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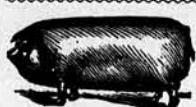
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Farm two miles east of Topeka on Sixth street road.

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and POLAND-CHINA SWINE.

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125 head in herd. Herd boars, King Hadley 16766 S. and Turley's Chief Tecumseh 2d 17978 S. Ten Choice Gilts sired by King Hadley 16766 S., the second prize boar in Missouri, and bred to Turley's Chief Tecumseh 2d 17978 S., at \$15 to \$20 each. Must have room for coming pig crop. J. M. TURLEY, Stotesbury, Vernon Co., Mo.

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## Agricultural Matters.

### EXPERIMENT STATIONS, THEIR WORK AND WORTH TO THE FARMERS.

Paper by President Thomas E. Will, of Kansas State Agricultural College, read before the annual meeting of Kansas State Board of Agriculture, January 13, 1898.

#### THE PRESSURE OF POPULATION—HOW FEED THE RACE?

A century ago a young collegian advanced a doctrine that took men's breath. The author was Malthus. The doctrine was that of the pressure of population against subsistence. Population, he argued, possessed the power to multiply in a geometrical ratio, while food could at best increase only in an arithmetical. Population therefore was bound to press steadily against subsistence, tending constantly to outrun it; and poverty, for this reason, was for the majority of the race as inevitable as death. If, in reply, the bountifulness of nature were pointed to, and the increasing yield accompanying scientific cultivation were dwelt upon, the answer was that all food supply must come from the soil, to which the law of diminishing returns applies; and that, therefore, however fertile the soil, or however skillful and economical the tillage, the time must inevitably come when doubling the labor, capital and skill applied to the land would fail to double the crop; if then population persisted in doubling, there could be but one result—death to the surplus for whom no food could be secured.

Later Malthus modified his doctrine, maintaining not that population must forever crowd subsistence, but only that it tended or threatened to do so. This conclusion the researches of Darwin and other naturalists have powerfully corroborated; and here, despite the tremendous onslaughts of optimistic critics, from William Godwin to Henry George, the doctrine stands to-day. True, adjustments in our economic machinery would for a time relieve the pressure; yet nevertheless population would still possess the power, did it but recklessly use it, to increase at a pace that would set at defiance all improvements, whether in government or in industry.

Population, however, does not with us merely possess the power to grow; it grows—in the United States, and in Kansas; and each forward step is hailed by us with acclamation. True (as partisans and critics of Malthus have too often failed to recognize), the rapid multiplication exists principally among the lower orders of animal life and the lower ranks of human society, while the more highly developed increase not recklessly, but intelligently, rationally, and moderately; yet there are always enough who rashly assume the responsibilities of parenthood to render the warnings of Malthus worthy of attention.

Moreover, man is the unsatisfied animal. The more he possesses, the more he desires. He demands not only increased quantity, but improved quality. The luxuries of yesterday are the comforts of to-day, and the necessities of to-morrow. Unless, then, we are prepared to join the school of Diogenes, and accept the gospel of going without, we may as well direct ourselves to the task of meeting the swelling tide of demand.

The question, now, resolves itself to the form in which it has faced all the children of men: How shall we feed the race, or so much at least thereof as we may feel responsible for?

#### MANKIND LEARNS BY EXPERIENCE.

Mankind has learned principally by experience; that is, by endless experimentation. It has not found the truth written down ready to its hand; it has been compelled to question nature, and to learn by trials and failures. In agriculture, especially, has experiment been necessary. Though the oldest and most fundamental of the arts, it has not yet been reduced to a science; that is, to a body of classified knowledge, so systematized as to reveal in satisfactory measure definite laws, and to admit of safe prevision. Not that much has not been learned that can be applied and utilized, but that the uncounted factors and the ungrasped relationships are so numerous that agriculture, despite the accumulated wisdom of ages, still seems in cases to be little better than a lottery. The farmer must contend with that proverbially fickle element, the climate; scant or excessive moisture, frost, hail, heat, cold, and parching winds, any of these may neutralize his efforts. He is impelled often to new soils, whose peculiarities must be learned before success can with reason be hoped for. Further, he deals constantly with that intangible, incom-

prehensible thing called life. Vegetable life, friendly and hostile, in the form of grain and weed; animal life, ranging from the patient beasts of burden in the farm yard to the infinitesimal bacteria that give life to his soil; and from the wolves and weasels that destroy his fowls to the insects that suck the substance from his wheat or girdle his apple trees, and to the germs that infect his cattle with consumption—all these demand his attention; and only by the slow accumulation of countless experiences do the laws governing their lives and activities emerge from the chaos of data.

#### EXPERIENCE A COSTLY SCHOOL.

But experience is a dear school—too dear, in fact, if each insists on learning only by his own experiences. The wise man prefers to study the experiences of others, and profit thereby. Further, division of labor, with its inestimable advantages and economies, may be applied to experimenting as well as to other lines of work. The progress of civilization is toward specialization; we have learned, little by little, to delegate law to the lawyers, medicine to the doctors, art to the artists, and production in its various branches to those specially fitted to carry it on. Similarly we have learned to delegate the work of experimenting to specialists possessing the requisite skill and the facilities for prosecuting such work to advantage. This is true in the various experimental sciences, and it is true in agriculture. Hence the experiment station, whose work it is to interrogate nature in regard to matters of special interest to farmers, and to make available her replies through the medium of the printing press.

#### PRIVATE VS. PUBLIC EXPERIMENTATION.

The work of an experiment station may be carried on by private individuals on their own account, and at their own expense. An example is furnished by the notable estate of Sir John Lawes at Rothamsted, England. But such men as Sir John Lawes are rare, and we might wait long, in this age of commercialism and scrambling for profit, if we depended upon them to do our experimenting for us. We have learned instead to help ourselves, and to lay upon the broad shoulders of society as a whole, personified by the government at Washington, the work of agricultural experimentation in America. For such a work a government such as ours possesses many advantages over an individual or corporation. It does not die or fail. It feels but slightly the pressure occasioned by the struggle for existence. Through the machinery of taxation, rightly utilized, it is able to draw upon the entire wealth of society. It is, therefore, unlike a private body, independent of considerations of profit; it can undertake works whose cost will far exceed the receipts therefrom, and can face with complacency losses that would bankrupt any individual or corporation. Further, it can engage in enterprises whose magnitude would appal an individual, and whose end may be years distant.

#### HISTORICAL SKETCH.

Experiment station work began with Lawes and Gilbert, in 1843, since which time continuous and inestimably valuable experiments have been conducted on the Rothamsted estate. In Germany the work began at Moeckern, under the influence of Liebig, in 1851; and Germany now is dotted over with stations, manned by masters possessing all the patience and thoroughness of the German. Other European countries have followed the example of England and Germany.

In America the work began in a small way in 1855, with the establishment of the first agricultural college; that, namely, of Michigan. The passing of the land-grant-colleges-act of July 2, 1862, gave an impulse to agricultural experimentation in America. In 1875 a regularly organized experiment station was established at Middletown, Conn. In the twelve years immediately following, stations were established in fourteen States. In 1887 came the Hatch act, appropriating \$15,000 per annum to each State for agricultural experimentation. Under the influence of this appropriation stations have been established in every State in the Union. Promptly following the Hatch act came the establishment in the Department of Agriculture at Washington of the Office of Experiment Stations—an office which serves to integrate and in a measure direct the work of the scattered stations, at the same time functioning as a clearing house of information for the various station workers. The lists of subjects published from time to time by the experiment station office, indicating investigations carried on by the sta-

## Sweetness and Light.

Put a pill in the pulpit if you want practical preaching for the physical man; then put the pill in the pillory if it does not practise what it preaches. There's a whole gospel in Ayer's Sugar Coated Pills; a "gospel of sweetness and light." People used to value their physic, as they did their religion,—by its bitterness. The more bitter the dose the better the doctor. We've got over that. We take "sugar in ours"—gospel or physic—now-a-days. It's possible to please and to purge at the same time. There may be power in a pleasant pill. That is the gospel of

## Ayer's Cathartic Pills.

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tions, reveals already a wide range and an active prosecution of the work begun, in a majority of cases, but ten years since.

#### IS EXPERIMENTAL WORK OF VALUE?

The question next arises, Is station work uniformly good? And the answer must be that this, like most other forms of work carried on over a wide field and by many individuals, ranges from good through indifferent to bad. Here, of all places, is needed a combination of common with uncommon sense. Time and funds may be wasted on experiments whose value can be but local at the best. Or such are experiments on the depth and frequency of plowing, and the time and thickness or thinness of planting—interesting, no doubt, but invalid save on the field where performed. "Other things" may be assumed to be "equal" when they are not, as when varieties of seed whose comparative values are under test are planted at different times, in different soils, and subject to different forms and degrees of tillage. Observations, again, may be careless, and records untrustworthy—the tabulated results, however formidable in appearance, but illustrating Col. Wright's aphorism that "Figures won't lie, but liars will figure."

Labor, again, may be lost by duplicating in one station the work of another. Yet duplications are in cases desirable. That dairying can succeed in Wisconsin we now know by experiments performed in that State. Experts may be confident that this industry will succeed equally well in Kansas; yet many farmers will be loth to believe until the matter has been tested on Kansas soil. Station men are agreed on the importance of increasing the protein content of food; yet our people must be made to feel the importance of this improvement, and this they cannot do until the truth is brought home to them through the work of their own station. The experiments of another station may have been left in an incomplete condition, or the results may be held uncertain; here repetition may increase confidence in the results.

#### SOME OBVIOUSLY VALUABLE EXPERIMENTS.

The value of some experiments should be obvious to the most skeptical. Such are the testing of cattle with tuberculin for tuberculosis—a test whose certainty was recently so completely demonstrated in the case of the Agricultural College herd; the discovery of the adaptability and value of alfalfa, Kafir corn, and the sorghums for Kansas growth and consumption; the proof of the possibility of condensing cheap, bulky products into relatively dear, light, and cheaply transportable ones (as in the case of Kansas corn and stover into butter for the Eastern markets); the ascertainment of methods whereby (as by subsoiling) the moisture capacity of the soil may be increased, and whereby further (by surface stirring at the proper times) a dust blanket may be formed, surface tension and evaporation checked, and the moisture left in the soil to supply the wants of the growing crop. One of the most interesting experiments performed at the Kansas station is that showing the possibility of soil-inoculation with micro-organisms by sprinkling upon the soil other soil which has previously been inoculated; or by pour-

ing upon the soil water that has been inoculated by contact with inoculated soils. After the germination of the plant the organisms attack its roots, forming thereon tubercles in which they make their homes and feed upon the plant; but the plant in turn feeds upon the nitrogen which these organisms extract from the air in the soil, nitrogen being one of the leading elements of plant food. Plants thus nourished thrive in a degree almost incredible, as shown by cuts in Prof. King's work on "The Soil." The value of such an experiment is less appreciated by Kansas farmers than by Eastern farmers, who pay at times as high as \$10 per acre for commercial fertilizers; yet by utilizing the services of these micro-organisms Kansas farmers may be enabled long to defer the day when expensive fertilizers will be needed by them.

#### QUICK AND SLOW RETURNS FROM EXPERIMENTS.

The comparative value of experiments yielding quick returns and of experiments which (like some of those at Rothamsted) can be completed only years hence, has been and still is a subject of earnest debate. The agricultural victim of 10-cent corn, 50-cent wheat, extortionate railroad rates and stock yards charges, high taxation, and debts which yield an annual unearned increment to the creditor, is tempted to demand quick returns from experiment work, and to manifest impatience with experiments whose results can be utilized only by posterity. His impatience is increased by the apparent failure at times of men of science, ensconced in public institutions, and regularly receiving fixed salaries that also grow in value with the fall in prices, to appreciate his needs and exert themselves in his behalf. It should in fact be conceded that some work of direct, practical, and early value might and should be inaugurated by experiment stations. On the other hand, it should also be recognized that work the most truly practical may need to go deepest into science and demand the most patience in awaiting results. In agricultural experimentation, as in mountain-climbing, the longest way round may in cases prove after all the most economical and practicable. Rome built not for the day, but for eternity, and Kansas will learn in time to follow her example; yet such building demands deep digging for sure foundations.

#### WORK AT THE KANSAS EXPERIMENT STATION.

As to the work of the Kansas station: Its history may be found largely in published bulletins; the writer, being irresponsible for the achievements or shortcomings of the past, prefers to speak only of the program laid out for the future, and to invite your comments and criticisms thereon.

On the farm it is proposed to concentrate, in the field work, on conservation of soil moisture and seed breeding; and in the feeding work, on more economical methods of feeding.

#### TO SAVE THE MOISTURE.

The work of saving the Kansas rains is regarded fundamental. Our soils are not poor. Chemical analysis shows the surface foot of average Kansas soil, not to mention the rich subsoil, to contain sufficient plant food to sustain from

(Continued on page 6.)



## The Stock Interest.

### THOROUGHbred STOCK SALES.

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

FEBRUARY 2—W. H. Wren, Poland-China brood sows, Marion, Kas.

FEBRUARY 6—Clifton George, Poland-Chinas, Lathrop, Mo.

FEBRUARY 17—C. P. Shelton, Poland-Chinas, Paola, Kas.

FEBRUARY 25—Jos. R. Young, J. D. White, S. M. Smook and J. M. Turley, Poland-Chinas, Nevada, Mo.

FEBRUARY 26—Jno. Brazelton & Sons, Poland-China brood sows, Wathens, Kas.

MARCH 2—C. S. Cross, Herefords, Emporia, Kas.

MARCH 8—T. J. McCreary, Aberdeen-Angus cattle, South Omaha, Neb.

MARCH 16—Jas. A. Funkhouser, Gudgell & Simpson, Herefords, Kansas City, Mo.

MARCH 17—W. T. Clay-H. C. Duncan, Short-horns, Kansas City, Mo.

APRIL 15—T. F. B. Sotham, Herefords, Chillicothe, Mo.

APRIL 15—Scott & March, Herefords, Belton, Cass Co., Mo.

### WHY KANSAS SHOULD EXCEL IN STOCK-GROWING.

Paper by Secretary F. D. Coburn, read before the annual meeting of Kansas Improved Stock Breeders' Association, January 10, 1898.

A friend in western Kansas, who believes the State has not been and is not being entirely absorbed by the chinch bug, the octopus and the great red dragon, sends me this card, the back of which he utilizes like a loyal citizen for making a few cheerful remarks praiseful of the land of his adoption and the people who live therein. Among these remarks is the statement that "if you will look on any map of the United States you will find that Kansas is the bull's-eye." After thirty-one years of residence, experience and observation in Kansas and among her people, I for one am perfectly willing to concede the correctness of his proposition. It by no means takes a bull's-eye, however, to discover that a large measure of the future wealth and greatness of Kansas must come by and through her meat products—meats evolved from the grasses and grains which her soils yield in a maximum of abundance, for less tickling than any others of which agriculturists, geologists and other wise men possess knowledge.

We have the highest authority for the statement that "All flesh is grass, and the goodliness thereof is as the flower of the field." Nature and men, co-operating, have made Kansas a marvelous blending of pasture and corn field—the domain of grasses. In luxuriance, profusion, nutritious qualities, and economy of production, hers are nowhere surpassed; this, whether applied to the corn, blue-stem, timothy, clovers and blue grass of her eastern half, or sorghums, millets, alfalfa and unpretentious grammas of the fertile plains and higher altitudes beyond. The prince of all these is Indian corn; from it and its blood relations are evolved a hundred commodities that the world hungers for with an unappeasable appetite, which only grows greater by feeding. Commodities that when ready for the buyers do not have to be bartered at the cross-roads for saleratus, kerosene and "horse-shoe" plug, but are as staple in the markets of civilization as are pounds sterling or California bullion, always good for liberal advances on consignments.

The foundation of the profitable animal is pasture. Where else are better pastures than are found in the 52,000,000 of acres called Kansas? Where else can a greater or more continuous variety be found, available from the opening of April to the close of March? If the stockman of Jefferson or Franklin county has his blue grass, no less has the grazer of Haskell or Sheridan his gramma, and either stockman will make affidavit any day in the year that his is the best that ever grew. If the stockman of eastern Kansas boasts of or becomes rich by his generous growths of clover, millet and blue-stem for hay, his competitor from the less humid "coyote" counties will demonstrate that five to ten tons of better Kaffir corn per acre or three or four cuttings of alfalfa in a season make his end of the State about the only part of it in which a man who is in the business for real profit or wants to raise stock costing almost nothing can afford to locate. If the meat-maker in the eastern half of the State is sure of himself because corn grows in such abundance and is of such unquestioned value as furnishing the streak of fat, likewise is the gentleman from the short grass country self-contained by his ability to produce thirty, forty, fifty and sometimes more bushels of sorghum seed per acre, which our experiment station has demonstrated to be of about the same fattening value, pound for pound, in beef-making, as Indian corn. If for beef-making, why not for pork-making,

poultry-making, mutton-making, milk-making?

If wholesome water is of value, have not the geological and hydrographic surveys shown that the State is well-nigh built on or over vast sheets of nearly crystal water, and are not the tireless winds, full of self-renewing energy, available for its drawing wherever and whenever we will?

Given, abundant grass, a variety of grains, low-priced lands, and a mild climate, it is easily demonstrated that the region having these can produce beef at an advantage nowhere surpassed. We do it.

With these and her dry soil Kansas should be the sheepman's paradise, and some day will be. One stumbling block which has thus far been and still is in the way of such a consummation is that we have too many coyotes, and waste too much time in dog culture. Sheep and the average Kansas dog do, to be sure, frequently lie down together in peace, but very rarely except when the sheep is in pieces, inside the dog, and the only "whole thing" is the dog outside the sheep. This, of course, is fun for the dog. I have made a lifetime study of this quadruped and am fully persuaded that his sphere of usefulness is not in animal husbandry nor agriculture, but in pomology. The same as to the coyote. If planted early (and it is never too early, nor too late), half a dog beneath a pear tree will aid its growth and bearing prodigiously; and the hocks give no record of such a pear tree having blight, or anything the matter with its bark. The wolf makes superior fertilizer, and a dog is worth even much more. There isn't a quarter section farm in Kansas that not only would be the better and cleaner thereby, but more profitable, if it supported from fifty to 200 good sheep. Their owner would need to understand "finance" very thoroughly if he was ever able to discover that their keep and increase cost him anything.

As to our possibilities in swine-growing, suggestion is found in the records of the Columbian Exposition. For that wonderful world's show all Poland-Chinadom was raked for the best that experience, skill, the secrets of their originators, and money, sugar and sweet oil could produce. Wonders and phenomena were there in force from Ohio, Indiana, Illinois, Iowa, and all the benefits of combination, acquaintance and nearness to home were invoked to beat the world. They had it beaten until the time came for R. S. Cook and Willis Gresham to drive out first one and then another of their Kansas pigs. Then a sneering indifference gave way to lively attention, then to deep concern; defeat soon followed defeat in quick succession for their supposed invincibles from the valleys of the Miami, the Wabash and the Sangamon; panic and rout set in and after that it was devil take the hindmost, as the merciless juggernaut of the Jayhawkers rode them down. To this day when two or more of those Buckeyes and Hoosiers or Suckers are gathered together they will be found trying to explain to each other about that Kansas cyclone of 1893, with which they got tangled up in Chicago and which they had previously had no idea was loaded.

In every respect Kansas should be the ideal region for raising horses of size, soundness, speed and bottom. This is a branch of the stock business which, except in a limited way, I regard as not having been persistently and continuously developed as its merits would have justified. Yet even under such circumstances some very noted and notable specimens have had a Kansas origin. For instance, in speed horses, the wonder and well-nigh world-beater, John R. Gentry, came from Sedgewick county; that remarkable flyer, Joe Young, made famous by Charles E. Westbrook, was a Marion county development; the whirlwind, Joe Patchen, sprung from Marion county, and there are others.

In no department of stock husbandry are we likely to have greater length of reach than in the cultivation of the cow and all she is capable of in enhancing the comfort, health, wealth and happiness of mankind, from the cradle to second childhood.

The many well-to-do communities in this and other lands where dairying is a leading industry indisputably prove that, wisely conducted, it has yielded a continuously higher prosperity than almost any other line of farming. It not only, as a rule, gives better and more frequent returns in cash, but it enables the farmer to maintain and even to increase the fertility of his land. It is an industry that, followed up to its full possibilities, will mean millions of dollars added to the State's assets through the production of high-class staples, for

which our capacity is practically immeasurable.

