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Agricultural Matters.

THE IMPORTANCE OF MAINTAINING A SUPPLY OF HUMUS IN THE SOIL.*

One of the most important elements of soil fertility is the partially decomposed animal and vegetable substances (organic matter) which is known as humus. It has been shown that a decline in fertility is not entirely the result of the removal from the soil of the essential fertilizing constituents—nitrogen, phosphoric acid, potash, or lime—but is due in many cases to a loss of humus. The loss of humus is due to a variety of causes, among which are (1) the continuous growth on a soil of a crop which does not return any residue to the soil; (2) systems of cultivation which leave the bare soil exposed to the action of the oxygen of the air, such as summer fallowing, and fall plowing, and (3) forest fires.

Investigations by the Minnesota station have shown that there are serious losses of humus from all these causes, but that probably the greatest decline in fertility in the soils of that region was due to continuous grain-cropping. It was found that soils so cropped were in many cases abundantly supplied with nitrogen, phosphoric acid, and potash, and were not benefited by applications of fertilizers containing these substances; but there had been a decided decrease in the amount of humus which the soils contained, and this undoubtedly accounted for the observed decline in their productive power. That this was true was shown by the fact that with methods of farming in which humus-forming materials were returned to the soil its productive power either did not decline or declined much slower than when crops like wheat, cotton, or potatoes, which leave little residue on the soil, were grown continuously.

The same station has recently carried on experiments to compare the influence of continuous grain-cropping and rotation of crops on the humus content and fertility of soils. On one plot each wheat, corn, oats, and barley were grown continuously for four years. On another plot the following rotation was practiced: Wheat, clover, wheat, and oats. On still another plot oats followed by clover, barley, and corn (with manure) were grown.

The gain or loss of humus during the four years in the soil of the different plots is shown in the following table:

GAIN OR LOSS OF HUMUS IN SOILS UNDER DIFFERENT SYSTEMS OF CROPPING.

System of Cropping	Humus at the beginning of the experiment.			Gain (+) or loss (-).
	Per cent.	Per cent.	Per cent.	
Plot 1, wheat continuously	3.30	3.00	-0.30	
Plot 2, rotation (wheat, clover, wheat, and oats)	3.30	3.80	+ .50	
Plot 3, rotation (oats, clover, barley, and corn)	3.30	3.50	+ .20	
Plot 4, corn continuously	3.30	3.10	-.20	
Plot 5, oats continuously	3.30	3.08	-.22	
Plot 6, barley continuously	3.30	3.10	-.20	

From the data thus obtained it is calculated that with continuous wheat raising there was an annual loss of 1,800 pounds of humus per acre. The annual loss from continuous cropping with corn, oats, and barley was about 1,500 pounds of humus per acre. On the other hand, on the rotation plots there was an annual gain of about 1,500 pounds of humus per acre in one case and over 2 tons in the other.

Since humus is one of the principal sources of nitrogen in the soil, these variations of the humus content affected to a marked extent the supply of nitrogen. In the case of continuous wheat-growing there was an annual loss of 146 pounds of nitrogen per acre over and above that utilized by the wheat. In other words, for every pound of nitrogen removed in the wheat crop there was a loss of over 5 pounds of nitrogen from the soil. In the case of oats, the loss was 150 pounds; with barley, 170 pounds; with corn, 29 pounds.

On the first rotation plot that was an annual gain of 61½ pounds of nitrogen per acre, notwithstanding the fact that larger crops were grown on this soil than on those cultivated continuously in the same crop. A gain of nitrogen was also observed in case of the second rotation plot, although it was smaller than in case of the first, probably on account of the poor stand of clover secured, since it is believed that the increase of nitrogen in the rotation plots was due largely to that gathered by the clover from the free nitrogen of the air.

Humus is not only the principal source of nitrogen in the soil, but it influences to a marked extent the available potash and phosphoric acid. Humus-forming materials, like green manures and barn-yard manure, have the power, when they decompose in the soil, of combining with the potash and phosphoric acid of the soil and thus converting them into forms which are readily utilized by plants.

*From Experiment Station Work.

The influence of the loss of humus upon the physical properties of the soil is fully as important as its effect upon the chemical properties. The retentive power of soils for water and for fertilizers declines rapidly with a decrease in its humus content. It is well established that applications of lime and commercial fertilizers give the greatest return on soils well stocked with humus. Soils with a liberal amount of humus are capable of more effectively withstanding drought than similar soils with less humus. Determinations of moisture in the soils, upon which the above experiments were made, almost invariably showed a higher percentage of water in the rotation plots than in those on which the grains were grown continuously.

