALAMO 11th 83731.
25 miles south of Kansas City on Frisco; Ft. Scott & Memphis; and K. C., P. & G. Railroads.

FOR SALE--Sixty Shorthorn Bulls
35 Registered, Balance High-grades and All Red.
P. S. DUNCAN, Berlin, Clinton County, Missouri

GLENDALE SHORTHORNS

Imp. Prince Lovely 155860 and Scotland's Charm 127264 in service. Ft teen young
serviceable bulls for sale. One extra good young Scotch bull, sired by Imp Royal
Favorite 140612, dam Imp Pavonia. Also 50 heifers and young cows mostly bred,
some with calves by side. Visitors always welcome. Long distance phone at farm.
C. F. Wolf & Son, Ottawa, Kansas.

SILVER CREEK SHORTHORNS.

The Scotch bull, Gwendoline's Prince 130913, in service. Also the imported
Scotch Missile bull, Aylesbury Duke. 100 head of the best Scotch, Bates, and
American families.
J. F. Stodder, Burden, Cowley Co., Kas.

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I now offer for sale, my great Cruickshank herd bull, Lafitte
119915, bred by W. A. Harris, got by Royal Knight 117203,
out of 16th Linwood Lavender Vol. 38. Address
C. W. TAYLOR, PEARL, DICKINSON COUNTY, KANSAS.

Closing Out Rome Park Poland-Chinas and Berkshires
Strictly choice show animals of Gilt Edged breeding. Established 20 years.
For Sale—100 sows and gilts bred and not bred. 20 snout yearlings and aged
boars. Summer and fall pigs of all ages. Reduced prices before sale.
T. A. HUBBARD, ROME, SUMNER COUNTY, KANSAS.

**Meadowbrook Herd of Pure-Bred
POLAND-CHINAS**

Herd headed by Ottawa Chief 28289. Choice young pigs, sired by Tecumseh H. and Sweepstakes, for
sale. Quality the best. Prices right. **J. R. KILLOUGH & SONS, R. R. No. 6, Ottawa, Kans.**



**THE WILLOWDALE
BERKSHIRES**

ROYAL BARON 58846, the Greatest Show
Boar in the World, at head of herd. Home of
the Winners. Young Stock of All Ages For
Sale.
G. G. Council,
WILLIAMSVILLE, ILL.

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IAMS' October, 1902, importation of plack Percherons, Belgians, and Coachers was the largest ever made west of the Missouri River. His stallions of big size, quality, finish and extremely low prices are propositions that will make you his buyer. If you can pay cash or give bankable note, you will sure buy stallions of Iams. Only man in the United States that imported only black or bay stallions. He has just imported

63--STALLIONS--63

Shipped to New York by fast boat, then by Fargo Express, special train from New York to St. Paul, Nebraska. Iams' big barns are full of big, black, ton stallions. He is just finishing a new barn 36x100 feet. Iams' horses are the sensation of the town. Visitors through his barn and say: "Never saw so many big black stallions together." "They are larger, bigger bone, more finish than ever before;" "But Iams is progressive;" "He buys them larger and better each year;" "He makes prices that makes the people buy his horses;" "Iams has a horse show every day, better than State fairs." He has on hand over

100-Black Percherons, Belgians and Coachers-100

2 to 6 years old, weight 1,600 to 2,500 lbs. More black Percherons, ton stallions, largest French horse show winners, more government approved and stamped stallions of any one importer in the West. Iams speaks French and German; needs no interpreter, no buyer, no salesman; no two to ten men as partners to share profits. His buyers get middlemen's profits and salaries. Iams buys direct from breeders. This with his twenty years' experience secures the best. All the above facts save his buyers \$500 to \$1,000 on a first-class stallion and you get a first-class horse, as only second rate stallions are peddled by sleek salesmen to be sold. Good ones sell themselves. It costs \$600 to \$800 to have a salesman form a company and sell a second rate stallion. Form your own companies. Go direct to Iams' barns. He will sell you a better stallion for \$1,000 and \$1,200 than others are selling at \$2,000 and \$4,000. Iams pays horse's freight and his buyer's fare. Good guarantees. Barns in town. Don't be a clam. Write for an eye opener and finest horse catalogue on earth.

FRANK IAMS,

St. Paul, Howard Co., Neb. On U.P. and B. & M. Rys.
References: St. Paul State Bank, First State Bank, Citizens' National Bank.



M. L. Ayres' Percherons

My October importation now in my Shenandoah Barns. 100 REGISTERED PERCHERONS on the farm; 75 STALLIONS. Most of them ton horses. Come and see them.
M. L. AYRES, SHENANDOAH, IOWA.

COMBINATION SALE

Percherons, Shorthorns, and Poland-Chinas.

J. W. & J. C. ROBISON, TOWANDA, KANSAS,

Will sell a draft of 50 head from their noted herds. Among the horses they will include most of their 1902 show herd, which won every first prize competed for at Missouri and Kansas State Fairs this year. Don't forget the date—February 3, 4, and 5, 1903, at Wichita, Kans. February 3, J. W. & J. C. Robison and Snyder Bros sell 50 Percherons and Shire stallions and mares. February 4, J. W. & J. C. Robison, Snyder Bros., and G. D. Stratton, sell 60 Shorthorns. February 5, Snyder Bros. sell 60 Poland-Chinas.



Draft Stallions.



Percherons Shires, and Belgians.

60 Head to Select From—ALL IMPORTED BY US AND GUARANTEED....

\$1,000 buys a good one from us this fall. It pays you to buy one now as you get him cheaper and keep out competition. Don't pay a big price for a horse, but come and see ours and get a good one for less money than a small importer can possibly sell for. Our stables are across the road east of the Burlington Depot
WATSON, WOODS BROS. & KELLY, Lincoln, Nebraska.