As I have stated, all these are founded on grass. We possess Grasses' empire; we should not fail to appreciate the opportunities—not in the remote distance, not "over the range," but right here, stretching at our feet and beckoning us to grasp them, not alone by the forelock as they are said to be grasped elsewhere, but by the hindlock, fetlock, and lock, every lock.

Nowhere else in this broad central basin of southern north America, filled and the silts of the centuries, on these great expanses of smiling valley and fertile plain, "Two thousand miles deep and reaching to the stars," do the grasses grow in such variety and unfailing opulence. Here are to be produced the foods which make men strong in body and mind, full panoplied physically and mentally to dare and to achieve; to strike down thrones and rear republics; make conquest of continents and plant the Cross in darkest heathendom. For these the coming civilizations will not look to Egypt and the Nile of fabled fertility, nor to some region famed in song and story as flowing with milk and honey, but here, to the core of this continent.

To these, the gardens of the Desert, these The unshorn fields, boundless and beautiful,

That stretch  
In airy undulations, for away,  
As if the ocean, in his gentlest swell,  
Stood still, with all his rounded billows  
fixed,  
And motionless forever.

### The Real Point of Interest.

By Alvin H. Sanders, Editor Breeder's Gazette.

We cannot all cross the Atlantic to study the white-faced herds of historic Herefordshire, upon their own rich West-of-England pastures, but through the enterprise and liberality of the proprietor of Sunny Slope, American breeders will on March 2 and 3 have an opportunity of examining, with a view towards making selections for their own use, a large and well-chosen consignment of young cattle from such famous old-world stocks as those of A. B. Turner, John Price, Stephen Robinson, Ed. Yield, Messrs. Tudge, Heygate, Morris, J. W. Smith, Haywood, Bridgford, et al. Many will attend the sale with the idea that, by comparing the imported with the home-bred stock, they will be able to settle in their own minds definitely the question as to whether or not England has Herefords of any greater value than our home-grown specimens; and possibly a few words upon this general proposition may assist somewhat in arriving at a correct comparative estimate.

After some study of the British breeds on their native soil, I have been forced to the conclusion that America will never be able to declare, with due regard to her own best interests, her absolute independence of foreign herds and flocks in the matter of breeding stock belonging to types specially designed for the block. I am aware that some who fall to approach the subject in an unprejudiced way will enter denial and others will question the patriotism (?) of any American making such an assertion; but the student of breeding problems regards not geographical divisions nor political distinctions in seeking for truth. It is indisputable that we are just now breeding as good Herefords in this country as in England. Our best show cattle are probably the equals of the royal winners; but we must remember that we are not yet far enough away from Anxiety, the Lord Wiltons, The Grove 3d, Tregrehan, Archibald, Sir Richard 2d, and the rest to declare with any degree of assurance that we have no further need to resort to the fountain head. In brief, to come to the gist of the matter at once, the full effect of the American climate and of American feed upon the form and character of the Hereford has not yet been demonstrated. That climatic conditions and character of foods exercises a powerful ultimate influence upon all animal form is an axiom with scientists; and the experience of practical breeders bears out the teaching of Darwin, Huxley and Spencer. That the Hereford should constitute an exception to the rule does not stand to reason. We have but to contrast the girls of the Anglo-Saxons and the American aborigines or call to mind the conventional caricatures of "John Bull" and "Brother Jonathan" to grasp the idea in its entirety. Animals are the products of their environment. The typical native American free from recent admixture of foreign blood is lean and of the distinctly nervous temperament. Your true Briton is brawny, full-blooded, lymphatic and blessed with assimilative power. The same forces

that mold form in man, affect all animal life. To apply the test of actual experience to the question in hand, we may in studying the Hereford proposition, profit by some Short-horn history. When the "white-faces" began their assault upon Short-horn power in the Central West, some twenty years ago, the Short-horn had been bred in this country for generations. It soon became apparent, however, that the home-bred stock could not successfully cope with the burly-bodied invaders from Herefordshire, and it was only by immediate and persistent resort to old-country herds that the march of the imported Herefords and Angus could be impeded. By free use of fresh British blood Short-horn breeders were able to give their opponents at the shows a Roland for every Oliver—Duke of Richmond for an Anxiety, a young Abbottsburn for an Ancient Briton.

How long even the rugged Hereford can withstand our terrific extremes of heat and cold, our drought and blizzards, our dry feed, corn diet and insect pests, without beginning to lose in sappiness and that plethoric habit of body so desirable in a butcher's beast, is a question to be tested by the future. We know that England, thanks to the gulf stream, is a paradise for her herbivorous animals. We know that the climate of Herefordshire, the succulent grasses of the Wye and Severn, the cooling influence of a free use of roots in the feeding ration, and the skill of experienced breeders had given us a race of breeding cattle second to none this world has ever seen. Every condition there is favorable to the production and maintenance of a type. We know that we have in America the feeding ground par excellence of the world—cheap grass and oceans of cheap corn—but we must realize that the underlying conditions are working silently but none the less surely in the direction of ultimate physical deterioration. Careful handling can of course ward off any special loss of breed type for some time. But any consideration of the question of how to sustain Hereford power in the West, that fails to take into the calculation this vital element of modification of type through the operation of feed and climate, may lead to a false conclusion. Occasional recourse to Herefordshire herds is one of the natural safeguards, and if those who attend this sale will bear this fact in mind they will be able to form a much more accurate estimate of the probable value of these imported cattle in our breeding herds than can be formed by a mere comparison of individual animals; and upon this latter point let us say a word.

The imported yearlings in this sale have been landed in the West in good condition. They may therefore be fairly compared with animals of like age bred upon the farm. The bull calves from Herefordshire, however, with all their rich breeding, fine markings and good promise, are entitled to a year's good keep before we enter up our judgment. They have been drawn away from their dams, pitched and tossed by Atlantic "rollers" over 3,000 miles of ocean, run through quarantine, railroaded 1,500 miles and put on sale sixty days after emerging from this severe ordeal. While they have been undergoing this, a grand yard full of Wild Tom, Archibald and Climax calves at Sunny Slope have wanted little from birth that could contribute to their proper growth. As a matter of fact, Mr. Cross has dipped deep into the very cream of all the best young cattle produced at Sunny Slope during the past three years; reserving nothing for himself but what has been required to fill up the show herd. Hence he presents at this sale, 100 head of picked home-bred cattle that have never left the farm upon which they were reared. They have had every advantage of the imported cattle in point of surroundings calculated to bring them into this sale in superior condition. The thoughtful breeder who will take this fact into consideration and who will note how quickly the pedigrees of all these home-bred Herefords run to cows and bulls from over the sea will not fail to grasp the fact that these are matters of deeper import as affecting real values in this sale, than mere present conditions. In other words, if asked to point out where the bargains are most likely to "crop out" in this important sale, I answer beyond all doubt among the imported bull calves. That a year's feeding will develop some real show bulls among them, may be safely predicted. We have a lively recollection of some similar importations of Scotch-bred Short-horn calves, subjected to similar treatment. Gay Monarch and Baron Cruickshank—bulls of international fame now in Short-horn circles—would have attracted little attention soon after landing. Mr. Cross is giving



buyers every advantage in offering these valuable calves at this time. Some one will "strike it rich" on some of these as sure as grass grows and water flows. On that I stake my judgment as an observer of the development of well-bred imported stock of the beef breeds. American feed and English blood is the combination that is likely to advance Hereford standards still higher during the next ten years than in the past.

### Sheep--Lambing Time.

Editor Kansas Farmer:—One of your subscribers asks how to get rid of dock. The regulation farm press writer will at once give a detailed description of the manner of killing this weed by the use of salt. You have to purchase a sharp hoe, spend your time going over the fields cutting down the dock, and unless you cut below the crown you will do no good; then you must sprinkle on a little salt from the barrel you have had to buy. All this sounds well and we will say, "Pass the salt."

Now, every farm has more or less dock, and many other kinds of evil weeds, especially cockle-burs and sunflowers, and there is only one rational way to keep these pests in check, and that is to have the farm all fenced off into separate fields and practice a regular rotation of crops, using sheep to glean after the mower and reaper, and at all times that they can be used without doing damage to a crop. They will destroy all three of the above-named weeds, and many others, and turn them into choice mutton that is now worth \$5.40 to \$5.80 per 100 pounds in the market. Yet there are only a few sheep kept in Kansas. There are many more dogs kept than sheep.

Talk about hard times and farm economy! What a fool a man is to try to kill weeds with a hoe, and at a cash cost of time, labor and money, when the very weeds can be turned into cash by the use of sheep, and while the sheep are eating the weeds, they will leave as much fertilizer on the ground as they take away.

Another one of your subscribers wants to know why there is not more written in the Farmer about sheep. There are 222,703 sheep in Kansas and 171,344 dogs, and the dogs killed 666 sheep last year. Now here are eighty dogs to herd every 100 sheep. Why don't our friend ask for some articles about dogs?

The farmers of Kansas ought to be heartily ashamed of themselves. They will put a large capital into "feeders," they will be forced to buy a large number of hogs, that are liable to die with the cholera, to follow the "feeders," in order to make any profit out of the "feeders." What a lot of trouble and expense for nothing. It seems to me as if a man was wild to run such a risk and go to so much trouble. The same man could feed sheep, and not have to buy any hogs to follow them. In fact, a hog would starve on what passed through 100 sheep. Then, again, it is a fact that 100 pounds of feed will put on more mutton than it will beef, and there is the growth of wool that is clear gain, while 100 pounds of choice mutton will bring more money than 100 pounds of choice beef.

But "What is the matter with Kansas?" Will White ought to say "Dogs." But it is the people that permit such a state of affairs. We have a woolen mill in Kansas, yet they have to send out of the State for their wool. Now, every sheepman in Kansas should endeavor to sell his wool in Kansas, to be made up in Kansas, and should wear pants made in Kansas out of Kansas wool, and I suggest that the figure of an enormous sunflower be worked into the part most exposed to wear and tear, by the cloth-makers.

My flock of forty breeding ewes commenced to drop lambs on January 1, and are still at it. They are not having so many pairs of twins as they did last year, but the weather has been so fine that the lambs have done very well. Every Saturday all lambs born that week are marked, docked and castrated and turned out of the "nursery" into the lamb pen, where they stay another week, then they are turned out together with their mothers, with the sheep that have not yet lambed and the ten ewe (yearling) lambs. Last year I had one ram lamb dropped and he died when he was only a few days old. This is the only case that I observed. I had to be sick, that I did not eat and found a kernel of the corn was swelled very much. After I had removed the corn I made of water and

hours she began to get better and was able to eat all right and is now fully recovered. Last year I noticed one ewe did not drink any for two months before she dropped a lamb, and she gave no milk. This year she has drank heartily, has just lambed and has a good flow of milk. Therefore, if you have a ewe that won't drink well, pen her up and feed her salted food and give her lots of swill made of shorts in water and she will give plenty of milk. Eating snow and not drinking heartily is a fruitful cause of lack of milk. Drinking cold water is also very injurious. They should have warm well water and all they can drink.

There is more money made in attending to the newly-born lamb for the first day of his life than at any other time, and \$20 to \$40 can easily be lost at this time by carelessness. Therefore, do not get discouraged, but work, work, day and night, at this time, as you are simply just coining money. Last year I lost enough lambs, because I was sick a week, that I could have saved had I been well, to have brought some \$45 in the market in August, and on grass alone. The watchword at lambing time should be "watch."

Morantown, Kas. C. J. NORTON.

### The Bacon Hog Again.

The National Stockman and Farmer gets to the joint of the bacon hog in the following happy manner:

"The discussion of the bacon hog has waxed exceeding warm of late. Secretary Wilson urges our farmers to produce the aforesaid hog and recommends the Tamworth. Prof. Thomas Shaw, another authority on live stock, endorses both the Secretary and his hog. But now comes Mr. Sanders Spencer, the recognized English authority on swine, and says the Tamworth is a very inferior hog; that he doesn't want any Tamworths in his'n, and the Danes, who produce the highest-priced bacon in the world, don't want them either. Mr. Spencer is sure that the white breeds (Yorkshires) are the only genuine bacon hogs—and he breeds them to sell and ought to know what he is talking about. Nor are our hustling American breeders unheard in this argument. Each claims that his favorite breed will make the best bacon and make it the cheapest—if they are only fed for it. Feed me for lard and you get lard, feed me for lean meat and you get lean, is what the versatile American hog promises—through the mouths of his breeders. The packers are not saying much, neither are they paying much extra for bacon hogs. The plain, every-day pork-maker is not saying much either, nor is he giving away his lard-bred brood sows or swapping them for trotting-bred hogs. He is going to 'lay low' till the question is cleared up a little. He is counting the cost of production as well as looking at the selling price. He is figuring profits and not prices, and he will climb down on the profit side of the fence, no matter how nice it looks on the other side."

### American Cheviot Sheep Breeders' Association.

The following are the officers of the American Cheviot Sheep Breeders' Association for 1898, chosen at the annual meeting, held at Cooperstown, N. Y., December 22-23, 1897: President, John Laidler, Garrattsville; Vice Presidents, Ira S. Jarvis, Hartwick Seminary; N. B. Harrington, Hartwick; T. N. Curry, Hartwick; T. M. Patterson, Patterson Mills, Pa.; Hon. R. H. Pope, Cookshire, Quebec, Canada; Secretary, R. L. Davidson, Cooperstown; Treasurer, Geo. I. Wilber, Oneonta; Directors, to serve one year, George Hall, Middlefield Centre; S. T. Telfer, Burlington; Directors, to serve two years, Ira J. Hiller, Four Towns, Mich.; H. E. Riggle, Houstonville, Pa.; Directors, to serve three years, Edward Severin Clark, Cooperstown; George Lough, Hartwick; Inspector, Thomas Laidler, Oaksville.

Read Ayer's Almanac, which your druggist will gladly hand you, and note the wonderful cures of rheumatism, catarrh, scrofula, dyspepsia, eczema, debility, humors and sores by the use of Ayer's Sarsaparilla, the only Sarsaparilla admitted at the World's Fair.

### Excursions to California

Every day in the year via Santa Fe Route. Choice of luxurious Pullman palace sleepers or comfortable and modern Pullman tourist sleepers. Apply to agent A. T. & S. F. Ry. for literature and particulars of service. Remember this is a daily service.

## In the Dairy.

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

### PROGRAM

For the Sixth Annual Convention of the National Creamery Buttermakers' Association, at Topeka, Kas., February 21-26, 1898.

MONDAY, FEBRUARY 21.

Meeting of the delegates and assigning their places and final arrangement of exhibit hall.

TUESDAY, FEBRUARY 22.

2:30 p. m.

Grand parade by the delegates, meeting the official train and escorting the officers and delegates to the hall.

Call to order.

Music.

Invocation.

Address of welcome on behalf of the State, Governor J. W. Leedy.

Address of welcome on behalf of the city, Mayor C. A. Fellows.

Address of welcome in behalf of the Kansas State agricultural interests, Hon. F. D. Coburn.

Address of welcome in behalf of the creameries, C. H. Pattison.

Response, H. J. Nietert, Walker, Iowa.

President's address, Irwin Paul.

Secretary and Treasurer's report.

Appointing of committees.

Evening session, 7:30 p. m.

Song, J. G. Lumbard, Omaha, Neb.

Address, W. K. Boardman, Nevada, Iowa.

"Influences of Occupation," F. S. Blaney, Abilene, Kas.

"Feeding and Development of the Dairy Cow" (illustrated by stereopticon views), Prof. Clinton D. Smith, Michigan.

Music.

WEDNESDAY, FEBRUARY 23.

BUTTERMAKERS' DAY.

Afternoon session 1:30 p. m.

"Maintaining a Harmonious Co-operation Between Buttermaker and Patrons," M. W. Ashby, Hazelton, Iowa.

"State Aid for Dairying," Maj. Henry E. Alvord, Washington, D. C.

"The Use of Gasoline Engines as Power for Creameries and Skimming Stations," Chas. Harding, Norfolk, Neb.

Examination of Buttermakers' class.

7:30 p. m.

Entertainment furnished by Topeka Commercial Club.

THURSDAY, FEBRUARY 24.

PATRONS' DAY.

Morning session, 10:30 a. m.

"Selecting the Dairy Cow," Prof. T. L. Haecker, St. Anthony's Park, Minn. (This lecture will be illustrated by five or ten living types of cows.)

Afternoon session, 1:30 p. m.

"The Value of Skim-milk for Calf-Raising," Prof. Chas. F. Curtis, Ames, Iowa.

"The Production of Milk," Prof. H. M. Cottrell, Manhattan, Kas.

"Kansas and Its Possibilities as a Dairy State," J. Dixon Avery, Chicago, Ill.

"Pasteurizing for Butter-making," H. E. Schuknecht, Albert Lea, Minn.

"Rural Institutes," H. M. Brandt, Canton, Kas.

Evening session, 7:30 p. m.

Music.

"Eastern Markets and Western Butter," J. J. MacDonald, Philadelphia, Pa.

"The Dairy Farmer and His Cow," ex-Governor W. D. Hoard, Fort Atkinson, Wis.

Music.

Election of officers.

FRIDAY, FEBRUARY 25.

11 a. m.

Sale of butter.

Afternoon session, 1:30 p. m.

Addresses by the butter judges.

"The Creamery Industry in Oklahoma," P. E. Nissley, El Reno, Okla.

"The Creamery Industry in South Dakota," M. Myers, Huron, S. D.

"How Can We Interest Patrons More in the Care of Cows and Milk?" G. L. Hubbell, Waukon, Iowa.

Miscellaneous business.

Adjournment.

PRIZES.

For the best package of separator butter, a gold medal valued at \$100 and cash \$50.

For the best package of gathered cream butter, a gold medal valued at \$50; cash, \$25.

For the second best package of sep-

## CREAM SEPARATORS.

De Laval "Alpha" and "Baby" Separators.

First—Best—Cheapest. All Styles—Sizes.

Prices, \$50.00 to \$800.00.

Save \$10 per cow per year. Send for catalogue.

THE DE LAVAL SEPARATOR CO.,

Randolph and Canal Sts., 74 Cortlandt Street, CHICAGO. NEW YORK.

arator butter, a silver medal valued at \$30; cash, \$15.

For the second best package gathered cream butter a silver medal valued at \$20; cash, \$10.

In addition to the above valuable prizes, the sum of \$3,000 will be divided pro rata among all scoring 95 or over. The packages securing medals will not share in the pro rata premium.

The association will also give a diploma of merit, which will be a work of art, to the exhibitors whose butter scores 90 or over.

Besides the above prizes on butter, the association offers to the highest score obtained in the butter-makers' contest a cash prize of \$15; second best, \$10.

To the butter-makers entering the butter-makers' class: To the one having the highest percentage of scores a cash prize of \$12.50 will be given; to the second best \$7.50, and the third \$5.

To the best appearing delegation in the parade the association will give a premium of \$35 cash, and to the second best appearing delegation \$15 cash.

Under the rules no side or special premiums are accepted by the association.

### EXPLANATION OF SPECIAL FEATURES.

First.—Butter-makers' Contest—A contest between six butter-makers will be in progress during the forenoons of the 23d, 24th and 25th. Each butter-maker is to make one churning. Two each day. The cream will be delivered to them slightly soured. They are then expected to ripen it and prepare it for churning, churn it, work it and pack it. Churnings will be of about 200 pounds of butter each. The butter-makers are to report at the working creamery, which will be in Exhibit hall, on the afternoon of each day, to have their places assigned them and to take charge of the cream on the afternoon prior to the day of churning. Maj. Henry E. Alvord will be judge of this contest.

Second.—Butter-makers' Class—This will consist of a class of twelve to fifteen butter-makers, who will be examined on question relating to every-day experiences in the creamery. These examinations will be orally conducted by a competent examiner, and the merits or demerits of the questions reported upon by a committee of three. Said committee to be composed of the following well-known gentlemen: Prof. G. L. McKay, of Iowa; Prof. T. L. Haecker, of Minnesota, and Prof. H. M. Cottrell, of Kansas. The examiner has not yet been selected, but great care will be exercised in selecting one who will be impartial and capable of making a satisfactory and thorough examination. This feature of the program is expected to consume about two hours, and while it is a new departure and the best methods of conducting it may only be found after an examination is made, we hope to so arrange it as to be quite interesting and make it a very instructive feature of our program.