In arid regions and in sandy soils the loss of humus is most severely felt. Under these conditions the humus of the soil should be "increased by the use of well-prepared farm manures, green manures, and by a systematic rotation of crops in which grasses, or preferably clover, form an important part."

There are certain soils, however, that do not need humus. "Ordinary prairie soils, for the first ten years after breaking, are usually well supplied with humus. Swampy, peaty, and muck soils contain large amounts of humus. If the soil is sour to the taste, the acid may be neutralized by a dressing of lime or wood ashes. Soils from poorly drained places frequently contain sour humus. Very frequently muck soils are deposited over marl beds. Marl, which is a mixture of limestone and clay, may be used as a top-dressing for the muck soils."

From the above it is seen that a soil well stocked with humus will withstand drought better, furnish more available plant food, and hence larger crops, and give better returns for fertilizers applied than one deficient in this substance.

Keeping Kaffir Corn and Sorghum Seed in Bulk.

Editor Kansas Farmer:—In the Kansas Farmer of July 27, were two requests, from "Subscriber" and from "Inquirer," for information in regard to keeping threshed Kaffir-corn in bulk.

The writer presents here his ideas, for consideration.

So far as constituent elements are concerned, there seems no good reason why sorghum seed and Kaffir-corn should not

seemingly perfectly dry, but when heaped become quite wet. If then spread and dried, they may again be heaped without harm, for they have gone through the "sweat," and have been ventilated after that.

It may be said that it is safer to "sweat" any grain in the stack than in the granary, for there is sufficient ventilation in the stack, too little in the granary. Kaffir-corn and sorghum seed tops often are not stacked, or are not stacked long enough to sweat and to dry before threshing, and this is, perhaps, the reason why these grains do not keep as well nor as long as other grains. Last spring the writer planted 100 varieties of sorghum, including non-saccharine varieties, as Kaffir-corn. Many of these seeds were 14 years old, most of them were 9 years old, none were less than 4 years old, yet they germinated very well, which seems to show that the fault is not in the seeds, but is in the manner of keeping. Some years ago, a promising new variety was planted. The canes were cut and piled, and left to dry upon the hot, dry ground for two weeks, then the seemingly perfectly dry seed tops were flailed, the seeds bagged, the bags piled crosswise and apart, in a dry pass-way through a barn, having apparently perfect ventilation. About 1,000 packages of these seemingly perfect seeds were mailed before it was found that not 1 in 1,000 would grow. They were as dead as if baked. There was, of course, some sufficient reason for this; there is always a good reason for all that happens, though we may not know the reason. Since then there has been no trouble in getting 98 per cent germination from seeds of the same variety, by stacking, and leaving threshing until late, letting the seed tops sweat in the stack, where there is ventilation, instead of sweating in bins where there is none.

It also seems evident that granaries are wrongly built. They are made tight, not providing for change of air through the grain. We make no provision for ventilation of threshed grain. If the grain is at all soft or damp, or if it sweats in the bin, the stagnant air and moisture tend to ruin the heated grain.

A grain-bin having a perforated floor, which retains grain, but also allows fresh air to ascend through the grain is far better and safer than one with air-tight floor and walls, for if, as very often happens, any heat develops in the grain the heated air in the grain ascends through the floor, and through the grain and cool air comes in from below, thus cooling and ventilating the grain and removing putrid and stagnant vapors. Air passes very easily through threshed grain of any kind. Consider that water poured upon grain quickly descends through the grain, and air being 800 times lighter moves through grain with much greater facility. By thrusting an iron pipe into a bin of grain, one can learn that it is very easy to breathe through 1,000 bushels of wheat. A blacksmith's bellows attached to a pipe inserted in a bin of wheat shows how very little pressure is required to drive air through grain. A lighted lamp placed under an enclosed screen, on which is wet grain, sends a stream of warm air upward through the grain. What is needed to keep grain for an indefinite time, is simply ventilation. Corn keeps better in the ear, in an open rail pen, than shelled corn does in a close elevator-bin. It is safer to "sweat" grain in a stack than in a bin, because ventilation is better in the stack. It is the belief of the writer that many thousands of bushels of grain are damaged annually by neglect of sweating in the stack, by threshing when damp, and by insufficient ventilation of granaries, caused by wrong construction of the bins. Simply a perforated metal floor, or a heavy wire screen for a floor, or some cheaper form of a perforated floor would in many cases remedy this trouble. It would let air in, instead of keeping air out.