WILLEMORE STOCK FARM

IMPORTER AND BREEDER OF

German Hanoverian and Oldenburg Coach Horses

In order to make room for stallions, will sell 30 mares from 1 to 3 years old, at a bargain. Telephone 292.
Best Terms and Long Time Given Responsible Parties.
Take Washington Park Car to the Farm.

Stallions of all ages for sale. Both imported and home-bred. Prize-winners both in Europe and America.

Wm. EATON MOORE, Prop., SPRINGFIELD, ILL.



America's Leading Horse Importers

Ours were the Favorite Percherons at the recent International Live Stock Exposition, Chicago. Five of our importation won First. Another one of ours won Championship. Our stallions won 10 out of a possible 17 prizes. Our French Coach Stallions won Every First prize at the great Chicago Horse Show. With our Percherons and French Coach Stallions we won Every First at the Iowa State Fair, Kansas State Fair, Kansas City Horse Show, Central South Dakota State Fair, and Ohio State Fair including Grand Sweepstakes all draft breeds competing. In France our horses were equally successful in the show ring, fifty of them being prize-winners in the two leading shows.

We import more and therefore can sell cheaper than anybody else.
McLAUGHLIN BROS., COLUMBUS, OHIO.
Branches: Emmetsburg, Iowa; Kansas City, Mo.



Lincoln Importing Horse Co.

Percherons, Shires, German Coachers. Last importation received Oct. 14, 1902.

Write or wire. A. L. Sullivan, Mgr., Lincoln, Neb.

Kansas Land Company

Has some of the BEST propositions for small or large stock men, that is NOW before the public. Also GOOD ranches with one-half in cultivation to lease in the Cherokee Nation. Farm and City property for sale in the Gas and Oil belt. If you have \$500, or a few thousand, we can place you where you can make some money. For descriptions of Ranches or Farms, write us.

KANSAS LAND COMPANY, COFFEYVILLE, KANS.

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Anoka Flocks

Cotswolds and Ramboulllets. Foundation for flocks a specialty. Correspondence and inspection invited.
HEO. HARDING & SON, WAUKESHA, WIS.

McFADDEN BROS.,

WEST LIBERTY, IOWA,

Breeders of PRIZE-WINNING

Shropshire Sheep

Choice lot of rams and ewes—both Canadian and home bred—for sale. Can supply car lots. Write for our low prices.

George Allen,

IMPORTER AND BREEDER OF



SHROPSHIRE SHEEP, SHORTHORN CATTLE

For Sale—100 Rams and 100 Ewes. Greatest winner of any Shropshire breeder in America. Address ALLERTON, C. VERMILION CO., ILL.

COPELAND'S

Shorthorns

Forty head of Scotch-topped Young Marys, Floras, Harriets, Ianthas, and Britanias. Minister 2d 150171 at head of herd.

J. M. COPELAND,

Glasco, Cloud County, Kansas.

\$20 A WEEK straight salary and expenses to men with rig to introduce our Poultry Mixture in country; year's contract weekly pay. Address, with stamp, Menarch Mfg. Co., Box 1119, Springfield, Ill

SECOND ANNUAL GRAND THREE DAYS' COMBINATION SALE

AT RIVERSIDE SALE BARN, WICHITA, KANS., FEB. 3, 4, AND 5, 1903.

Reduced Rates on all Railroads.

FEBRUARY 3.

50 Head Registered Percheron and Shire

Stallions and Mares—Consigned by J. W. & J. C. Robison, Towanda, Kans.; Snyder Bros., Winfield, Kans.; Avery & Son, Wakefield, Kans. Many of the consignment were prize-winners at Missouri and Kansas State Fairs and other leading Western Fairs in 1902.

FEBRUARY 4.

60 Head of Registered Shorthorn Cattle

Consigned by J. W. & J. C. Robison, Towanda, Kans.; Snyder Bros., Winfield, Kans.; G. D. Stratton & Son, Walton, Kans.; Fred Cowley, Columbus, Kans.; Harrington Bros., Clearwater, Kans. All leading families represented.



FEBRUARY 5.

60 Head of Registered Poland-China Hogs

Consigned by Snyder Bros., Winfield, Kans. This draft will be selected from our herd, which now numbers more than 400 head.



Col. J. W. Sparks, Marshall, Mo.
Col. R. L. Harriman, Bunceon, Mo.
Col. L. F. Burger, Wellington, Kans.
Col. J. N. Harshberger, Lawrence, Kans.

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There will be a large offering of good, strong, thrifty Bulls ready for immediate service, which will afford the ranch man and small farmer, as well as the older breeders, a rare opportunity to purchase a single animal or car load. There will also be some of the finest young females that ever entered the sale ring.

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AT FARM, 4 MILES NORTHEAST OF
...MORROWVILLE, KANSAS, ON....

MONDAY, FEBRUARY 2, 1903.

40 HEAD OF SOWS AND 6 BOARS.

Choice Poland-China Sows and Gilts, bred. 20 sired by Onward Perfection, by Chief Perfection 2d, and bred to Sunshine Success, by Ideal Sunshine, the great eastern hog.

Twenty tops by good sires, out of a dozen good herds and bred to Onward Perfection and Sunshine Success. This breeding is at the top—nothing better.

There are some top-notchers in this offering, and you will not be disappointed when you see them. The sale will be held in a warm building. Everything will be done to make buyers comfortable. Hot coffee and lunch at 12. Our Catalogue is ready and will be mailed out to all who ask for it. It gives all information intending purchasers wish to know. Send bids to Auctioneers in my care and you will be treated fair.

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**Percheron and
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Stallions and Mares

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