Applications for the above contest and class are now open. We will be pleased to hear from as many butter-makers as feel interested in either of the above special features, and we will assign places as long as they are open, reserving the right, however, to accept or reject any or all applications.

### RAILROAD RATES.

A one-fare rate for the round trip has been made by all railroads. We would suggest, however, that you inquire early from your railroad agent whether he has the instructions, so that in the event that he does not have that he can get them and apply the rate.

THE ASSOCIATION HEADQUARTERS will be at the Hotel Throop, corner Kansas avenue and Fourth street.

### THE EXHIBIT HALL

is on the first floor of Hamilton hall, and the meetings will be held on the second floor of said hall, No. 520 Quincy street.

### Increase of Licenses.

The beginning of the new year finds forty-two more retailers in the Chicago internal revenue district engaged in the business of selling oleomargarine than were in it on January 1, 1897.

During December the number of licenses issued was 164 against 121 dur-



ing the corresponding month in 1896. On January 1, last year, 843 retailers were selling oleomargarine. On January 1 this year the total was 885.

The increase, as stated in Chicago Produce, last month is due to the fact that the decision expected in the anti-color litigation is still delayed. While matters have been in such shape that the dairy interests could do nothing towards enforcing the law, the oleomargarine interests have carried on their campaign of promises and false claims with the result as shown in the figures above given.

#### Experiment Stations, Their Work and Worth to the Farmers.

(Continued from page 3.)

500 to 2,000 maximum crops. Given water, crops grow abundantly in all parts of the State. Without it, Eden were a desert. Nor do the heavens withhold their rains from our State. Scientific observations show our rainfall to be sufficient, if husbanded. We prodigally suffer it to run away, or to rise by evaporation. By experimentation we hope to ascertain methods of increasing the moisture-holding power of the soil, and to diminish the loss by evaporation.

#### PLANT BREEDING.

Kansas crops suffer not only from drought, but often from poor seed. Corn planted sixteen inches apart in the row, and in rows three and one-half feet apart, each stalk bearing one good ear, would yield 118 bushels per acre. In 1896, Kansas' banner corn year, the yield of the State was twenty-seven bushels per acre, or less than a quarter of a full crop. The average ear was a four-ounce nubbin. A fifty-bushel crop means a seven-ounce nubbin as an average ear. Why should not each stalk, rather than the exceptional stalk, annually produce a good ear? Because, in part, we use in-an-in-bred, weak, or impotent seed. Yet the labor cost of raising a poor crop from poor seed equals the labor cost of raising a good crop from good seed. What is true of corn is true of other farm crops. Our station now plans to improve seed by breeding, in exactly the same way in which pigeons, chickens, hogs, cattle and horses have been improved.

Again, the most successful feeding demands a combination of carbo-hydrates, or fat-producing foods, with protein, or muscle-producing. Many Kansas crops are rich in carbo-hydrates, but poor in protein. The protein foods, as the meals from cottonseed, linseed, or gluten, may be purchased, but are dear. By breeding, French experimenters increased the percentage of sugar in the sugar beet from 3 to 16. Similarly, by breeding we believe it possible to increase the protein content of our common crops; and in this line also we propose to work.

#### ECONOMY IN FEEDING.

As to feeding: The Storrs Experiment Station, of Connecticut, was able to suggest economies in feeding whereby Connecticut farmers saved from 7 to 11 cents per day per animal fed, with no sacrifice in results attained. If the Kansas Station can show Kansas farmers how to save one-third of a cent per day per beef animal fed, the total saving per year will amount to over \$2,000,000. If 10 cents per head can be saved in the cost of fattening each hog, the total saving will amount to \$200,000 per annum. Our station will attempt to discover the best methods of feeding and the best feeds for beef and dairy animals and swine. A special study will be made of the best methods of feeding our drought-resisting crops—sorghum, alfalfa, Kaffir corn and soy beans. Our station has proved Kaffir corn equal in value to corn for fattening cattle and hogs. It has also proved the Kaffir corn yield to exceed the corn yield, other things equal, by one-third. Thus we see how the capacity of our farms for beef and pork production can be increased by 33 per cent.; it remains for our station to show how this gain can be further increased by better methods of feeding.

#### DAIRYING.

Civilized man demands butter. Eastern farmers, handicapped by a severe climate, using poorer yet dearer lands than ours, and paying for expensive fertilizers, can buy our feeds, pay freight on the same for 1,000 miles, pay a much higher charge than we for transporting their finished product to market, and yet make money on butter. Why cannot we? Enjoying advantages over our Eastern brethren in climate, quality and cheapness of soils, independence of commercial fertilizers, proximity and abundance of superior foods, and low cost of marketing our products, the answer is, We can and ought to make money on butter. The Kansas cow in 1890 produced, according to Secretary Coburn's

reports, \$6.07; in 1896, \$9.65. She should produce at least \$30 per year; and with the skillful management practiced in the East she may be made to produce from \$45 to \$90 per year. The Kansas station plans to study the problem how to exploit more successfully the Kansas cow.

#### BALANCED RATIONS IN FEEDING.

In close co-operation with the work of the agricultural department will be the work of the chemical department. Our young farmers ask how to make a balanced ration, including, say, sorghum hay, a staple food in parts of western Kansas. No data exist whereby we may answer them. No good work on the digestibility of foods from drought-resisting plants has been done west of the Mississippi river. Our chemist will endeavor to ascertain the digestibility of sorghum, and similarly of other food plants, native and introduced.

#### THE SUGAR BEET.

Wide interest has developed in the sugar beet. Can its culture be made profitable in Kansas? If so, we ought to know it, that we may take it up; if not, we should know that also, that we may sink no money and labor in endeavoring to produce it. Our chemical department is seeking to answer this question.

The chemical department will aid also in the experimental work relative to soil moisture and seed breeding; it will also study the effect of fertilizers in the composition of plants and grains.

#### AS TO WEEDS.

Much of the farmer's life is spent in warfare with the weed. It is a first

ground method, and whether they will therefore stand close pasturing and tramping.

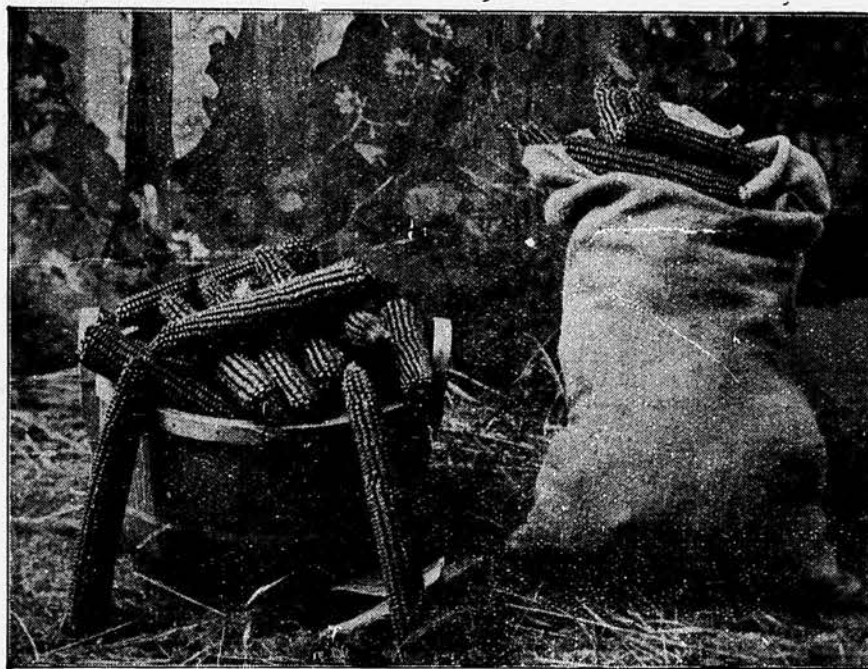
#### VETERINARY WORK.

The Veterinarian of the station has been in part occupied since September in testing the college herd for tuberculosis, making post-mortem examinations of slaughtered cattle and hogs, and disinfecting or making sanitary improvements in and about the college barn. A bulletin on tuberculosis and the relation of its occurrence in animals and men, together with a discussion of the principles of disinfection, will soon be published. The Veterinarian will, when requested, apply the tuberculin test to suspected cattle, and do all in his power to aid in ridding Kansas dairy herds of this dread disease.

The veterinary department suffers from lack of a bacteriological laboratory. When this need is supplied, work upon blackleg, swine plague, and dairy bacteriology will begin. Glanders will receive attention. More accurate information will be sought concerning the cause of sickness, abortion and death from feeding cane, sorghum, Kaffir corn, etc., to farm animals; while other poisonous food plants will be studied. With improved equipment we hope to furnish blackleg vaccine to stock owners at cost. Meanwhile, bulletins of general information regarding prevalent diseases, and questions relating to the hygiene of farm animals, methods of preventing disease, disinfection, etc., will be issued.

#### HORTICULTURAL.

The horticultural department pur-



From a Photograph. Common size bushel basket and bag.

The above illustration is reproduced from a photo of a common sized bushel basket and bag of Golden Cap corn, a variety introduced by the A. A. Berry Seed Co., Clarinda, Iowa, two years ago. They have received reports from farmers in every part of the corn belt which have been highly gratifying in every respect. From a large number of letters from farmers who have used it, we select the following as a specimen, from Frank Lee, of Cottonwood Falls, Kas., who says: "Golden Cap corn is the largest-eared corn even seen; and I will plant entire crop of it next year on 350 acres." Notice advertisement elsewhere and send for free catalogue.

principle of scientific warfare that the habits and characteristics of the enemy should be understood. The botanical department plans to continue the study of weeds. Some weeds we know are above-board in their habits; they multiply by seeds, and hence should be prevented from seeding. But some weeds, like some politicians, resort to underground methods; they throw out creeping roots, or underground stems, and multiply by this means. To cut off such a weed just below ground, or to tear through it with the plow, is to make it more numerous. To discover how to fight it successfully is one object of our botanical experimentation. The department is also investigating the distribution of weeds over the State, and the reason why some plants become weeds.

#### WILD GRASSES.

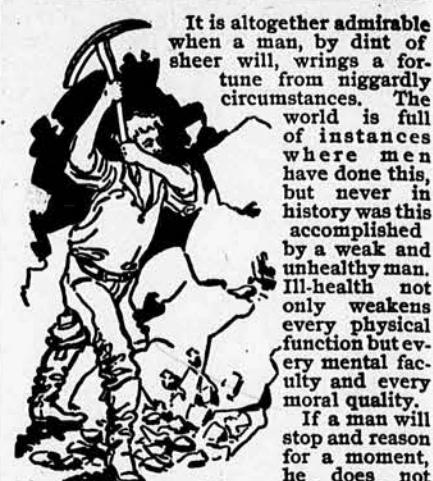
The Kansas farmer has undervalued the wild grasses freely given him of God; and in western Kansas, where cattle-raising is by nature a chief industry, has recklessly and relentlessly turned down his best friend. He has now learned his mistake; but how to revive the dead friend, and how best to preserve and foster its kindred, is a problem.

We purpose to ascertain which of these grasses are most useful; to inquire how by artificial propagation, as by sodding or planting portions of runners or root stalks, these destroyed grasses may be restored; to discover in what soils they flourish best; whether they propagate by the above-ground or under-

poses to study the picking, packing, handling, and marketing of fruit, and the use in this connection of cold storage. It will endeavor to improve varieties of fruits by breeding and intelligent crossing, and to render desirable fruits more fertile. It will test cover crops to discover something better and more profitable than weeds to conserve moisture in the orchard and to carry the fruit crop through the dry season. For the benefit of the semi-arid region it will endeavor to bud and graft the domesticated plum upon the sand plum, and the common cherry upon the sand cherry. It will study nut trees and persimmons to ascertain what varieties are adapted to various portions of the State. Ringing, in orchards and vineyards, will be tested as a remedy for non-bearing; and experiments in pruning will be made. A balanced ration being of value to man as well as to beast, we shall endeavor to ascertain what vegetables not yet in use can be grown in western Kansas. New varieties of small fruits, including strawberries, will be tested. Temperatures of soil in orchard, vineyard and strawberry grounds are being taken to determine the necessary depth and the protective value of mulches. Root grafts will be made, and the value of shade and ornamental trees as wind-breaks will be studied. Through replies to a circular letter issued last fall, much valuable horticultural data has already been collected.

#### WAR AGAINST INSECTS.

Alongside the war with weeds rages the



It is altogether admirable when a man, by dint of sheer will, wrings a fortune from niggardly circumstances. The world is full of instances where men have done this, but never in history was this accomplished by a weak and unhealthy man. Ill-health not only weakens every physical function but every mental faculty and every moral quality. If a man will stop and reason for a moment, he does not have to be a physician to understand the causes of impure blood, or its far-reaching effects. When a man's digestion is disordered, his liver sluggish, his bowels inactive, the blood is deprived of the proper food elements, and the sluggish liver and bowels supply in their place, the foulest of poisons. The blood is the life-stream. When it is full of foul poisons, it carries and deposits them in every organ and tissue of the body. Bone, sinew, muscle, and flesh-tissue, the brain cells and the nerve fibres are all fed upon bad, poisonous food. Serious ill-health is bound to result. The man is weakened in every fiber of his body. He is weakened physically, mentally and morally. He suffers from sick headache, distress in stomach after meals, giddiness and drowsiness, loss of appetite and sleep, bad taste in the mouth, shakiness in the morning, and dullness throughout the day, and lassitude and an indisposition to work. Sooner or later these conditions develop consumption, nervous prostration, malaria, rheumatism, or some blood or skin disease. Dr. Pierce's Golden Medical Discovery is the best of all known medicines for ambitious, hard-working men and women. It is the great blood-maker and flesh-builder. It makes the appetite keen and hearty, and the digestion and assimilation perfect, the liver active, the blood pure and rich, the nerves steady, the body vigorous and the brain alert. Where there is also constipation Dr. Pierce's Pleasant Pellets should be used. Both of these great medicines are for sale by all medicine dealers.

warfare with insect pests. The grasshopper went, but the chinch bug and canker worm refuse to follow. A chief function of our station entomologist is to fight insect foes of grains, and of fruit, shade and ornamental trees. He will study methods of defensive and offensive warfare, and will test patent insecticides. The department is now studying a number of insects whose life histories have hitherto been unknown, and will publish the results in bulletins. The economic aspects of entomology will be emphasized, with a view to making as practical as possible this work. By reporting to the station insect pests immediately upon their discovery, farmers and fruit-growers will make possible the rendering of timely assistance.

In the work of these departments—agricultural, chemical, botanical, veterinary, horticultural and entomological—the co-operation of interested Kansas producers is earnestly solicited, that the station may keep in touch with the wants of the people, and serve them as fully as its funds, equipment, time and talent render possible. The station belongs to the people. Will they advise it and use it?

I have been using Salvation Oil for backache, stiffness in the neck and pain in the side and found it an excellent cure. I keep it constantly on hand.—Chas. Haller, Union Hill, N. J.

#### Don't Tobacco Spit and Smoke Your Life Away.

To quit tobacco easily and forever, be magnetic, full of life, nerve and vigor, take No-To-Bac, the wonder-worker, that makes weak men strong. All druggists, 50c or \$1. Cure guaranteed. Booklet and sample free. Address Sterling Remedy Co., Chicago or New York.

#### Official Statutes.

The General Statutes of Kansas, 1897, in two volumes, compiled and annotated by Judge W. C. Webb, by authority of the Legislature, are now ready for delivery. Contains all the laws of a general nature in force, together with annotations of the Kansas Supreme Court Reports and Court of Appeals.

We have purchased the entire edition, and will sell said Statutes to citizens of Kansas for \$5, net. On receipt of draft or money order we will express one set to your address. This offer is limited.

KANSAS STATUTE COMPANY,  
Topeka, Kas.

#### Cheap Lands and Homes.

The St. Louis & San Francisco Railroad Company offer for sale 100,000 acres of rich farm, grazing, fruit, timber and mineral lands upon cheap and easy terms, in tracts to suit purchaser. These lands are located in southwest Missouri, within 150 miles of St. Louis.

For full particulars, address E. M. Kenna, Land and Tax Agent, Century building, St. Louis, Mo.



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# KANSAS FARMER

ESTABLISHED IN 1863.

Published Every Thursday by the

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

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## ADVERTISING RATES.

Display advertising, 15 cents per line, agate (fourteen lines to the inch).

Special reading notices, 25 cents per line.

Business cards or miscellaneous advertisements will be received from reliable advertisers at the rate of \$5.00 per line for one year.

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

Electrotype must have metal base.

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

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

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

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

Address all orders—

**KANSAS FARMER CO., Topeka, Kas.**

Our "blocks of three" proposition gets the "old reliable" *Kansas Farmer* for little money. It is a popular proposition. Read it. Act on it.

The *World Almanac*, published by the New York World, is with us again. It is an invaluable reference work of current information, condensed and ready for use. The book is over an inch thick.

"Uncle Sam" wants it understood that in sending a big warship to Cuban waters he is not signifying a desire to fight. But Spain thinks he is rubbing rather close to her shores and is scared at the thought of what those great guns may do if ever "Uncle Sam" gives the order to fire.

W. Atlee Burpee & Co., of Philadelphia, have again laid the flower-loving world under obligations for the great variety and superior excellence of the sweet peas provided at small cost. Whether you want to buy seeds or not it will be worth while to drop them a postal, asking directions for cultivating sweet peas.

The fourth annual convention of the Oklahoma Live Stock Association is to be held at Woodward, February 8 and 9, 1898. The program assures a profitable meeting, characterized by papers on the subjects which most vitally concern the cattle-raiser. The evening session is to be devoted to a cattlemen's ball at the opera house.

The American Elevator and Grain Trade, of Chicago, says the Secretary of the Kansas Board of Agriculture is evidently determined that Kansas and her agricultural resources shall be properly advertised if he has any say in the matter. "Mr. Coburn is the 'livest' of all the agricultural Secretaries and his work is always valuable." All true enough, but the Kansas people, who know Mr. Coburn best, should not foolishly fall to arguing that because he has made a good Secretary of Agriculture he should not be Governor. The fact that he has done good work wherever tested is the best possible justification for calling him up higher, as the people seem determined to do.

The American, published at Philadelphia, prints a table of "index numbers" from which it finds that the average tendency of prices is now downward, and it predicts a gradual average reduction of considerable duration and magnitude. There appears, however, to be no immediate prospect of reduction in the average prices of farm products. If these keep up, while the prices of what the farmer has to buy decline, it will be no cause of complaint from the farmer. But some Eastern writers are concluding that the position of the farmer as to prosperity is out of harmony with that of other producers. Since it is fashionable to advocate the cure of all economic ills by legislation, there are intimations that the present prosperity of the farmer deserves legislative attention. It is fair to state that the American, above alluded to, does not suggest any reduction of whatever good fortune the farmer enjoys.

## HOG CHOLERA CURE AND PREVENTION.

No more important announcement has been made in recent times than that sent out from Washington, a few days ago, describing the success of the experiments prosecuted by the Department of Agriculture for the cure and prevention of hog cholera.

In reporting on the experiments, Dr. Salmon says:

"As there are two diseases of swine, hog cholera and swine plague, to be combated, we have prepared a compound serum which acts as a preventive and cure for both diseases. This serum was tested last fall in Page county, Iowa, upon eight herds of swine containing 278 animals. The owner of one of these herds, containing thirty-four animals, did not carry out the directions for the care of his animals, and began treating them with some proprietary medicine. He also is said to have killed some for examination, so that with this one herd, it is difficult to learn the exact effect of the remedy. However, including this herd, there were but fifty-nine animals lost out of 278, or 21.3 per cent., while in untreated herds which were kept under observation, about 85 per cent. of the animals died. Leaving this one herd, from which definite returns as to cause of death could not be obtained, out of the calculation, there were 244 animals treated, of which eighty-six were sick, and only thirty-nine died. Consequently 82.8 per cent. of the animals in these herds were saved. As a better quality of serum can undoubtedly be prepared with more experience, it is reasonable to suppose that this percentage can be maintained hereafter. The cost of this serum is about 10 cents per head of animals treated, one dose being sufficient."