The writer would suggest to your "Subscriber" and "Inquirer" that they "sweat" Kaffir-corn seed tops in the stack the same as other grain, thresh only when dry, not before sweating, nor when in the sweat, nor when damp; and contrive their granaries so that if any heat develops in the grain, the heated air may ascend and escape, being replaced by cool air from the bottom of the bin. Grain may be kept more safely in the bin than in the stack, provided it is as well ventilated in the bin as in the stack, and this may be done by having free admission of fresh air through a perforated floor. Stagnant air is destructive to men, animals, plants and seeds, yet we make granaries tight, provide for no exchange of air through the grain, and then we wonder why our uncured or unsweated grain does not keep well unventilated in its own putrid gases, but molds and spoils in its hot and stagnant vapors. KAFFIR-CORN.

Seed Corn Selection.

Many farmers owning both bottom and upland corn-fields make the mistake of using the same seed on both kinds of soils.



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Corn which is adapted to the soil and moisture conditions of the valleys will not do so well on the upland as will some variety that has by several years of cultivation and selection become adapted to the conditions there. It is for the same reason that the large Colorado potatoes that have been grown for years under irrigation will do so poorly when used for seed in Kansas without the accustomed supply of water. It is generally the case on the farm that the corn from all the fields, both upland and bottom, is cribbed together. When the time for seed selection comes the largest ears are picked out irrespective of the kind of soil that grew them. As the bottom land produces the larger ears it is more than likely that the bulk of the seed will be from the lower and moister portions of the farm. This is the proper seed for the lowland, but it is not so well adapted to the dryer and poorer upland as is seed that has been raised there. It is advisable to select the seed either before or at husking time, when not only the quality of the ground but the character of the individual stalk and ear can be taken into consideration. As has been suggested before, a small box attached to the side of the wagon-bed into which the desirable ears can be thrown is the most practical device that can be recommended. By a little judicious selection for a series of years, a strain can be established on the upland portion of any farm which will be well adapted to that and other soils similar in location and composition. An 8-inch ear from the upland will ordinarily prove better for planting on the upland than will a 12-inch ear from a draw in the lower portions of the farm. J. M. WESTGATE.

Experience With Rape.

Editor Kansas Farmer:—Will Dwarf Essex rape sown this spring go to seed this year? Do the roots live through the winter? Last spring I read several articles in the Kansas Farmer and other papers on rape as a forage crop, so sent and got some seed, and on the 30th of May sowed in the garden with a garden drill. It came up in about five days, and grew very fast. In forty-five days from sowing it was 2½ to 3 feet high and I commenced cutting and feeding to hogs. It will turn a great amount of feed, and hogs seem to like it. I believe it will pay the farmers to experiment with it and see what it will do on the different soils, and under different conditions of climate, etc. Mine was sown on a rich black loam, without manure, and since sowing there has been plenty of rain. C. M. C. ANDRUS.
Winfield, Kans., July 29, 1899.

The authorities on rape culture furnish definite answers to our correspondent's first question. Dwarf Essex rape is biennial and like cabbage yields its seed the second year. The answer to the second question is not so definite. On looking through several discussions on rape there is found no statement as to whether the roots live through the winter in the ground or should be taken up and stored like cabbage roots from which seed is to be produced. The most explicit statement found is by Prof. Thomas Shaw in Farmer's Bulletin No. 11, U. S. Department of Agriculture. He says: "In England and Scotland some of the winter varieties of rape are sown in the early summer and are pastured off by sheep and lambs in the autumn following. The plants are then allowed to mature their seeds the second year. This is notably the case with the Dwarf Essex, the only variety which thus far has proved a marked success on this continent."

Mr. Andrus has placed Kansas Farmer readers under obligations by promptly and explicitly reporting his experience with this new forage plant.



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Spring term opens March 27, 1900.

THE REVISED COURSES OF STUDY.

The revision of the courses of study presented in this number of the Kansas Farmer was ordered by the board of regents of the Kansas State Agricultural College, and has been made by committees from the board and the faculty. Some of the things which it is believed has been accomplished are: A raising of the entrance requirements to a certain extent; the postponement of the choice of course as long as practicable; a better balancing of the different groups of studies in the several courses, and a better distribution and arrangement of them in the courses.

In respect to entrance requirements, it has been the feeling of educators throughout the State for some time that the requirements were too lax. At the same time it must be fully realized that students at this college are chiefly from rural districts, and that the course must keep within reach of those to be served.

To those already in the college, the new requirements will have no application, and to students returning next year no more work will be required than would have been necessary for graduation anyway.