The treatment is described as follows:

"The serum is obtained in the same manner as that of the anti-toxin that is used for diphtheria. A horse or cow is inoculated with the germs day after day until no effect is apparent. Its veins are then tapped, a few drops of its blood injected under the skin of healthy hogs and it has the same effect as a preventive of cholera that vaccination has in smallpox. Curiously enough, the cultivation of the serum does not injure the horse or the cow, and the animal can be used over and over again every year until it becomes aged, provided it is given plenty of those forms of fodder that supply and strengthen the blood. A single horse or cow will produce 1,000 doses of serum a year."

As to losses from hog cholera, Dr. Salmon says that they have been enormous during the last few years, according to some estimates \$100,000,000 a year.

If science has really found an effective preventive and remedy for these fatal and exceedingly contagious diseases of the hog, a great service has been rendered.

From the accounts given it appears probable that the farmer will be able to administer the remedy without professional aid. No doubt both the remedy and the instruments needed in administering it will soon be on the market. If taken up by competent and reliable manufacturers there appears to be no reason why this remedy may not be prepared and handled through the usual channels and be available at reasonable cost to all who need it.

## LEITER SAYS "WAIT."

The Leiter wheat deal is again becoming a subject of interest to speculators and to farmers. Young Joseph Leiter is reputed to be the owner of 7,750,000 bushels of actual wheat of good quality, which he has in store at Chicago. Foreign buyers are reported to be anxious to buy this wheat and it is reported that a French concern represented by a son-in-law of Baron Rothschild has tried to buy the Leiter wheat at an advance of 6 cents per bushel over what Leiter paid for it. Leiter's father confirms this but places the advance offered at 8 instead of 6 cents. Other reports place the offer much higher. The elder Leiter expresses confidence in his son's ability to take care of the deal, but says:

"I do not profess to know anything about my son's wheat deals. He is pretty well able to take care of them himself. I know, however, that he has been offered far more than the 6 cents said to have been offered him by Dreyfus' agents. He has told me of having been offered an advance of 8 cents over the market price. I should say 'wait.' We know pretty well what we have to expect. I have not known of such a condition of things since twenty years ago, when wheat went to \$1.30. There are several prospective buyers laboring with my son now. What he will do I do not know, but I say 'wait.'"

"It is not every day that men can be

found who have the nerve to go in and buy up the real thing on such a scale, is it?" queried Mr. Leiter, laughing quietly. "Men buy wind and sell wind quite freely, but it is different when it comes to buying wheat."

## STATE TEMPERANCE CONVENTION.

Every one who can do so should attend the annual convention of the Kansas State Temperance Union, to be held in Representative hall, Topeka, next week (Tuesday and Wednesday, February 1 and 2), beginning at 4 p. m., of the former day.

Among the speakers will be Bishop John H. Vincent and ex-Senator Peffer, of this city, and Dr. Howard H. Russell, of Ohio, National Superintendent of the American Anti-Saloon League.

The main business of the convention will be to formulate and adopt some plan looking toward a more thorough reorganization of the non-partisan temperance forces of the State.

The railroads have granted a reduced rate of one and one-third fare for the round trip, on the certificate plan, provided 100 or more are in attendance.

## BLOCKS OF THREE.

Every present subscriber for *Kansas Farmer* who will send in two new subscribers and \$2 may have his own subscription extended one year without additional cost. We mean it; blocks of three—one old and two new subscribers for \$2. This offer is made for the purpose of greatly enlarging the *Kansas Farmer's* subscription list, and is confined strictly to the proposition as stated. It will be an easy matter for any old subscriber to get two new ones, and it is almost certain that after reading the "Old Reliable" for a whole year they, too, will become permanent members of the *Kansas Farmer* family. This is to the publishers the business end of this extraordinary proposition. Blocks of three—one old with two new subscribers—all for \$2.

Wisconsin Farmers' Institute Bulletin No. 11, issued from the Department of Farmers' Institutes of the State University, is a report of the annual closing institute, together with a limited amount of such matter as makes it valuable to the farmer and his family. Sixty thousand copies of this book have been issued, which will be distributed free at the 106 institutes held throughout that State the coming winter. The Legislature of 1895 recognized the worth of the bulletin above other State agricultural publications, by authorizing the Superintendent of Institutes to turn over 8,000 bound copies to the Superintendent of Public Instruction, that a copy might be placed in each circulating district school library. In addition to this they send out a limited number to cheese factory and creamery men of this State, and to farmers in localities not reached by institutes, for distribution among their patrons and neighbors. They also mail them outside the State upon receipt of 25 cents for paper covers and 40 cents for cloth bound; to Wisconsin farmers they are sent for 10 cents in paper and 25 cents in cloth.

The fact that, in 1897, exports from the United States exceeded imports to the United States by a larger amount than ever before, has been made the text for many congratulatory editorials on the relations of production to consumption in this country, with complacent observations on the coming financial supremacy of the United States. A remarkable coincidence, however, is found in the fact that the year 1897 witnessed about an even balance between the exports and imports of gold. This has given rise to considerable speculation as to how the large balance of trade in our favor has been settled. Wall street financiers claim that there has been a great importation of American securities—stocks and bonds—and that there is yet due to this country a large balance which is carried by American banks in the form of foreign drafts, which in effect draw a rate of interest greater than that of call loans in this country. It is doubtless true, however, that a very large part of our balance has gone to pay interest on our securities still held in foreign countries; that another large amount has been required to pay the expenses of American travelers in foreign countries; and that no inconsiderable sum has been absorbed by Americans living abroad who spend there their American incomes. This class includes the heiresses whose parents have bought for them foreign titles with hereditary spendthrifts attached. A careful estimate of a well-informed writer is that after all deductions have been made there has been during 1897 a prob-

able reduction during the year of about \$70,000,000 in America's foreign indebtedness.

All good people are humanitarians. All *Kansas Farmer* readers are good people and will want the new family magazine, "The National Humane Alliance." In renewing *Kansas Farmer* subscription inclose 25 cents extra and the magazine will be sent for a year without further charge.

## Publishers' Paragraphs.

Several Farms Wanted. Address, giving price and location, A. H. Russell, Akron, O.

Schenectady is a pretty hard word to spell. "The old Dutch folks" of the Mohawk valley used to call it "Schneccada." But if you write a letter to Dr. Williams Medicine Co., addressed to Schenectady, N. Y., and tell them you read about them in *Kansas Farmer*, and enclose a 2-cent stamp, they will send you a good dictionary—yes they will—and you will find it will contain more words than the whole community can use in a week. They sent *Kansas Farmer* one, and it is a good one.

Inquiries concerning a cure for black-leg are frequent. The veterinarian of the *Kansas Farmer* has discussed the matter at some length with favorable mention of the plan of vaccination. There is advertised in this paper the Pasteur vaccine. Probably none is so good as this. Many readers of the *Kansas Farmer* have tried it, and so far not one has reported against it, while not a few have found it good. Among the latter may be mentioned Wm. Hall, of Ellis county, Kansas, who has used it in vaccinating over 700 head and has sent for a second lot. It will be well for parties interested to correspond with the Pasteur Vaccine Co., Chicago, Ill.

GRAPE-GROWERS GIVE SUGGESTIONS.—A book of great interest to growers of grapes and other small fruits is issued by the T. S. Hubbard Company, at Fredonia, N. Y., in which are summed up in the form of advice to grape-growers, the results of thirty years' experience in growing grapes and small fruits. The Hubbard Company annually grows in its large nurseries eighty to 110 acres of grape vines alone, embracing many millions of plants, and the medals and prizes they have won are evidence of the good results of their methods. Their descriptive catalogue, which is sent free on request, is worthy of careful reading by every one engaged in small fruit cultivation.

The February number of McClure's Magazine will contain an historical document of very extraordinary interest. It is the account of Washington's last days from the manuscript diary of his private secretary, Tobias Lear. Col. Lear was greatly trusted by Washington, was in constant attendance upon him during his last illness, received his dying words and instructions, and witnessed his death. For the closing scenes in Washington's life, this diary is the only original document, and it has never been published before in full, in any popular form. The original manuscript, indeed, has been generally supposed to be lost. It is, however, in the possession of a relative of Mrs. Lear's, who authorizes the publication in McClure's.

In another column of this issue will be found the advertisement of the Advance Fence Company, of Peoria, Ill., by which means they make their trade announcement for the season of 1898. Our readers will remember that these people made their first appearance in our columns in August of last year, the peculiarity of their offer being that they agreed to sell their fence to the farmer direct, paying the freight on the same. You will note by the new announcement that they are still following that plan, which not only saves the farmer the expense and annoyance of paying the freight, but saves him all the dealer's or middleman's profit. These seem to us very fair business propositions, and should any of our readers need fencing this spring, we recommend that you write the Advance people for circulars and prices. Tell them that you saw this "ad." in our paper.

SAFETY IN BUYING SEEDS.—There is no other way to measure the value of seed than by the value of the crop. A good crop simply cannot come from poor seed. Second-rate seeds will waste good land, good fertilizer, and good labor, and the crop won't pay expenses. Now, as the practical farmer cannot afford to waste time testing seeds to find out whether they are true to name, sound and clean, it stands to reason that the only safe way to buy seeds is to seek the protection of a name that has stood for reliability in the past. The great seed house of D. M. Ferry & Co., of Detroit, Mich., has sold seeds all over the



United States and Canada for the last forty-two years, and the steady growth of the business is a sure indication that Perry seeds have given satisfaction. Perry's Seed Annual for 1898, a standard guide for farmers and gardeners, containing much valuable information, is sent free to persons writing for it.

Elsewhere in this issue will be found the advertisement of the Spaulding Nursery and Orchard Co., of Spaulding, Ill. We are glad to introduce these people to our patrons because they are one of the oldest and most reliable concerns doing business in this line in the country. They have been in this business for more than forty years and offer to their patrons their abundant experience backed by a most complete line of every variety of nursery stock. At the home grounds at Spaulding they have 600 acres under cultivation, every foot of which is devoted to the propagation and growth of high-class fruit trees of every species, forest and ornamental trees and shrubs, berry vines and plants, flower stock, etc. They are offering special inducements to men who wish to engage as agents. Better write them for catalogues, prices, special terms to agents, etc.

**ALFALFA.**—Too much space or attention cannot be given to the interests of alfalfa to the Western farmer, feeder or ranchman. It would take several editions to say all that this forage plant deserves in the reclaiming of the Western semi-arid plains and making them "live again," furnishing abundant forage for cattle, sheep, hogs and horses, as all alike take wonderfully to this feed. Every farmer should begin this year to raise a small patch at least and increase the acreage year by year as his experience develops. The great drawback has been in procuring good seed and the lack of a few essential principles of culture. The culture has now been carried past the experimental point and all the information needed to make a complete success can be obtained, also the best of seed is being sent out by McBeth & Kinnison, of Garden City, Kas. Their seed farms are located in the center of the principal alfalfa seed-producing district of the United States—the Arkansas valley. Do not let this go by default, but send at once for information that will place you above want in times of drought.

**BURPEE'S FARM ANNUAL, 1898,** W. Atlee Burpee & Co., Philadelphia.—This welcome harbinger of spring comes to us replete with good things, horticulturally, fully as interesting as any of its predecessors, and as fascinating to flower and plant lovers as ever. It is a handsome book of 144 pages, and "tells the truth about seeds." Among the novelties offered this year, which is a prolific one in that respect, are: In vegetables, besides the long-keeping Australian Brown onion, introduced last year, there are enumerated three new tomatoes, each of distinct character and real merit; the Golden Eagle melon, a new pepper from Japan, a new American lettuce, and, for the first time, the wonderful extra early wrinkled Gradus pea at a moderate price. In flowers, besides Burpee's Pink Cupid, which is sold in original sealed packets by all leading seedsmen in the world, eight other new sweet peas, which can be had only direct from the firm. Among other exclusive novelties are the White Defiance Balsam, the giant-flower Sunlight and Moonlight nasturtiums, and the beautiful new President McKinley pansy, as of unsurpassing merit. In plants, besides the usual novelties there are the New Dwarf Gloriosa canna, and the wonderful free-flowering Burbank rose—the best of seventy-five thousand seedlings raised by the world-famous "Wizard of Horticulture." A very beautiful plate of six new sweet peas offered by this firm is a feature of the annual, as is the cover illustration of the same flower.

#### The Calendar for Busy Men.

The end and the beginning of the year makes the old calendar useless and brings necessity for the new one. The time has come to select the daily companion for 1898. There are numerous styles and sizes from which to choose. Our choice, as usual, is the business-like calendar which is issued each year by the well-known advertising agency, N. W. Ayer & Son, Philadelphia, Pa. This is handsome enough for the modern, well-furnished office or library and equally desirable among more modest surroundings. The large clear figures are distinctly visible across the room, which together with its other attractive features make it a general favorite. As usual the firm's familiar motto "Keeping Everlastingly At It Brings Success," is constantly in sight, encouraging daily endeavor. Each of the flaps contains terse, thoughtful and helpful suggestions for business men. It is not surprising that the popularity of this calendar has led in recent years to doubling the former edition. Its price (25 cents) includes delivery to any address. This firm's calendar has been the daily guide of Kansas Farmer office for many years.

#### Russian Thistle Hay--Native Grasses.

At the session of the Students' Farmers' Club, of the Kansas State Agricultural College, held on the evening of January 14, Mr. J. W. Adams, a student of the college, reported that the Russian thistle had been harvested near Cheyenne Wells, Col., for a hay crop. A farmer had cut twenty acres of the thistles while the plants were still succulent and tender, and is feeding them to his stock this winter. Here seems to be an opportunity to make use of a pest.

At the same session Mr. Geo. L. Clothier, Assistant Botanist, presented a paper entitled "Importance of Native Grasses and Their Preservation." Mr. Clothier believes that the wonderful fertility of the soil in prairie regions is due to the action of the grass roots and root-stocks in etching and dissolving the rocks and in holding the soil together after it is formed. The grasses have held noxious plants in check, and it is only after the virgin soil has been turned by the plow that weedy pests gain a foothold. By the laws of evolution the prairie grasses have become fitted to endure great extremes of climatic changes, and they have learned to use our soil with greater relish than it is possible for any tame species to do. By contact with each other through the inevitable struggle for existence, they have become fitted to live in communities, and are consequently enabled to occupy every inch of the ground surface, and to draw more material out of the soil than any one species alone could use. Hence a natural pasture of mixed grasses is, economically, better than one formed artificially from a single species. The native grasses are of vast financial importance to the farmers of the West. They return a never-failing income of \$9,000,000 to the farmers of Kansas at present, when scarcely half utilized, while their total value in all the prairie States is almost incalculable. Droughts, hot winds, chinch bugs, arctic winters and prairie fires have struggled in vain for ages to gain the supremacy over these valuable plants. They return an income of 8 per cent. per annum on all arid lands worth \$5 or less per acre, whether any rain falls during the summer or not.

The chief value of the prairie grasses depends upon their methods of propagation. They accomplish the function of "multiplying and replenishing the earth" by underground stems called rhizomes, or by runners above the ground, as is the case with the buffalo grass. They are thus not dependent upon seeds for propagation. The solution of the whole problem of their preservation consists simply in allowing them to produce thrifty rhizomes and runners.

The underground parts of a plant depend for their food upon an abundance of green leaves spread out in the air and sunlight. The green coloring matter of leaves, called chlorophyll, with the aid of sunlight manufactures all the organic matter in the world and is the one source of food for both plants and animals. We must allow our grasses enough foliage to manufacture their own food materials and to store up a supply in their subterranean parts, or they will gradually starve to death. Constant mowing or the incessant nibbling by sheep or other animals of the tender blades of grass as soon as they appear above ground will finally result in the extermination of the grass. Over-pasturing destroys our capital and reduces profitable lands to weedy, barren wastes.

Some of our most valuable wild grasses very seldom produce seed. If they are killed out of the land completely, the only way to get them back is to set out the sod—a very expensive process. Those species seedless, or practically so as far as the farmer is able to collect their seed, are big blue-stem, buffalo grass and little blue-stem. These form about 50 per cent. of the total product of Kansas' native species.

The trial of tame grasses has proved them to be untrustworthy except in a very limited portion of Kansas. (Alfalfa or other clovers are not included under the term grass.) Introduced species cannot adapt themselves to our arid plains unless they be introduced from other arid regions. Most of our tame grasses are indigenous to a cool, moist climate. It will take them ages to adapt themselves to the climatic conditions of western Kansas.

The preservation of our native species is of such importance that it demands the attention of stockmen everywhere. This can be accomplished without detracting from the present income of our grazing lands by rotative pasturing. Rotative pasturing is grazing a part of the land with the whole herd while the remainder is allowed to rest. The second part is then grazed while the first

rests. The periods of rotation should not exceed six weeks. The order of rotation should be reversed each year. Cross fences and rotative pasturing will economically solve the problem of the preservation of the native prairie grasses.

#### Clover Again--Subsoiling.

Editor Kansas Farmer:—In my article on clover you make me say: "I sow one bushel mixed clover and timothy seed on an acre." That is absurd. I said, or meant to say, one bushel to six acres. Again, I am made to say clover is the best crop to grow in "growing" orchard. It should have been "bearing" orchard. A young orchard for its first six or seven years should be cultivated in corn, and kept clean.

I was much interested in the subject of subsoiling, as treated at the recent meeting of the State Board of Agriculture, and desire to say something upon this subject to the intelligent readers of the Kansas Farmer.

Three years ago I attended a farmers' institute, and was exposed to the subsoiling fever. "It took beautiful." I got a subsoil plow and went to ripping up the bowels of the earth. I hitched 4,500 pounds of horse-flesh to it (it needed that much) and went down into the ground sixteen to twenty inches. I have some patches of hard-pan that is about as poor as Bill Nye's Georgia farm. He said some of his land was so poor he couldn't raise a disturbance on it. I took special delight in digging up these patches, expecting startling results. I broke the plow many times—pulled the nose off, broke clevises and single-trees and had many vexatious delays. Finally, on account of the terrible strain on the team, I quit before I had half finished what I intended to subsoil, and lent the plow to a neighbor. The result was disappointing. The corn on the subsoiled land was not better than on the part of the field not subsoiled. The hard-pan patches raised their usual insignificant yield, and several of my neighbors who have borrowed and used the plow report no improvement in crops. None of them have wanted it a second year.

I have fully recovered from the subsoil fever, and believe I am immune from future attacks. I had it bad. My eagerness for the experiment would brook no delay, and when I got at it, the breaking up the ground to great depth was an exhibition of power and a semblance of thoroughness in work that was very fascinating. I expected great results. My disappointment was great, but I had company. Some of my neighbors were in the same boat. They could not laugh at me.

Now, I believe in subsoiling—the subsoiling that nature does. Every winter the soil freezes from a foot to two feet deep, sometimes more. By this the cohesion of the soil is broken up, its particles disintegrated, and the work infinitely more thoroughly done than by any puny power man can devise. The rains of spring thoroughly saturate this soil, and the way to conserve this moisture is by fall plowing and thorough surface working in the spring and early summer. Fall plowing properly done will add 25 to 30 per cent. to the next season's crop over what would be realized by spring plowing, because of the fineness of the soil resulting from its exposure to the elements. The roots of plants play an important part in subsoiling. Especially is this true of red clover. Its strong roots force their way down deeper than any subsoil plow can run, and bring into active use the latent fertility of the deeper soil. While we sleep this work is going on. These are nature's ways—simple, easy, efficient. How does the awkward, cumbersome, inefficient device of man (the subsoil plow) compare therewith?

EDWIN SNYDER.

Oskaloosa, Kas.

#### Scabby Potatoes.

Editor Kansa Farmer:—I wish to ask you for information on a subject that will no doubt be of interest to many others. Three years ago I broke some ground and planted clean-looking, Northern-grown potatoes. The crop was quite scabby. Since then I have treated all seed with corrosive sublimate and find about the same per cent. are scabby. Scab may have started from a little old manure thrown on the sod. Would like to know if there is any way to get rid of this scab through treating the seed or soil. Any light on this subject will be greatly appreciated. Garfield, Kas. N. O. WAYMIRE.

IRRITATION OF THE THROAT AND HOARSENESS are immediately relieved by "Brown's Bronchial Troches." Have them always ready.

#### Clover as a Fertilizer.

Editor Kansas Farmer:—I noticed, some time ago, your request for articles on clover in eastern Kansas. I think there has not been the response to this request that there should have been. I am satisfied that clover must be an important factor in successful farming in this part of the country. Although now is not the proper time to sow clover, it is in order to call attention to its merits, so that those that wish to can get ready to sow when the time comes. Much clover seed has been hulled in these parts, and the seed can be bought cheap. After it has been shipped to central markets, and back to our local dealers, the freight and profits of the dealer will be added.

Our soil, though seemingly inexhaustible, "runs down" at last by continual cropping, and this comes soon when we do not practice judicious rotation—when it is continually "corned." I used to think that manure was the best medicine for poor land. I still use all the available manures on the fields nearest barns and lots, yet I am satisfied that clover is the cheaper and better fertilizer in this country. I first sowed clover in Kansas about seventeen years ago. I got the seed of a neighbor for \$7 per bushel. A few years later I had some sent from the East at \$4 per bushel. I found both times the seed was good, but that from the East brought a new weed to the farm. I left my clover fields in grass several years, pasturing one year and mowing the next, the grass being half clover and half timothy. On turning this sod under I found the soil better than the original new land. On some of these fields I have now raised four good crops of corn and three oat crops and two good wheat crops. I now think it most profitable not to leave it in clover so long; leave it only from one to three years.

I generally sow clover under wheat, if possible sow on the last snow in March. Last year I sowed early in April and have a good stand. My neighbor sowed part of his early in May (on wheat) and run the harrow over it. He lost his seed, getting no stand. It was not the harrowing that hurt it, but the wheat choked it—May being too late in the season on wheat. Do not sow too early, as a sharp frost will kill the tender plant when it first comes up. If your stand is thin don't turn it under, as a poor crop, but let the seed ripen before the cattle are turned on and it will be very thick the next year.

It don't pay to farm poor land when clover so easily renovates it; and with present prices of cattle it pays better than grain. I like to have it half timothy. This makes a heavy yield of hay—the timothy holding up the clover and the clover loosening the ground, thus promoting the growth. The mowing will clean the ground of most noxious weeds, so that we can start again with the plow into a new, clean field after the clover treatment. Clover will keep growing in dry weather and thus afford pasture when other grasses fail.

H. F. MELLEBRUCH.

Carson, Brown Co., Kas.

#### A Good Dictionary for 2 Cents.

A dictionary containing the definitions of 10,000 of the most useful and important words in the English language, is published by the Dr. Williams Medicine Co., Schenectady, N. Y. While it contains some advertising, it is a complete dictionary, concise and correct.

In compiling this book care has been taken to omit none of those common words whose spelling or exact use occasions at times a momentary difficulty, even to well educated people. The main aim has been to give as much useful information as possible in a limited space. With this in view, where noun, adjective and verb are all obviously connected in meaning, usually one only has been inserted. The volume will thus be found to contain the meaning of very many more words than it professes to explain.

To those who already have a dictionary, this book will commend itself because it is compact, light and convenient; to those who have no dictionary whatever, it will be invaluable. One may be secured by writing to the above concern, mentioning this paper, and enclosing a 2-cent stamp.

#### A New Invention.

Mr. E. J. Nason, of Washington, Kas., showed a sample of his new Feeder, Soaker and Steamer to the farmers at the meeting of the Kansas State Board of Agriculture, and the farmers spoke of it in a very commendable manner, on account of its superior merit and the very low price at which it is sold. Farmers using it speak in the highest terms of its merits.



## Horticulture.

### KANSAS HORTICULTURISTS IN SESSION.

#### Discussion of Mr. Cellar's Paper on Orchard Treatment.

(Continued from last week.)

A member—I have come 200 miles to find out how to catch rabbits and kill borers.

Cutter—I had some peach trees that the borers got into. I took the trees and stood them in a barrel of water. Next morning I took them out, and there was not a borer left. I dug out a little hole around each tree. We had snow. The snow melted down into the ground, and kept it wet, and drove the borers out. If we make holes and let the water come in, I do not believe we need poison.

G. Holsinger—It seems to me, if you have young trees, it is easier to get the borers out than to dig holes around the trees.

Gano—The most economical and best plan we have ever tried is this wooden veneer. It is the best thing that can be used. When we plant in the spring we put it on, and it is astonishing to see the difference in the growth of the tree. Then this is a protection during the summer against rabbits. We are annoyed very much by them. They play around the trees and ruin thousands of them in the summer. After that is left on one spring, the next spring we remove it. We use about one-twelfth of an inch thick, any length that you desire. Of course, the longer you get it, the more it will cost you. I think there are three lengths. We generally use about eighteen inches on our young trees. In the second year we use longer; in the third we sometimes double, and use two instead of one length. We find this to answer all purposes. It is the cheapest way, and guards against rabbits and borers. We have tried screen wire. The eighteen to twenty-inch costs about \$3 per 1,000. What we have heretofore been using has been gotten from Missouri parties. The Kansas City Box and Basket factory can furnish them. We hardly ever leave them on over three years. Take them off in the spring, and leave them on two or three months. That will let the bark of the tree harden up. We find it is better to do this than to leave on the second year. In removing them, we take a damp day, and, after we take them off, lay them down by the tree and let them dry. They would last longer by soaking in tar. I do not know that there is any other advantage.

Cellar—My experience has been, when they are dried to any extent, they will have to be dampened or they will split.

Mrs. Moore—How thick did you use?

Cellar—About the twelfth of an inch.

Mrs. Moore—Those used by us are one-tenth of an inch thick, but they crack so. The thinner they are, the better.

Murtfelt—There are two kinds of borers, one that comes in next the ground, where the bark is soft, and the other at the fork of the tree, and I think those that have been most successful in killing them are those that watch at the bottom of the tree and take a copper wire and follow them up as soon as they see the sawdust. Your annual reports will tell you all about them. I suppose that you have all been speaking in regard to the apple tree borer. Now, the peach tree borer you can head off by mounding up your tree in the spring. About the 1st of July level them off again. The best peach orchards have been treated that way. The mounding makes the work too hard for the borer that works in the peach tree. I do not know that rabbits do a great deal of damage. They do when the snow gets high around the tree.

Bohrer—Speaking about rabbits and borers, I want to give my experience in regard to this matter. When I first located in the central part of Kansas, it was alive with jackrabbits. I did not think about buying jackets at all, and I cut the long slough grass, which Swedes use to thatch their roofs with. When I set out my orchard, I put this around every tree. After it remained a year or two, I untied it. Now, if rainfall has anything to do with the destruction of the borer, it certainly did with this. Whatever moisture is caught there is bound by this straw to the tree. In regard to the spray, I sprayed my trees one year, and it is not much of a job to spray a row or two, but when you have to go over 700 trees, to a man of my age it is not much fun. My friend Wellhouse has a good many orchards, and he has done nothing but spray. What they call the Wellhouse mulch is not doing its work. The matter of spray-

ing is not fully settled. I have no faith in it on earth. I have got one of the best pumps in use for spraying, but it did not do any good.

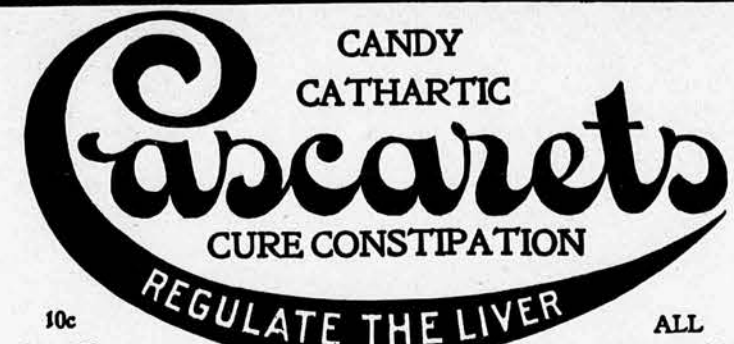
Secretary Barnes—The Agricultural College is at the present time making preparations to issue a complete pamphlet of some kind on insects. They sent to me last Wednesday, and wanted all the cuts we had in reference to curculio, codling moth, etc. They wanted them at once. I have an idea this will be a benefit to you.

Cecil—I would like to know what time of the year Mr. Gano takes those jackets off his trees.

Gano—We take them off generally the second year, say about April or May. I then clean away the dirt. I do not depend altogether on these jackets. I want them on early in the fall.

Robinson—The subject before us is a very broad one. I suppose it includes spring pruning, rabbits, etc. To commence with the borer, the two kinds that have been spoken of are very distinct, and perhaps are equally destructive, but in Butler county I have failed to see a round-headed borer. The flat-headed borer is very abundant. My orchard happened to be exceedingly full of borers, being between timber. There would be a few acres that would be quite bad, then there would be a strip with no borers, but I found that cleaning away the ground before the eggs were laid would prevent them to a great extent. Make the ground perfectly clean and smooth with hoe and rake. By coming to a tree, and with young, active eyes you can soon tell whether there are any borers or not. If they are in there, they should be killed about July or August. A little young larvae will be in the bark, as you can tell by discolored water. The egg is laid by an ovipositor. It is put in the bark diagonally instead of straight, and in that way commences to raise the lip of the bark, and there is no use digging; take a knife, press into the lip, and you can hear it crack. I have taken out as high as twenty-one eggs without a single one hatching. If they had been allowed to hatch, in one month the tree would have been destroyed. You can destroy them before they get through the bark at all. Now, as to trees that are infested with young borers, if the ground is kept in proper shape, a man going over and examining them at the rate of 200 to 500 trees a day, will be able to keep the borers out. But if weeds are let grow and leaves drop, it makes a great deal more work, and if the ground cracks, the mother will lay her eggs in there, and into the tree they go. My experience with the borer has been that after they have been in the tree about two years, it does more harm to take them out than to leave them in. A perfect beetle comes out of the tree about the first of June, perhaps in this location about the first of May. They come out usually about six inches above the ground. They are savage and fierce. Put two or three in a bottle and they will eat one another up. In regard to spraying: There seems a great diversity of opinions. The diversities of the kind of poison that is used on the tree is just as great. Some are successful and some are not. It would be strange if something killed those things directly after spraying. Some spraying does kill borers. Some just kills worms. London purple is very variable in its strength. Some of it is four times as strong as the other. But if you get it very strong, it will kill the young leaves. If you do not get it strong enough it will not kill worms. Now, it is a question of getting it just right to kill worms and not the leaves. Paris green is prone to settle at the bottom, and if we stir it up we get it so strong that we not only kill the bugs, but the leaves, too. My method in cultivating an orchard is to get it in accurate rows both ways. I get a team and plow the ground as level as possible; turn it always deep enough to plant corn. I mark it off in the old-fashioned way of planting corn. Now I plant corn in my orchard too, if the trees are quite small, and we cultivate both ways. I cultivate not more than twice each way, and if that is well done we will have a large crop. The apples will stay on a great deal better than if the ground is dry and cracked. In pruning, I do like to see a well-balanced tree. If we are going to make a tree balance within a few inches of the ground, we can do so with a knife. Nature did not make this kind of tree to grow like the Winesap. You could not improve a crab apple tree by pruning. The tree bends over in spite of all nature does to help it up, and it is to be pruned. In wrapping the trees, cut screen wire and put it around them. It will stay on until the growth of the tree bursts it off. The height would have to be

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DRUGGISTS

gauged by the rabbit. Some of our rabbits can reach a good height.

Sharp—We have a neighbor who claims he can kill borers by boring a hole in the tree and using sulphur.

Holman—At an annual meeting in southern Illinois, which I attended, a man came along with a preparation of nails soaked in acid. He claimed that if put on the trees the apples could be eaten, but the bugs would not eat the leaves. This preparation they would drive into the tree; then the sap takes up the acid and poisons the leaves, and the worm eats the leaves, getting so full of iron that he falls and breaks his neck. You may plug trees with two or three pounds of sulphur, and you will not see a particle of difference.

Johnson—I would like to ask Mr. Cutter whether he would consider it safe to make these excavations around the trees and allow the water to remain in there. Of course this year is not a good year for test, because there has not been enough rainfall, but take an ordinary year.

Cutter—I do not think it would hurt the tree at all.

Johnson—I do not think it a good idea to let this water remain there to freeze in winter, causing the bark to burst. I find where my trees are wrapped with hay they do not dry out so quick. Talking about this spraying matter, the cheapest and most effectual way is to take three pounds of white arsenic and boil in water for fifteen minutes. Use one pint to fifty gallons of water. Quicklime can be mixed with this. Cork it up and use it, and it will kill your canker worms. The whole cost of it, 800 gallons, is not over 65 cents.

VanOrsdal—I have been trying to raise an orchard for thirty years, off and on, and have one now, but how to do these things is the question. I can learn something new every year. One gentleman says it is an old subject. I have never heard of water killing them by pressure until to-day. I may be slow learning, but if that is a fact, it will save us lots of work. If Cutter can drown these borers by digging a little hole, that is the easiest, and yet we are lazy. As for spraying, there seems to be a kind of a black eye here on that. Some are positive so and so will do it, and some say not. I have been spraying seven years, and while I do not see any great results, yet I do believe that I have no canker worms. I believe that spraying helps the trees. I think you can see it by the vigor of the trees. They look better and do better. Just across the lane from me my neighbors do not believe in spraying, and I get a good many insects from them. For an illustration, I felt as if I needed a little medicine. I went to the drug store. The druggist said, do not just take one bottle, but take more, and stand by it. That is just the way with this spraying. Because some one says it is not good, do not stop it, but keep at it until you are thoroughly satisfied that you are doing the right thing.

Robison—This spraying with poison is becoming quite popular. We are adopting the plan of turning the hogs in our orchard.

Bohrer—A number of my neighbors have wrapped their trees and they have no borers, and I believe that if the wrapping is left there during the rainfall it will kill the borer. It takes a good deal of rustling for me to get a 75-cent jacket, so if this wrapping is successful that is much cheaper.

Bailey—In regard to digging those holes around the trees, the flat-headed borer will not be affected by this. We have not got any round-headed borers. In regard to rabbits, our County Commissioners have solved the question for Sumner county. They offer a 3-cent bounty for each scalp. There have been turned in to the County Commissioners' office 60,000 scalps. Sumner county has lost dollars by damage from rabbits where they lose cents in paying for their scalps. I am satisfied that if other Commissioners would offer bounties it would

be a saving of thousands of dollars to the State. The jackrabbit will cut a path right through alfalfa and wheat.

President Wellhouse—Our orchards for the last six years have been bearing alternately, as all orchards will when they arrive at a certain age. We had about twelve crops in succession and then they begin to alternate, but our trees have been different from most other orchards. In 1893 we had our first failure. In 1894 and 1895 we had heavy crops. In 1896 and 1897 again failures or nearly so, and now we hope that next year they will bear again. I know that in Leavenworth county the impression has gotten out that spraying has caused these failures. I do not think spraying has had anything to do with the crops, but that spraying was a necessity. If it had not been for spraying we would have been out of the fruit business long ago. You take a small orchard and there are probably birds enough around to kill all the worms there are in it. But you take 160 acres and they can't begin to do it, and we have got to spraying, and I say if it had not been for our spraying it would be utterly impossible for us to destroy the insects that are among our trees. We have been spraying for about twelve years; spray every year.

Bohrer—Do you not have the codling moth?

President Wellhouse—A year ago we had canker worms by the million. By spraying we destroyed them. If you are going to kill canker worms you must spray as soon as the leaves begin to bud out.

Robison—The female has life to climb the trees to lay in January and February, so that you cannot always kill these. They will hatch with the earliest leaves that come. They eat the buds to live on. Their life is about twenty-eight days. They do not show their effect in the leaves until the first ten or fifteen days, and by the time the spraying is commenced they get into the trees.

Popenoe—We had them out in November last fall at our place. We were able to capture a few. So you want to look out for the early canker worm. To kill the female the work must be done early. I have found them in buds even before they were expanded. There is no harm in making the first attack with spraying before the buds open.

Holman—We had one grower who marketed his apples free from codling moth. The purchaser told me that Barnes, the dairyman, brought these apples in. He said he turned his cattle in and that they ate up every apple that fell and consumed the codling moth. He said it paid him richly. Hogs never do eat a crop up clean. He said one cow would eat as much as a small herd of swine.

President Wellhouse—In regard to spraying, if we had only the codling moth to fight, I would never spray for it alone. They eat into the fruit so soon after they are hatched out that the uncertainty of reaching them with the poison is so great that I would not attempt to kill them in that way. We spray only for the insects that feed upon the trees. Birds eat a great many of the insects, such as the codling moth.

Bohrer—Do the English sparrows take any of them?

President Wellhouse—They will pick out the larvae of every insect they can reach, and although the English sparrow has been denounced, it will destroy all insects of that kind. The codling moth, to my notion, is not so destructive as the birds.

Johnson—The codling moth never lets an apple get ripe on the tree. Our streets are full of English sparrows. Why do they not keep the trees free?

President Wellhouse—The codling moth weaves a web and the birds cannot get to it, but whenever the birds can get to the larva of the codling moth or any insect they will eat it.

Robison—If you will go into cellars where apples have been kept you will



find them full of chrysalises that have developed. Since the subject of codling moth has come up, I will relate what I saw in an orchard at Lawrence. A part of the orchard had been wrapped with common building paper to keep the canker worms from getting into the trees in the spring. I asked permission to look at this, and at every place where the paper came into contact with the trees it was filled with chrysalises of the codling moth, but where there was a hollow space there was none. I think there were three batches of 150 larvae where I took the paper off. I advised that they take the papers all off and get rid of them. I have been to the orchard since. The paper was as punctured as if boys had shot it with a gun. This seemed to have been done by the woodpeckers.

(To be continued.)

#### San Jose Scale Written Down.

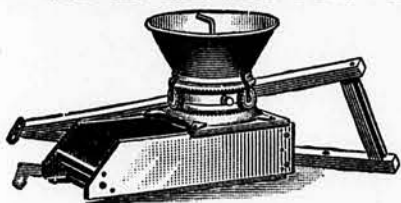
The following is from Mac. J. Crow, for years associated in the management of a leading California nursery and orchard at Napa, Cal., who has recently taken up his residence in Pike county, Missouri:

"The San Jose scale is evidently thoroughly established in numerous localities east of the Rocky mountains. Orchardists should accept the fact, quit talking about legislation, and turn their attention to prevention or cure, as the case may be, in their individual orchards. Some are making a 'mountain out of a mole hill,' and seem to overlook entirely the fact that this scale problem was solved in California some six or eight years ago, and is to-day requiring much less attention than some fungous diseases which are so numerous throughout the Eastern and Middle States. It is far easier to combat the San Jose scale than the codling moth, scab, blight or borers; the former can be kept thoroughly in check with less work and expense than any one of the latter. This is an indisputable fact, a fact thoroughly demonstrated in the California orchards. It is unnecessary to 'dig and burn a badly infested tree,' as some of the wise ones often say. Three thorough sprayings with lime, sulphur and salt, or the resin washes, properly applied at the right times, will clean any tree, no matter how many scale are on it; then one spraying a year is sufficient. Of course, if the scales have been on so long as to almost kill the tree, then a new one had better be planted.

"It sounds rather ridiculous to hear such an uproar about an insect that, as said before, is less dangerous or troublesome than many of the insects which orchardists are fighting and saying nothing about. The numbers of curculio, codling moth and several others can only be diminished in a degree, and the damage resulting from their depredations in proportion; but the scale can easily be rendered perfectly harmless."

#### A Proper Grinder.

There are a great many grinding machines on the market, but there is yet to be produced another machine that perfectly combines all possible advantages as does the "Dain Grinding Machine." It is the machine for quick and thorough grinding. The merest child can use it successfully. The Dain Geared Sweep Mill is a positive novelty in the way of a grinding machine. It is so constructed that the inside burr revolves twice to the sweep's once, giving double the grinding capacity of any ordinary mill with the same-sized burrs. The



pressure between the burrs in grinding is carried on chilled roller bearing, which admits of double work with the same draft as compared with other. The Dain will grind all kinds of grain and is sold under a positive guarantee that it is the most satisfactory and rapid implement of its class on the market. The makers, the Dain Manufacturing Co., of Carrollton, Mo., are thoroughly reliable. They have a paid-up capital of \$200,000 and have had a successful business career of over fifteen years. It is to the advantage of every one interested in the grinding of grain to write to them. They will be pleased to furnish ample information about the Dain Grinding Machine and its many good points.

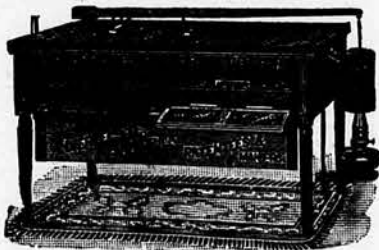
Send \$1.25 for Kansas Farmer one year and book, "Samantha at Saratoga."

#### Economy in Buying Seeds.

Economy is not paying less money for a thing than you expected to pay. True economy is good management, and about the worst management a farmer can be guilty of is to buy cheap seeds and thus cut the value of his crops in half—or worse. A stream cannot flow higher than its source, and a crop cannot be any better than its seed. Real seed economy is buying seeds that bear the stamp of a house that is known to be reliable; then the planter is absolutely sure that he gets what he wants and what he pays for. In every part of the country dealers sell the absolutely reliable seeds of D. M. Ferry & Co., of Detroit, Mich., which have given uniform good results for the last forty-two years. Ferry's Illustrated Seed Annual for 1898, containing information that no farmer or gardener can afford to be without, will be sent free to any one making application to the firm.

#### The Ertel Victor Incubator.

For people who do not raise chickens but who would like to, either for pleasure or profit, as well as for people who own poultry, the catalogue of the Geo. Ertel Company, of Quincy, Ill., is deeply interesting reading. Written in a bright, crisp, story-telling style, it makes perfectly plain to the most hurried reader just what a perfect incubator should be and just how a perfect brooder should be put together. It tells of the opportunities for making not only "pin money" but a competency from the pursuit of chicken-raising, and by its description of the Improved Victor Incubator it shows the way to engage in the business, to a certain extent, without interfering with one's regular occupation. The catalogue will be sent free to any one who asks for it and mentions this paper.



The Ertel Victor Incubator has been in practical use for several years and it has taken first place because of its simplicity and efficiency. In supplying the incubating eggs with warmth, moisture and fresh air it is perfect in action, and, not less important, it is automatic in its operation. The owner can trim his lamp morning and evening and go away for ten or twelve hours, leaving the incubator to look after the eggs as surely and intelligently as the mother hen could do it. In fact, when one considers the manner in which the incubator adjusts itself to atmospheric and other conditions, the simplicity of the mechanism and the low cost of the machine are matters of surprise.

The George Ertel Company is a long-established house, with vast experience and a high reputation for honesty and solidity, and what they say about methods of raising chickens is worthy of attention even from raisers of life-long experience.

#### Home-Seekers' Excursions.

Tickets will be sold on first and third Tuesdays of February and March via the Santa Fe route to points in Missouri, Arkansas, Indian Territory, Oklahoma, Texas, Louisiana, Arizona and New Mexico, at one fare for the round trip, plus \$2.

For exact territory and full information, or tickets, call or address any Santa Fe agent.

**We PAY CASH** each WEEK the year round, if you sell Stark Trees. Outfit free. STARK NURSERY, LOUISIANA, MO., Stark, Mo., Rockport, Ill., Danville, N. Y.

**SEEDS** 1 Pkt. Flower Seeds, Giant Cyclamen, Mammoth Gladiolus, Fancy Peas, Gay Finks, Gorgeous Poppies and California Glory, all for 5c. 5 Pkts. Vegetable Seeds, 10c. Red W. Onion Seed, 50c. per pound. 8 GERANIUMS, 2c. 1 8 ROSES, 2c. Catalogue FREE.

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grow paying crops because they're fresh and always the best. For sale everywhere. Refuse substitutes. Stick to Ferry's Seeds and prosper. 1898 Seed Annual free. Write for it.

**D. M. FERRY & CO., Detroit, Mich.**



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**A New Forage Plant**, said to produce immense crops of excellent forage. Especially adapted to drouthy localities and alkali lands. **Don't fail to try it.**

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### ...Mexican June Corn.

This corn has proven a sure crop when planted in June or later. Quality **for table or stock food unexcelled.** Sure to make big crop regardless of season.

#### Texas Farm and Ranch...

has contracted with Texas Seed & Floral Co. for 5000 packages each of Offers No. 1 and No. 2, and **when they are exhausted offer will be withdrawn.**

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The proprietors of the paper in which this ad. appears will tell you that Texas Farm and Ranch Pub. Co. is responsible, reliable and prompt.

When remitting say which offer you select.

**Address, TEXAS FARM AND RANCH, Dallas, Texas.**



**1000** Box Elder & Ash \$1.25. Rus. Mulberry and Osage Hedge at about same price. **100** APPLE, 3 to 4 ft. \$3 Cherry, 3 to 4 ft., \$10 Concord Grape, \$1.50. We pay the freight. Complete price list free. Jansen Nursery, Jansen, Nebr.

#### WE CAN SAVE YOU MONEY

On small fruit plants—100 varieties of Strawberry plants; 75,000 Kansas Raspberry, best raspberry ever introduced. Write for our new 1898 catalogue, now ready. Address, **F. W. DIXON, Holton, Kas.**

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Growers of hardy, first-class evergreen and deciduous trees for shade, ornament or timber. Largest stock, lowest prices. Write for free catalogue, and let us know your wants.

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**PLEASANT VALLEY SEED CORN FARM,** J. B. ARMSTRONG, Proprietor, SHENANDOAH, IOWA.

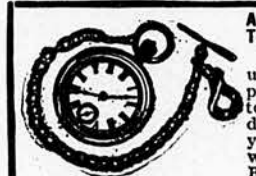
**2,000,000** Strawberry Plants at \$1.50 per 1,000 and up; 13,000 Peach trees 1 1/2c. and up; Osage Orange Hedge \$1 per 1,000; Ash Seed, 10c. per 1,000. A large supply of all kinds of exceedingly well-rooted, true to name and strictly first-class nursery stock. Write for price list to **BOHEMIAN NURSERIES, Reynolds, Neb.**

**BURPEE'S SEEDS GROW!** Write a postal card to-day for **BURPEE'S FARM ANNUAL for 1898,** Brighter and better than ever before. **W. ATLEE BURPEE & CO., Philadelphia.**

**FREE** Government Free Seeds are simply "not in it." To introduce the Best Michigan Northern Grown New Land Seed Potatoes, Farm, Garden and Flower Seeds everywhere, I will give away **ABSOLUTELY FREE** 500,000 Packets of choice Vegetable and Flower Seed. Your name on a postal card gets my Free Seed Book from which you may select Free your supply of seeds for an entire garden. Write to-day. **HARRY N. HAMMOND,** Seedsman, Box 18, Decatur, Mich.



Prices were never before so low—stock was never better. Everything in the **REID NURSERIES** is healthy, well rooted, fully up to grade. You will get exactly what you want at one-half price. Write for estimates, suggestions, illustrated catalogue. Try the **STAR STRAWBERRY** and **ELDORADO BLACKBERRY.** **REID'S NURSERIES, Bridgeport, Ohio.**



A Great Offer To Introduce **KING'S SEEDS** Northern Grown. World's Fair Medal. We give WATCHES, Books, Sewing Machines, and other premiums. Absolutely no money in advance, nor C. O. D. business. Simply write on postal "Please send me \$3 lot of Seeds, which I will try to sell for you, and if I fail will send money and unsold seeds in 60 days," and we will send the Seed, all charges paid by us. Say whether you want Flower or Vegetable Seeds. Boys and Girls, you can do this work. A nice Watch for selling \$3 collection. We refer to City Bank of Richmond. **T. J. KING CO., Seedsmen, Richmond, Va.**

**BUY NORTHERN GROWN SEEDS FARM SEEDS** Salzer's Seeds are Warranted to Produce. E. Walter, LeRayville, Pa., astonished the world by growing 250 bushels Salzer's corn, in Michigan, Wis., 173 bush. barley, and P. Simon, Randall, Iowa, by growing 196 bush. Salzer's oats per acre. If you doubt, write them. We wish to gain 150,000 new customers, hence will send on trial **10 DOLLARS WORTH FOR 10c.** 11 pkgs. of rare farm seeds, Hog Pea, Sand Vetch, 4c. Wheat, Sheep Rape, Jerusalem Corn, etc., including our mammoth Seed Catalogue, telling all about the \$400 gold prizes for best name for our new marvelous corn and oats, "Prodigies," also sample of same, all mailed you upon receipt of but 10c. postage, positively worth \$10, to get a start. 100,000 bbls. Seed Potatoes at \$1.50 a bbl. 35 pkgs. earliest vegetable seeds, \$1.00. Catalog alone, 5c. No. 70. Please send this adv. along.



#### NEW MULTIFLORA ROSES.

With seed of these new Roses, plants may be had in bloom in 60 days from time of sowing. Plant at any time. They grow quickly and flowers appear in large clusters and in such quantity that a plant looks like a bouquet. Perfectly hardy in the garden, where they bloom all summer. In pots they bloom both summer and winter. From a packet of seed one will get Roses of various colors—white, pink, crimson, etc.—no two alike, and mostly perfectly double and very sweet. Greatest of novelties. Seed 20c. per pkt., 3 pkts. for 50c.—or for 40c. we will send

1 pkt. New Multiflora Roses. All colors.  
1 " Chinese Lantern Plant. Magnificent.  
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**JOHN LEWIS CHILDS, Floral Park, N. Y.**



## The Veterinarian.

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the KANSAS FARMER. Give age, color and sex of animal, stating symptoms accurately, of how long standing, and what treatment, if any, has been resorted to. All replies through this column are free. In order to receive a prompt reply, all letters for this department should be addressed direct to our Veterinary Editor, DR. PAUL FISCHER, Professor of Veterinary Science, Kansas State Agricultural college, Manhattan, Kas.

**ACTINOMYCOSIS.**—I have a cow that has a lump on the upper part of her jaw, right at the side of her throat. It is hard. I don't know how long it has been there. I noticed it about one week ago. She is a good milch cow. Will be 6 years old in the spring. Color red.

Answer.—Remove the halter from your cow and secure her around the horns or in some other way that will prevent the rubbing over the tumor under her neck. Give her one drachm of potassium iodide in her drinking water three times a day for a week or ten days, and then report her condition to me.

**MARE SLOBBERS.**—I have a five-year-old mare that slobbers very badly when fed corn, especially if it is not shelled. She is not so bad when she has hay to eat with the corn. She is in good order but eats very slowly. First noticed her slobber when I fed her new corn this fall. I can see nothing wrong with her teeth.

Answer.—Your mare will recover from this condition without any medicine. The new corn is the principal cause. Feed less of it for a while and give other dry food with it.

**WARTS.**—I have a Short-horn bull. When I took him from the pasture his neck was almost entirely covered with warts, that are still spreading. They are bleeding and smell very offensive.

Answer.—Take arsenious acid, 4 drachms; caustic potash, 2 drachms; gum arabic, 3 drachms, and enough water to make a thick paste. Have this prepared by a druggist. Apply the paste in a thin layer over the entire surface of each wart, being careful to treat the warts only. Where the skin is treated this will also be removed. Have the druggist put the paste in a salt-mouthed bottle, and then use a spatula or knife-like device that you can whittle from a piece of wood, for applying it. If the first treatment is not effective, repeat it in a week. Before applying this remedy tie the animal in such a way that it will be impossible for it to lick the medicine with its tongue. The preparation is dangerously poisonous, and the operator should therefore also be careful not to have his fingers come in contact with it.

**UNHEALTHY HOGS.**—I had a number of hogs, three years ago, that were affected with a cough and hard breathing. Have been raising from the same lot ever since, except have changed males three times. In every case the young ones are troubled with the same disease, only worse. The hair is rough, skin red, appetite poor, cough and breathing very hard. Have lost a good many the last two years.

Answer.—The most profitable thing that you can do with those pigs is to get rid of them as soon as you possibly can. You ought to have done this years ago. With the proceeds you can buy a few healthy animals of good blood and then start over in the business. You can keep your new lot healthy and vigorous, and paying pork-producers by keeping them surrounded by the best hygienic conditions. This means pure food and water, clean, dry quarters, fresh air, sunshine and opportunity for exercise. In feeding your pigs, don't forget that there is such a thing as a balanced ration for a pig as well as for a milch cow. Avoid inbreeding.

**SPAVIN.**—Four-year-old filly lame in hind leg, without any apparent cause. Comes from stable somewhat stiff and lame. Sometimes gets worse with driving, sometimes better. Wears point of hoof off. Can see no spavin, but hock seems trifle large compared with the other at lower inside point. Remedies do no good. She does no hard work, is only driven to the buggy. No strain or kick or bruise of any kind.

Answer.—Your filly no doubt has a spavin. The fact that she is young and has never done any hard work nor been exposed to injuries of any kind to which the spavin might owe its origin, makes a prognosis rather unfavorable. It indicates that the animal is naturally predisposed to acquire this disease. As soon as you put her at hard work you will find that her malady will be aggra-

vated. Shoe her with long-shanked shoes and high heel corks. If she has not had corks on her shoes, then simply increase the length of the shanks and have them also increasing in thickness as they run back. Have the toe part of the hoof wall well trimmed away and save the quarters as much as possible. Sometimes blistering the inside of the hock where the spavin tumor is visible is very effective, but I would not advise it in this case.

**OPEN SORE—TARDY GRANULATIONS.**—What can I do for a cow that has an open sore on top of her back (to one side of backbone) and just in front of the hip bones, on the left side, and which refuses to heal up? It seemed to start from a scar during the summer and the flies bothered it until it was covered by a dark scab, which is broken every now and then, causing the sore to bleed quite a little and smell offensively, but it has not discharged any matter or pus at any time. I have treated it with blue vitriol, both in strong solution and in powdered form, but it seems to do no good.

Answer.—For an ordinary abscess or ulcer your treatment was perfectly proper. The only mistake you could have been making is that perhaps you applied your antiseptic in too concentrated form. The condition has now become chronic. Keep the raw surface absolutely clean by means of little wads of absorbent cotton; use two or three wads every time you clean it (twice a day), and of course never use the same cotton twice. After the cleaning process apply over the whole raw surface an 8 per cent. solution of sulphate of zinc; simply moisten the surface by means of a little cotton dipped into this solution.

**GARGET OR MASTITIS.**—Thoroughbred Jersey cow has garget. What is the cause and is there a remedy?

Answer.—This is an inflammatory disease of the udder, which may be brought on by various causes, chief among which are mechanical insults, so-called catching cold by being exposed to draughts of cold air, lying on cold, stony floors, improper milking, sudden changes in feed, etc. All these causes act most readily in cows fresh in milk. In most if not all cases, infectious micro-organisms lend a helping hand. The cardinal point in treatment is to begin treatment in time. Milk the animal three, or better, six times a day; milk gently but thoroughly, get out the last drop at every milking, knead and stroke the udder with your hand several minutes after every milking. Do this especially at those parts that seem knotty or a little firmer than the rest. If the udder is painful, apply spirits of camphor, gently but thoroughly rubbed in two or three times daily. If she is constipated give her laxative food, and if necessary to move her bowels well, give one pound of Glauber salts dissolved in lukewarm water as a drench. Keep her in a warm, well-ventilated stable and give her plenty of dry, soft bedding to avoid mechanical injuries when she lies down to rest.

### A New Egg-Producer.

With many years of experience and careful study, I have discovered by feeding sunflower seed to poultry it almost doubled their laying qualities. I prefer the New Mammoth Russian sunflower seed, which is a much larger seed and contains more egg-forming material than the common sunflower. For several years I have experimented with it on our Light Brahmas, and found that by feeding it the Brahmas laid equally as well as the Leghorns or any of the other smaller breeds. It much improves them in size if fed to chicks while growing. It can be grown much more cheaply than any other grain, with much less labor; and it will grow in any climate and on any soil. We have sold in the last few years hundreds of pounds of this New Mammoth Russian sunflower seed, and have received hundreds of testimonials saying that it is just as we claim, regarding ability to make hens lay and grow more rapidly than if fed on any other feed. The fanciers and farmers should not overlook this or anything else pertaining to their poultry, as they bring more money according to capital than anything else on the farm. If your poultry is kept up well, new blood added each year, the mites and hen lice kept out, fowls better protected from sudden changes of weather, and more care taken as to what you feed them, you will find on a year's income your poultry is the best payer on the farm; while it is just the opposite with farmers giving them no care whatever, letting them hunt whatever waste food they can find and hunt their own shel-

## Horse Owners! Use



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 CAUTERY 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.

ter, saying it won't pay to build a poultry house or get any new blood, as there is not enough money in poultry. Sure, not under such conditions, as such fowls will not lay many eggs nor weigh much when sold at market. Take my advice and try it for just one year, keeping an account of what you make on your poultry if proper care is given. We publish a book, price 15 cents, on the care and management of poultry in full, with many years of practical experience. Do not fail to get one of these before all are gone. JOHN BAUSCHER, Jr., Box 44, Freeport, Ill.

### Farmers' Institutes.

The Agricultural College has already assisted in a number of farmers' institutes in different parts of the State, this winter, and has promised assistance to several other institute organizations. The following are the places, dates and delegations from the faculty for which definite arrangements have been made at this writing:

February 1-2.—Chanute, Profs. Harper, Hitchcock.  
February 1-3.—Hiawatha, Prof. Faville.  
February 3-4.—Berryton, Profs. Burtis, Fischer.  
February 3-4.—Washington, Profs. Faville, Nichols.  
February 7-8.—Scott, Profs. Faville, Nichols.  
February 8.—Meriden, Profs. Cottrell, Walters.  
February 8-9.—Lakin, Profs. Graham, Harper.  
February 9.—Valley Falls, Profs. Cottrell, Walters.  
February 10.—McLouth, Profs. Cottrell, Walters.  
February 10-11.—Delphos, Profs. Otis, Weida.  
February 10-11.—Gardner, Profs. Faville, Fischer.  
February 10-11.—Haven, Prof. Campbell.  
February 10-11.—Seneca, Profs. Burtis, Clothier.  
March 3-4.—Arlington, Prof. Cottrell.

### FREE TO ALL WOMEN.

I have learned of a very simple home treatment which will readily cure all female disorders. It is nature's own remedy and I will gladly send it free to every suffering woman. Address MABEL E. RUSH, Joliet, Ill.

### How's This!

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure. F. J. CHENEY & CO., Proprietors, Toledo, Ohio.

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

WEST & TRUAX, Wholesale Druggists, Toledo, Ohio. WARDING, KINNAN & MARVIN, Wholesale Druggists, Toledo, Ohio. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price 75 cents per bottle. Sold by all druggists. Testimonials free.

### Home-Seekers' Excursions.

Tickets will be sold on the first and third Tuesdays of January, February and March via the Union Pacific to points in Missouri, Arkansas, Indian Territory, Oklahoma, Texas, Louisiana, Arizona and New Mexico, where the minimum round trip rate is \$7 or over, at one fare for the round trip, plus \$2. For exact territory and full information or tickets call on or address F. A. Lewis, City Ticket Agent, or J. C. Fulton, Depot Agent, Topeka.

The value of the stock daily confined in the school house demands that the latter be comfortable and attractive.

To Cure Constipation Forever. Take Cascarets Candy Cathartic. 10c or 25c. If C. C. C. fail to cure, druggists refund money.

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Southern California; the California Limited takes you there in 54 hours over the Santa Fe Route. Most luxurious service.

### The Shortest Route

To Southern California is the Santa Fe. Pullman palace and tourist sleepers and free chairs to Los Angeles daily.

## It Makes Pigs Healthy

to eat out of our cast-iron pig troughs.

TOPEKA FOUNDRY, Topeka, Kas., Manufacturers of castings in grey iron, brass or aluminum. Patterns, models and machine work.

**Wright's Condensed Smoke** for Smoking all Meats. Imparts a delicious flavor. Keeps Meat Sweet and free from Insects. A 75 cent bottle will smoke 250 pounds. Sold by all Druggists. Made by E. H. WRIGHT & Co., Ulysses, Neb.

## MONEY EVERY WEEK

and your expenses paid. It's a nice thing to have a steady income paid weekly like that. There are several ways of doing it. For instance, you might take an agency for "Spaulding Trees." We pay our men regularly every week and pay their expenses. We have best stock of all standard varieties of fruits, vines and berry plants, shade and forest trees, evergreens, etc., 600 acres of "Spaulding Trees"—40 year's experience. All stock is free from disease and warranted true to name. Send for catalogue, circulars, "Trade Getters" and special terms to agents. SPAULDING N. & O. CO., Box 10, Spaulding, Ill. (known reputation or Reference required.)

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Cheapest ever grown; BEST in the world; none other as GOOD; warranted to be by far the CHEAPEST. FREE. Prettiest book in all the world. SEEDS 1c and up for large packets. Send yours and neighbors names for my Beautiful Illustrated Catalogue. R. H. SHUMWAY, Rockford, Ill.

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WE no longer supply our seeds to dealers to sell again. At the same time, anyone who has bought our seeds of their local dealer during either 1896 or 1897 will be sent our Manual of "Everything for the Garden" for 1898 FREE provided they apply by letter FREE and give the name of the local merchant from whom they bought. To all others, this magnificent Manual, every copy of which costs us 30 cents to place in your hands, will be sent free on receipt of 10 cents (stamps) to cover postage. Nothing like this Manual has ever been seen here or abroad; it is a book of 200 pages, contains 500 engravings of seeds and plants, mostly new, and these are supplemented by 6 full size colored plates of the best novelties of the season, finally, OUR "SOUVENIR" SEED COLLECTION will also be sent without charge to all applicants sending 10 cts. for the Manual who will state where they saw this advertisement. Postal Card Applications Will Receive No Attention.

**PETER HENDERSON & Co.**  
35 & 37 CORTLANDT ST. NEW YORK

*Large School. Good Positions. Elegant Catalogue Free. Address L. H. STRICKLER.*



## MARKET REPORTS.

## Kansas City Live Stock.

KANSAS CITY, Jan. 24.—Cattle—Receipts since Saturday, 8,375; calves, 75; shipped Saturday, 1,851 cattle; no calves. The market was steady to 10c higher. The following are representative sales:

SHIPPING AND DRESSED BEEF STEERS.			
No.	Ave. Price	No.	Ave. Price
32.....	1.670 4.40	38.....	1.417 4.85
25.....	1.348 4.75	71.....	1.246 4.55
32.....	1.182 4.40	80.....	1.206 4.30
1.....	1.240 4.00	9 c&c.....	938 3.80

## WESTERN STEERS.

49 yrl.....	533 4.85	171.....	1.150 4.15
26.....	1.012 4.00	48.....	1.054 3.90
4.....	1.021 3.85	22.....	1.187 3.75
1.....	1.045 3.40	1.....	700 3.50

## NATIVE HEIFERS.

1.....	1.230 4.10	1.....	1.100 4.00
6.....	886 3.95	20.....	788 3.85
32.....	776 3.70	19.....	880 3.65
1.....	1.060 3.60	5.....	850 3.50

## NATIVE COWS.

3.....	940 3.75	1.....	1.360 3.50
11.....	1.155 3.25	4.....	890 2.90
1.....	1.080 2.60	1.....	870 2.25
1.....	810 2.00	1.....	890 1.75

## NATIVE FEDERS.

51.....	1.164 4.30	40.....	1.121 4.20
2.....	925 4.20	1.....	1.205 4.20
9.....	1.171 4.15	1.....	1.020 4.15
4.....	1.097 4.10	1.....	1.040 4.00

## NATIVE STOCKERS.

10.....	375 4.80	31.....	706 4.60
6.....	595 4.51	15.....	681 4.25
12.....	604 4.00	1.....	750 3.90
1.....	690 3.85	1.....	840 3.50

Hogs—Receipts since Saturday, 6,821; shipped Saturday, 352. The market was generally 5c higher. The following are representative sales:

48.....	162 3.80	53.....	239 3.80	28.....	246 3.80
86.....	233 3.77 1/2	70.....	236 3.77 1/2	43.....	251 3.77 1/2
73.....	222 3.75	85.....	230 3.75	74.....	180 3.75
82.....	198 3.75	83.....	201 3.72 1/2	84.....	221 3.72 1/2
65.....	206 3.70	62.....	187 3.70	81.....	215 3.70
65.....	247 3.67 1/2	66.....	278 3.67 1/2	47.....	317 3.67 1/2
54.....	319 3.65	60.....	241 3.65	70.....	236 3.65
78.....	196 3.65	52.....	316 3.65	71.....	178 3.6 1/2
91.....	160 3.62 1/2	28.....	279 3.62 1/2	92.....	168 3.60
69.....	193 3.60	77.....	169 3.57 1/2	109.....	168 3.57 1/2
97.....	177 3.57 1/2	58.....	229 3.55	53.....	364 3.55
100.....	169 3.55	71.....	152 3.52 1/2	77.....	163 3.52 1/2
57.....	340 3.50	48.....	172 3.50	107.....	140 3.50
69.....	162 3.50	1.....	350 3.50	100.....	127 3.47 1/2
17.....	106 3.35	74.....	94 3.35	47.....	116 3.35
19.....	120 3.37 1/2	44.....	90 3.30	9.....	106 3.30
108.....	131 3.25	3.....	516 3.25	1.....	470 3.25
2.....	310 3.15	1.....	390 3.05	1.....	390 3.00

Sheep—Receipts since Saturday, 2,416; shipped Saturday, none. The market was strong to 10c higher. The following are representative sales:

244 Col. lbs.	62 35.25	123 nat. lbs.	72 35.25
18 west.....	75 4.50	1,069 O. M. sh.	79 4.40
839 T. sh. & yr	74 4.50	10 nat. yrl.	85 4.25
193 W. sh.	118 4.15	8 culls.....	65 2.60

## St. Louis Live Stock.

ST. LOUIS, Jan. 24.—Cattle—Receipts, 3,000; market steady to strong; native shipping steers, \$4.25@5.30; butcher steers to dressed beef grades, \$4.00@4.85; stockers and feeders, \$3.00@4.50; cows and heifers, \$2.00@4.20; Texas and Indian steers, \$3.25@4.30; cows and heifers, \$2.25@3.25.

Hogs—Receipts, 3,000; market 5c higher; yorkers, \$3.50@3.70; packers, \$3.65@3.75; butchers, \$3.70@3.80.

Sheep—Receipts, 300; market steady; native muttons, \$3.85@4.60; lambs, \$5.00@5.85; Texas muttons, \$3.80@4.50.

## Chicago Live Stock.

CHICAGO, Jan. 24.—Cattle—Receipts, 16,500; market steady to stronger; beefs, \$3.90@5.40; cows and heifers, \$2.10@4.50; Texas steers, \$3.50@4.30; stockers and feeders, \$3.35@4.60.

Hogs—Receipts, 29,000; market active and 5c higher; light, \$3.60@3.80; mixed, \$3.65@3.85; heavy, \$3.55@3.85; rough, \$3.55@3.65.

Sheep—Receipts, 18,000; market, firm; native, \$3.00@4.50; western, \$3.50@4.40; lambs, \$4.25@5.70.

## Chicago Grain and Produce.

	Jan. 24.	Opened	High'st	Low'st	Closing
Wht.—Jan.....	94 1/2	95	94 1/2	95	
May.....	92 1/2	93 1/2	92 1/2	93 1/2	
July.....	84 1/2	85	84 1/2	85	
Sept.....	78 1/2	78 1/2	77 1/2	77 1/2	
Corn—Jan.....	29	29 1/2	28 1/2	29	
May.....	30	30	29 1/2	30	
July.....	22 1/2	23 1/2	22 1/2	23 1/2	
Oats—Jan.....	23 1/2	23 1/2	23 1/2	23 1/2	
May.....	9 85	9 90	9 82 1/2	9 90	
Lard—Jan.....	4 72 1/2	4 75	4 72 1/2	4 75	
May.....	4 82 1/2	4 85	4 82 1/2	4 85	
Ribs—Jan.....	4 85	4 87 1/2	4 82 1/2	4 87 1/2	
May.....	4 85	4 87 1/2	4 82 1/2	4 87 1/2	

## Kansas City Grain.

KANSAS CITY, Jan. 24.—Receipts of wheat here to-day were 97 cars; a week ago, 108 cars; a year ago, 53 cars.

Sales by sample on track: Hard, No. 1, nominally 86c; No. 2 hard, 1 car 60 1/2-lb. 86 1/2c, 1 car 60-lb. 86c, 1 car 59-lb. 86c, 3 cars 59-lb. 85 1/2c, 1 car 58 1/2-lb. 85c, 2 cars 58-lb. 84 1/2c, 2 cars 58-lb. 84c, 5 cars 59-lb. to arrive 85c, 2 cars 59-lb. mixed 86; No. 3 hard, 2 cars 57 1/2c-lb. 84c, 2 cars 57 1/2-lb. 83 1/2c, 3 cars 57-lb. 83c, 1 car 56 1/2-lb. 82 1/2c, 2 cars 56-lb. 82 1/2c, 1 car 56-lb. 82c, 1 car 55 1/2-lb. 81c; No. 4 hard, 1 car 54 1/2-lb. 81c, 1 car 54-lb. 80 1/2c, 1 car 54-lb. 80c; rejected, nominally 76@78c. Soft, No. 1, nominally 95c; No. 2, nominally 94@95c; No. 3, 1 car 58-lb. 92c; No. 4, nominally 87@90c; rejected, nominally 82@85c. Spring, No. 2, 2 cars 58-lb. 84 1/2c; No. 3, 1 car 55-lb. red 81c, 1 car 55-lb. white 81c; rejected, nominally 75@77c.

Receipts of corn here to-day were 167 cars; a week ago, 217 cars; a year ago, 203 cars.

Sales by sample on track: Mixed, No. 2, 8 cars yellow 24 1/2c, 9 cars 24 1/2c, 4,000 bushels 24 1/2c, 2 cars 24 1/2c; No. 3, 1 car 24 1/2c, 1 car 24c; No. 4, nominally 23 1/2c; no grade, nominally 22c. White, No. 2, 6 cars 25 1/2c, 1 car special 25c, 1 car special 25 1/2c; No. 3, nominally 25@25 1/2c, 1 car special 25 1/2c; No. 4, nominally 24 1/2c.

Receipts of oats here to-day were 32 cars; a week ago, 21 cars; a year ago, 14 cars.

Sales by sample on track: Mixed, No. 2, nominally 23c; No. 3, nominally 22 1/2c, 1 car light 22c; No. 4, nominally 21@22c. White, No.

2, nominally 23 1/2c; No. 3, nominally 23c; No. 4, nominally 23 1/2c.

Rye, No. 2, 1 car 42 1/2c; No. 3, nominally 41 1/2c; No. 4, 1 car, nominally 40 1/2c.

Receipts of hay here to-day were 30 cars; a week ago, 28 cars; a year ago, 51 cars. Quotations are: Choice prairie, \$7.00@7.50; No. 1, \$6.25@6.75; No. 2, \$6.00@6.25; No. 3, \$6.00@5.50; choice timothy, \$8.50@9.00; No. 1, \$7.50@8.25; No. 2, \$6.75@7.25; choice clover, mixed, \$6.75@7.00; No. 1, \$6.25@6.75; No. 2, \$5.50@6.00; pure clover, \$5.50@6.50; packing, \$4.50.

## Kansas City Produce.

KANSAS CITY, Jan. 24.—Butter—Extra fancy separator, 17c; firsts, 14c; dairy, fancy, 14c; choice, 12c; country roll, 10@10 1/2c; store packed, 9@10c; fresh packing stock, 8c.

Eggs—Strictly fresh, 13c per doz. Poultry—Hens, 6c; broilers, 8c; roosters, 12 1/2@15c each; ducks, 6 1/2c; geese, 5@5c; turkeys, 8 1/2c; pigeons, 60c per doz.

Apples—Jonathan, \$5.00@6.00 in a small way; Bellefleur, in car lots, \$4.50@5.00 per bbl.; fancy Missouri Pippin, \$3.75@4.00; fancy Ben Davis, \$2.75@3.25; Winesaps, \$3.75@4.25; Willow Twigs, \$3.75@4.00; Huntsman Favorite, \$4.00. In a small way varieties are selling at 40@50c per half bu.

Vegetables—Cabbage, northern stock, \$1.25 per 100-lb. crate. Beets, 25@40c per bu. Green and wax beans, \$2.50@3.00 per crate. Onions, new Spanish, \$1.00@1.25 per crate; others, 75@80c per bu.

Potatoes—Greasey stock, fancy Rural, 75c per bu.; choice Pearl, 68c per bu.; Iowa, 55@60c. Sweet potatoes, 50@60c per bu.

McINTOSH & PETERS,  
Live Stock Commis'n Merchants

252-253-254 Live Stock Exchange,  
KANSAS CITY, MO.

Correspondence and consignments solicited. Market reports furnished free on application.

KNOLLIN & BOOTH,  
Sheep Commission Merchants.

366 Live Stock Exchange,

KANSAS CITY, MISSOURI.

We want your consignments or orders for sheep. If you want to buy or sell, write us.

## WANTED---John Jackson, formerly a

Great Hampton Row, Birmingham, England, who many years ago went to America under the name of James Johnson and traded for some years as cattle dealer in Kansas City. Jackson (if alive) is now entitled to property in England. Information to William Jackson (brother), Shakespeare Villa, Sparkhill, Birmingham, or to Thurstfield & Messiter, Solicitors, Wednesbury, England.

## HOUSE PAINTS

Victory Implement and Wagon Paints, Nonparel Carriage Paints.

Home-made and the best made for all purposes. Window and Picture Glass, Hot-bed and Greenhouse Glass.

If your dealer does not carry these goods send direct to CUTLER & NEILSON PAINT AND COLOR CO., Manufacturers and Jobbers, N.W. Cor. 11th and Mulberry Sts., Kansas City, Mo.

## Do You Love Music?

If so, secure one of the latest and prettiest Two-Steps of the day, by mailing TEN CENTS (silver or stamps) to cover mailing and postage, to the undersigned for a copy of the

## "BIG FOUR TWO-STEP."

(Mark envelope "Two-Step.")

We are giving this music, which is regular 50-cent sheet music, at this exceedingly low rate, for the purpose of advertising and testing the value of the different papers as advertising mediums.

E. O. McCORMICK, Passenger Traffic Manager "Big Four Route," CINCINNATI, O.

Mention this paper when you write.

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Days are  
Sunniest

And most captivating—  
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The California Limited, via  
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Sell on commission horses and mules of all grades, singly or car-load lots. Barns also at Fort Scott, Kas. where we carry from 300 to 600 head of horses and mules. Regular auction sales every Tuesday and Thursday. Private sales every day. Special attention to the selection of breeding stock and well-broken family, saddle and draft horses. We are prepared to fill orders promptly by wire or mail. Liberal advances on consignments. Condition of market furnished on application.

## Kansas City Stock Yards

are the most complete and commodious in the West

and second largest in the world. The entire railroad systems of the West and Southwest centering at Kansas City have direct rail connection with these yards, with ample facilities for receiving and reshipping stock.

	Cattle and Calves.	Hogs.	Sheep.	Cars.
Official Receipts for 1897.....	1,921,962	3,350,796	1,134,236	123,047
Slaughtered in Kansas City.....	965,287	3,084,823	805,288	
Sold to feeders.....	665,615	841	151,389	
Sold to shippers.....	216,771	263,592	91,578	
Total Sold in Kansas City 1897.....	1,847,673	3,348,556	1,048,233	

CHARGES: YARDAGE—Cattle, 25 cents per head; Hogs, 8 cents per head; Sheep, 5 cents per head. HAY, 80c per 100 pounds. CORN, 60c per bushel. OATS, 60c per bushel.

NO YARDAGE CHARGED UNLESS THE STOCK IS SOLD OR WEIGHED.

C. F. MORSE, E. E. RICHARDSON, H. P. CHILD, EUGENE RUST,  
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will distribute Beet, Cabbage, Onion, Turnip, Millet, and all such Seeds with absolute regularity. It is so simple that a child can use it, and it will save you time and seeds, as well as give you healthier plants by distributing the seed accurately, and the work of sowing is like play.

THE "ACME" DRILL sent you, all charges paid by us, with \$2.00 worth of Seeds for \$2.00, the price of the Seed alone, or with

KANSAS FARMER ONE YEAR FOR \$2.70

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## The Poultry Yard

### Saline County Poultry, Pigeon and Pet Stock Show.

Editor Kansas Farmer:—Our third annual exhibition, which closed December 20, was by far the finest of our efforts. Perceptible improvement of our stock from year to year is the characteristic of our work. Hon. Theo. Sternberg was our judge this year, and is to be at our fourth show, which convenes the week beginning Monday, December 12, 1898.

Following is the list of awards:

S. C. B. Leghorns.—W. W. Melott, first pen 188%; trio, pair, and cockerel 94%. E. Goodall, second pen 188, trio, pair, and cockerel 94. A. J. Kerns, third pen 187 7-16, trio and pair. W. W. Melott, A. J. Kerns and E. Goodall (tie), first pullet, score 95. R. A. Mayo and E. Goodall (tie), second pullet, 94%. A. J. Kerns, third pullet, 94%. W. W. Perry, first hen 92%, third cockerel 93%, second cock 89%.

Buff Leghorns.—H. N. Gaines, first pen 183%, trio, pair, and cockerel 90%; first pullet 94, second pullet 93. H. Tilgner, second cockerel 89%.

S. C. White Leghorns.—A. J. Kerns, all premiums.

S. C. B. Minorcas.—W. M. Briggs, first pen 184%, trio, pair, and cockerel 92%; second hen 91%, second cockerel 92, second pullet 92%, third hen 91%, third pullet (tie) 92%. A. J. Kerns, first hen 92%, second cock 88%, third pen 177 15-16, trio and pair. Dr. N. D. Tobey, Assaria, Kas., first pullet 92%, third cockerel 91%, third pullet (tie) 92%, second pen 183%.

Blue Andalusians.—E. A. Benjamin, first pen 185, trio, pair, and cockerel 92%, first hen 92%, second cockerel 92%, second hen 92%, first cock 90%. J. D. Martin, first pullet 92%, second pullet 91%, second pen 182 9-16, third cockerel 91%, third pullet 91%.

Barred Plymouth Rocks.—Mrs. C. E. Anderson, Salina, Kas., first pen 184 11-16, trio and pair, second cockerel (tie) 92%, first pullet 93, third cockerel 92. Dr. N. D. Tobey, Assaria, Kas., first cockerel 93%, second pen 183 3-16. T. R. Divilbiss, second pair and trio, second cockerel (tie) 92%, third pen (tie) 181 11-16. G. W. Berkley, third trio, third pair (tie), third pen (tie) 181 11-16, third pullet (tie) 91%. J. W. Blair, third pair (tie), third pullet (tie) 91%. Mrs. W. G. Martin, first hen 93, second cock 89%.

White Plymouth Rocks.—Mrs. W. W. Melott, first pen 186%, trio, pair and cockerel 93%, second pullet (tie) 94%, third pullet 94, second cockerel 93. J. W. Blair, first pullet 94%, third trio and pair. R. A. Mayo, second pen 185%, trio and pair, second pullet (tie) 94%, third cockerel 92%. John Bennett, second cock 89%.

Golden Seabright Bantams.—W. W. Melott, first hen, second pullet.

Light Brahmas.—Harry Rankin, Solomon, Kas., first cock 91%, first hen 92%, first pair and trio. James Nourse, Ellsworth, Kas., first pullet 91%, third cockerel 86%, second pen 176 9-16, third trio, pair, and pullet 90%.

Buff Cochins.—C. L. Wright, second hen 87%, W. C. Sherrill, second cockerel 89%, second pullet 89%, second pen 178, second trio and pair. J. W. Blair, third pen 173 1-16, third trio and pair.

W. C. B. Polish.—All premiums to John Bennett.

Capons.—All premiums to Ed. Latz, Salina.

Red-Caps.—C. L. Wright, second and third pullets and all specials.

Cornish Indian Games.—W. M. Briggs, first hen 94%, second hen 91%, third hen 91%, and all specials.

Pit Games.—E. Goodall, all firsts; Frank White all seconds.

Houdans.—E. C. Mull, first hen 94%, second hen 92%.

Pekin Ducks.—R. A. Mayo, first pair. T. R. Divilbiss, second drake. John Bennett, third drake.

G. W. Berkley won all firsts, on pigeons and pet stock, rabbits and ferrets. John Buchi, second pigeon display. Jos. Heenan, second rabbit display.

Black Langshans.—H. R. Sherman, Trenton, Kas., all premiums.

White Guineas.—John Bennett, all premiums.

M. B. Turkeys.—J. R. White, first pen, trio, pair, and cock 98, first hen 97%, first pullet 98%. Mrs. C. E. Anderson, second trio, pair, and cock 97%.

The cash premium-winners are as follows:

On B. P. Rocks.—Dr. N. D. Tobey, Assaria, Kas., first cockerel and second pen. T. R. Divilbiss, the second cockerel; second pair and trio; tie third pen. Mrs. C. E. Anderson, first pullet, pair, trio and pen; tie second cockerel. James Nourse, Ellsworth, Kas., third cockerel.

J. W. Blair, tie second pullet, tie third pair. G. W. Berkley, third trio, tie second pullet, tie third pair, tie third pen. David Enoch, third pullet.

On White Plymouth Rocks.—Mrs. W. W. Melott, first cockerel and first pair, tie second pullet. R. A. Mayo, tie second cockerel, second pullet, second pair. J. W. Blair, third cockerel, first pullet. O. C. Tobey, third pullet, third pair.

On Light Brahmas.—James Nourse, Ellsworth, Kas., second pen, trio and pair.

On Buff Cochins.—W. C. Sherrill, second cockerel, pullet, pair, trio and pen. C. L. Wright, third cockerel, third pullet. J. W. Blair, third pair, trio and pen.

On S. C. B. Leghorns.—W. W. Melott, first cockerel, first pen, trio and pair, tie first pullet. E. Goodall, second cockerel, pen, trio and pair, tie first pullet. A. J. Kerns, third pen, trio and pair, tie first pullet. R. A. Mayo, second pullet. J. A. Mayo, third pullet.

On Buff Leghorns.—H. N. Gaines, first pen, trio and pair.

All honors to the Reliable Incubator and Brooder Co., of Quincy, Ill., for incubator and brooder display.

We had 113 entries and over 600 specimens, all told.

Immediately after our exhibition, we elected officers for the work of our fourth annual show, as follows: H. N. Gaines, President; E. A. Benjamin, Vice President; W. C. Sherrill, Secretary; A. J. Kerns, Treasurer; O. C. Tobey, Superintendent and General Manager.

O. C. TOBEY, Superintendent.

Salina, Kas.

### Poultry Notes.

Hens three years old are not profitable to keep, except they are of the small laying varieties.

Changing quarters during the laying season will check egg-production. There is nothing gained by it if the fowls are always accommodated with clean quarters.

The Java fowls are the same size, shape, and about the general make-up of the Rocks, but they mature earlier, commence to lay earlier, and lay more eggs.

Give your fowls lime. Bury a few large lumps of fresh lime in the moist earth where the hens frequent. Allow the lime to project a little above the surface to attract them. Lime in the shape of old plaster is also excellent.

Fresh cut bone for an occasional light feed is very good indeed, but do not get too much excited about it as entering largely into food for fowls. Don't buy too heavily of bone meal or granulated bone; you can scare up just as good food at home.

Do not forget that the hatchet is the best remedy for very sick fowls, but do not apply it in very mild cases. A little cold in fowls may terminate in roup, but a free use of coal oil applied to the nostrils, mouth and throat will usually keep it in check.

The male birds are half the flock. Scarcely any one now thinks of going through the poultry season without stocking up with thoroughbred roosters of the variety they prefer, or the different varieties, if they prefer an assortment. It is truly wonderful the change that can be made on any flock thus.

The droppings of poultry should not be allowed to accumulate and remain in their quarters longer than a few days, and never over one week. After cleaning and sweeping out, have a box containing a little air-slaked lime, and with your broom dipped into the lime sweep over the floor, dropping-boards and everywhere any dampness shows itself. But do not use the lime too heavily.

It requires different arrangements for the different varieties of fowls. It is cruel to make large breeds roost up on high roosts. Indeed, they are better without any kind of perches at all. A soft bed of clean straw is the proper roosting place for the large breeds. When but few hens are kept together for laying purposes of almost any variety, they will do better, keep warmer and produce more eggs by the latter method of roosting.

"I have been a victim to terrible headaches," writes C. F. Newman, Dug Spur, Va., "and have never found anything to relieve them so quickly as Ayer's Pills. Since I began taking this medicine the attacks have been less frequent, till they have ceased altogether."

### No-To-Bac for Fifty Cents.

Guaranteed tobacco habit cure, makes weak men strong, blood pure. 50c, \$1. All druggists.

Send \$1.25 for Kansas Farmer one year and book, "Samantha at Saratoga."

## "CALL A SPADE A SPADE."

Some People too Modest to Confide in their Physician—A Woman Cured of a Serious Disease by a Certain Method, the Only Drawback of which was, it "Made Her Too Fat."

From the Evening News, Detroit, Mich.

The doctor came in haste and found his patient again in great agony from a splitting headache. It was his fifth call on the same patient, and each time to treat the same trouble. With a suspicion that his diagnosis was incorrect and that he was treating a symptom and not the disease, he said to her: "Madam, it is useless for me to visit you again. You are keeping from me facts and symptoms which it is necessary I should know. The patient finally acknowledged that, through a false modesty, she had not told him all. Then she told how she had suffered from female weakness but had kept it from him—too modest to speak. The old doctor was disgusted at such prudishness, but when he knew the facts, cured her easily and quickly.

The following case differs from the above, only in the fact that the patient is not afraid to speak, and to "call a spade a spade."

"Words fail to describe the suffering I endured before I used Dr. Williams' Pink Pills for Pale People," said Mrs. Alexander B. Clark, of 417 Michigan Avenue, Detroit, Mich. "For five years I have suffered from ovarian troubles, and was confined to my room for months at a time. I have undergone two operations for this trouble at the hospital, and seemed to grow worse instead of better. I had the best doctors and the best nursing, but for nearly five years I was not free for one single day from the most fearful headaches and intense twitching pains in my neck and shoulders.

"You would scarcely believe, to look at me now, that for about three days every week for nearly six years, I had to stay in bed. Those headaches would come on me every week regularly. First I would notice black spots before my eyes, and then I would go blind, and send for the doctor.

"At first they would treat me for indigestion and dyspepsia, then finally acknowledge that something else caused the trouble. During these spells I was so nervous that I could not

bear to have my husband walk across the floor, and as the doctors said there was no medicine that would reach my trouble, I consented to the operations, which left me worse off than I was before.

"In January of this year there was an article in the Evening News about the druggists that sold Dr. Williams' Pink Pills in Detroit. I told my husband I was going to try them and he said, 'try anything.'

"The next morning I went into Murphy Brothers' drug store and bought a box of Dr. Williams' Pink Pills. Mr. Murphy said he had a big sale for the pills and personally knew many people who had been helped by them. I took the pills as directed, but was not helped a bit, and I told Mr. Murphy so, but he suggested that I give them a better trial. Before I had finished the second box I began to feel better and went down and bought a dozen boxes. When I had taken six boxes my headaches were gone, but I continued using the pills until I had taken the twelve boxes.

"Just think what I have suffered by operations and vile medicines, when a simple remedy cured me.

"There is only one thing against Dr. Williams' Pink Pills for Pale People," continued Mrs. Clark, "they made me fat. Since I commenced taking them, in January, I have gained twenty-six pounds. I remember the many times when my friends came to see me, when I was so thin and weak, that they expected to hear that I was dead the next week. To-day I am perfectly well, and never felt better in my life, and it is all due to Dr. Williams' Pink Pills for Pale People."

All the elements necessary to give new life and richness to the blood and restore shattered nerves are contained in a condensed form in Dr. Williams' Pink Pills for Pale People. They are sold in boxes (never in loose form, by the dozen or hundred) at 50 cents a box, or six boxes for \$2.50, and may be had of all druggists, or directly by mail from Dr. Williams' Medicine Company, Schenectady, N. Y.

\$10 CASH (100 Egg Size) ON TRIAL \$11. "2 hatches from \$10 machine, 98 and 99 chicks from 100 eggs each." Mrs. F. Vollrath, Lockport, Ill. Send 4c for No. 26 catalogue of \$5 ones. Buckeye Incubator Co., Springfield, O.

\$5 Hand Bone, Shell, Corn & Grit Mill for Poultrymen. Dally Bone Cutter. Power Mills. Circular and testimonials free. WILSON BROS., Easton, Pa.

THE IMPROVED VICTOR Incubator Hatches Chickens by Steam. Absolutely self-regulating. The simplest, most reliable, and cheapest first-class hatcher in the market. Circulars FREE. GEO. ERTEL CO., QUINCY, ILL.

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A SURE WINNER. OUR SUCCESSFUL INCUBATOR will prove it if you use it. Send 6c for new 128 page catalog and study the merits of our machines. Has valuable poultry culture generally. We manufacture a greater variety of Incubators and Brooders than any other firm. Sizes 50 to 800. Prices from \$2.00 to \$70.00. DES MOINES INCUB. CO. Box 83 DES MOINES, IOWA.

THE HATCHING HEN HAS LOST HER OCCUPATION and in the production and brooding of chicks she has been supplanted by the better and every way RELIABLE INCUBATORS AND BROODERS. They Hatch and Brood when you are ready. They don't get lousy. They grow the strongest chicks and the most of them. It takes a 224 page book to tell about these machines and our Mammoth Reliable Poultry Farms. Sent by mail on receipt of 10 cents. Send for it now. Reliable Incubator and Brooder Co., Quincy, Illinois.

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## Special Want Column.

"Wanted," "For Sale," "For Exchange," and small or special advertisements for short time, will be inserted in this column, without display, for 10 cents per line, of seven words or less, per week. Initials or a number counted as one word. Cash with the order. It will pay. Try it!

**SPECIAL.**—Until further notice, orders from our subscribers will be received at 1 cent a word or 7 cents a line, cash with order. Stamps taken.

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**TO EXCHANGE.**—A few good Poland-China and Large English Berkshire young boars and gilts for alfalfa, Kaffir corn and cane seed. Give price of seeds. S. F. Glass, Marion, Kas.

**FOR SALE OR TRADE.**—One fine black jack, 4 years old; also 160 acres, farm in Pratt county, Kas. Address, Thomas Brown, Box 55, Palmer, Kas.

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**WANTED.**—Buyers for bred sows and gilts, Berkshires and Poles, all pure-bred. Priced to sell them. O. P. Updegraff, North Topeka, Kas.

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**JACK FOR SALE.**—Black with mealy points, fifteen hands one inch high, heavy bone, 7 years old; all right. Will be sold at a bargain. Porter Moore, Parsons, Kas.

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**SUNFLOWER HERD DUROC-JERSEYS.**—For sale, choice pigs, September farrow. A. D. & H. L. Perlin, Prescott, Linn county, Kansas.

**BABY PIG TEETH EXTRACTORS.**—35 cents by mail. Address M. H. Alberty, Cherokee, Kas.

**FOR SALE.**—Imported English Shire stallion, weighs 1,800, jet black, gentle disposition. Will trade for stock. J. W. Shackleton, Walnut, Kas.

**FOR RENT.**—Eighty-acre fruit, truck and poultry farm, five miles from Topeka. Two-story poultry building, fifty feet long, equipped with hot water apparatus. For particulars apply to Claton Hummer, Grantville, Kas.

**FOR SALE.**—Thirteen fine Poland-China boars. Call on or address H. W. McFee, Topeka, Kas. (Farm three miles west of Kansas avenue.)

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**FRUIT TREES.**—In surplus! That must go! 100,000 Apple, Peach, Cherry, Plum and Pear. First-class, healthy, true to name and cheap. For thirty days orders will be accepted for spring shipment at less than half usual prices. Agents wanted. List free. S. J. Baldwin, Seneca, Kas.

**BARRED AND WHITE PLYMOUTH ROCKS.**—White and Silver Wyandottes, White Holland Turkeys, White Pekin Ducks and White Guineas. Stock and Eggs for sale. Porter Moore, breeder and judge, Parsons, Kas.

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**FOR SALE.**—A grandson of the \$5,100 Kiever's Model, also twenty fall and spring boars by Kiever M. 18168 S.; the \$555 Hadley Jr. 13314 S.; Upright Wilkes 13246 S.; and J. H. Sanders Jr. 13729 S. Ten extra fine gilts. J. R. Killough & Sons, Ottawa, Kas.

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CHIEF I KNOW 11992 S.

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**COL. C. A. EWING,**

W. N. Winn & Son, Kirkpatrick & Son, Goode and Bollin will have a Grand Public Sale at Kansas City day before mine—February 7.

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**CLIFTON GEORGE, Lathrop, Mo.**



## The Apiary.

Conducted by A. H. DUFF, Larned, Kas., to whom inquiries relating to this department should be addressed.

### Winter Care of Bees.

Bees require but little care through the winter season, if proper attention is given them at the right time during the fall months. Successful wintering of bees depends to a great extent on the right kind of fall management, and all work necessary for their welfare should be done before winter comes on. It often occurs that colonies run short of stores during winter, or more often in early spring before winter is fairly gone. This will happen even if we are very careful to furnish the required amount of stores the fall previous. We can safely examine bees during winter, if we select a day that is warm and the bees are flying freely, but not otherwise. It will be very damaging to them if we molest them in cold weather, and they should be free from any disturbance at all times during the winter, except on such days as mentioned above. Sirup-feeding, which is usually done in the fall of the year, will not answer for winter feeding. Such treatment as is just the right thing in autumn will destroy bees in winter, and hence a different manner of management must be adopted. Upon finding colonies short of provisions we can supply them with feed in the shape of candy. This is made from granulated sugar, which is the only sugar fit for the purpose. The sugar must be melted and boiled as in ordinary sugar-making and molded into cakes or slabs, which may be placed in the hives where the bees have access to it. This candy may be molded in the ordinary frame and hung in the hive, the same as an ordinary frame of honey. This makes a good and healthy diet for bees and is pronounced by many as superior to their natural stores.

The entrances to hives should be contracted during winter. We have experimented in this line considerable, and our observations are such as to convince us that bees do not require the full-sized entrance to the hive for ventilation in winter, even if the colony is a very strong one. An entrance three inches long and three-eighths of an inch wide gives me better results. It is very important to have an alighting place convenient for the bees to enter the hive, and an east or south front is desirable. Bees should seldom ever take a fly while there is much snow on the ground, and if they are in proper condition they will not do it. They are liable to do this when wintered in thin, unprotected hives, on bright days when the sun warms the hives, and this of itself well pays for chaff hive protection. Bees may be prevented from doing this by shading the hives, and especially the entrance. Heavy snow should be allowed to remain about the hives just as it fell, even if it cover the hives totally. It is a mistake to shovel it away or open the entrance. Bees will not suffocate in a snow-bank. When bees are well protected in chaff hives they will endure confinement much longer than if left in ordinary hives.

### Entrances to Bee-Hives.

Large numbers of bees perish in early spring when the weather is cool, when the hives are so arranged that the bees do not have easy access to them. This is always the case when hives are set up on high benches, or arranged so that the entrance is too high from the ground. It is best in this respect to have hives sitting close to the ground, so the bees when coming in heavy laden with honey or pollen can readily enter the hives by crawling from the ground into the hive. Very sudden changes of weather, or the hives becoming shaded on a cool day when the bees are working, very often produce quite a loss thus, and at a time when the bees are few in number, so that but a small amount lost reduces them, and the effects are very noticeable. Bees, when breeding rapidly, will venture out in bad weather when they have been confined a day or two, and their greatest desire seems to be for water. Bees require water when rearing brood. They may have stored away a reserve of both pollen and honey for the purpose, but if they are not gathering new honey which contains considerable water, and enough to answer the purpose of brood-rearing, they must have water to dilute the old honey in the hive in order to prepare food for the young bees. This is very noticeable after the honey flow has ceased and the bees are left with a large amount of brood. In such cases they make a great rush to the watering-places.

Entrances to hives in early spring may be enlarged and will until you get to write for them at 00. BOX 46, QUINO

not be large, except in cases of very strong colonies. Bees cannot be properly accommodated with the same size of entrance the year around. In summer, when the colony is very strong, they require a large entrance, and in winter and early spring it should be contracted. Usually the entrance to hive is made about twelve inches long and three-eighths of an inch wide. This is large enough at any time, but it is better contracted to from one-half to one-third, owing to strength of colony, and time of season. A weak colony receives too much ventilation in early spring with a full-size entrance, and indeed it is an exceptional colony only that needs it.

The bottom-board of a hive should extend three or four inches in front for an alighting place for the bees, and in front and on each side of this the earth should be banked up on a level with the same, and sloped back some distance on the ground. The bottom-board should rest on cleats nailed on the under side at each end of the same, some three or four inches high, but should not be any higher than this, and less will answer, as about all that is intended is to keep the bottom from the ground merely.

### Feeding Bees in Early Spring.

A good many persons do not think of feeding their bees, or even looking after them to see if they need it. Perhaps most colonies do not need it, but many of them do, and all such will either die outright or they will come through the spring in a very weak condition, and will be of little benefit all summer. So that it is surely very costly negligence to thus handle them. Where bees will live at all, they are as profitable as anything that can be kept, and it is a safe investment to feed them if they stand in need of it. Bees are very susceptible to feeding, and they will store away in their combs at one feeding to last them several days, or even weeks, if the colony is a strong one. As the best time of the day to feed bees is in the evening just before dark, I have often given strong colonies as much as ten pounds of sirup at one time, and during the night they would store it all away in the combs.

A colony of bees, to be in the best condition at this season of the year, should have at least ten pounds of sealed honey in the hive, and a good sprinkling of unsealed for present use. Feeding is much better done by feeding but little at a time. This is of more benefit than to feed so much at one time. Feeding a little every day imitates a flow of honey, and they respond to it by breeding more rapidly, and a colony thus treated will invariably come out stronger in bees than those that have been fed so heavily all at once. But rather than let them suffer for it, any kind of feeding is better than none at all. In many instances, four or five pounds of sugar fed at the proper time will save the loss of a colony, or save it from being left in a crippled condition for the season, and every pound of sugar thus fed will give in return ten pounds of honey, and in many cases fifty.

If bees are properly cared for and attended to as they should be, there will be but little feeding to do. The right time to look after this is during the fall previous, and, when they are fixed up for winter, to see that they have the required amount, which should be about thirty pounds of good sealed stores, with proper protection in the way of winter hives. When properly handled in this manner, ten pounds of honey will usually carry them through until the first of April. After this period and on until the honey flow usually sets in, they will consume more honey than they will the entire winter. This is due to the fact that they use it in rearing their brood, and this is the most important time to be particular to see that they are not crippled and prove unprofitable to us by a lack of the necessary provisions.

We have frequently given directions how to prepare food for bees and the manner of feeding them, which may be found in back numbers of the Kansas Farmer.

"I always let a cold go as it comes," says one, which means that he overworks the system in getting rid of a cold rather than assist it by using Dr. Bull's Cough Syrup.

### Beauty Is Blood Deep.

Clean blood means a clean skin. No beauty without it. Cascarets, Candy Cathartic clean your blood and keep it clean, by stirring up the lazy liver and driving all impurities from the body. Begin to-day to banish pimples, boils, blotches, blackheads, and that sickly bilious complexion by taking Cascarets,—beauty for ten cents. All druggists, satisfaction guaranteed, 10c, 25c, 50c.

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

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

Send to us for full particulars, MAILED FREE. Tuttle's Family Elixir cures Rheumatism, Sprains, Bruises, Pains, etc. Samples of either Elixir free for three 2-cent stamps for postage. Fifty cents buys either Elixir of any druggist, or it will be sent direct on receipt of price. DR. S. A. TUTTLE, 27 Beverly Street, Boston, Mass.



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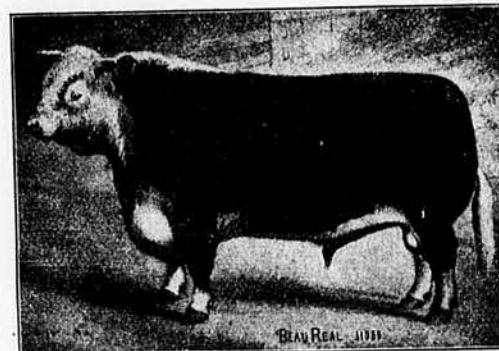


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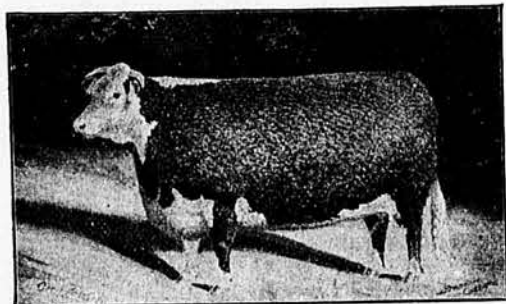


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