With the little preparation that students have on entering they are not really ready to make a choice of course wisely during the first year. The studies of the first year are so chosen as to give them some knowledge of the nature of all the different courses, that with the beginning of the second year they may choose with greater intelligence. It is expected that when a choice is once made it will be adhered to, or if a change is made that all of the characteristic studies of the course to which the student goes will be made up. The shop work required throughout the year attracts toward the mechanical engineering course, the agriculture and household economics to their technical courses, and physics and botany give a taste of the sciences. At the beginning of the second year the four courses begin to separate from each other, very slowly at first and more markedly later on. With the distinctive studies of the several courses, however, there runs a constant web of study in chemistry, physics, history, economics, and to a less extent mathematics and literature, which is common to all and gives them a unity.

The special features of the agricultural, domestic, and mechanical courses are apparent on the face of them. One feature of the scientific course is less obvious. It provides for an elective through the fourth year. The electives available will in a large part be certain lines of study from the technical courses. Thus, one desiring more work in pure mathematics without the technical engineering studies can elect in the fourth year the mathematics which the engineering students take in the third year. The domestic science of the household economics course, third year, is also available. From the agricultural course the line of studies, comparative anatomy, veterinary science, and breeds and breeding may be taken. Agricultural chemistry and horticultural studies might make another line. In addition to these which may be taken with classes already organized for the other courses, special elective classes will be organized when there is sufficient demand for advanced study of entomology, landscape gardening, chemistry, physics, and others in so far as the teaching force available will permit.

In respect to the better balancing of groups of studies the requirements in history and economics have been reduced, but they remain greater than those of the agricultural colleges of Michigan, Iowa, Connecticut, and other States. This line of work is now the same in all courses. The mathematics has been strengthened materially in the agricultural course and to a less degree in the domestic science course.

An important addition to the course is that of physical culture for young women below the third year, corresponding to the military drill which the young men receive. This requirement is to be put into effect as far as the rooms and funds of the institution will permit.

These revised courses are submitted to the intelligent judgment of the people of the State with confidence that when their details are understood they will be recognized as the best yet offered by this institution.

THE LIBRARY.

The college library is one of the most important supplements to classroom instruction. It consists of 19,704 bound volumes and about 14,600 pamphlets. These books are mainly kept in a general library, but many volumes of technical character are withdrawn and held in departmental libraries. All of the books are indexed in card catalogues which show their author,

Courses of Study at the Kansas State Agricultural College.

FIRST YEAR.

ALL COURSES.	
FALL TERM.	Algebra 5
	English Readings 5
	Elementary Botany 5
	Hygiene 1
	*Freehand Drawing 2½
	*Shop or Sewing 5
	*Military Drill or Callisthenics 4
	†Singing and Notation.
WINTER TERM.	Algebra 5
	English Readings 5
	Agriculture or Household Economics 5
	Geometrical Drawing 2½
	*Shop or Sewing 5
	*Military Drill 3
	Tactics 1
	or Callisthenics* 5
	†Singing and Notation.
SPRING TERM.	Geometry 5
	English Themes 5
	*Object Drawing 2½
	Elementary Physics 5
	*Shop or Sewing 5
	*Military Drill or Callisthenics 5
	†Singing and Notation.

FOUR YEARS' COURSES.

In these courses the first year is the same for all students, excepting that the young men take military drill, agriculture and shop work, while the young women take callisthenics, household economics and sewing.

Figures following studies show class hours per week. Military drill is optional for young men of the third and fourth years. In the fourth year certain terms are open for electives in the science course and domestic science course. The electives are chosen under the direction of the Faculty. The following list is announced, and others will be provided as demanded in so far as the teaching force available will permit.

FALL TERM.	WINTER TERM.	SPRING TERM.
Analytical Geometry.	Calculus.	Calculus.
Domestic Science.	Domestic Science.	Domestic Science.
Chemistry.	Chemistry.	Chemistry.
Comparative Anatomy.	Veterinary Science.	Breeds and Breeding.
German.	German.	German.
Botany.	Entomology.	Botany.
	Horticulture.	Entomology.
		Forestry and Landscape Gardening.
		Physics.

SECOND YEAR.

AGRICULTURE.	DOMESTIC SCIENCE.	SCIENCE.	MECH. ENGINEERING.
FALL TERM.	Chemistry 5	Chemistry 5	Chemistry 5
	*Laboratory 2½	*Laboratory 2½	*Laboratory 2½
	Geometry 5	Geometry 5	Geometry 5
	Horticulture 5	Horticulture 5	Projection Drawing 5
	*Industrial, Horticulture 5	*Industrial 5	*Oratory 5
	*Oratory 5	*Military Drill or	*Shop 5
	*Military Drill 5	Callisthenics 5	*Military Drill 5
	†Music.	†Music.	†Music.
WINTER TERM.	Organic Chemistry 3	Organic Chemistry 3	Mechanics 5
	Chemistry of Metals 2	Chemistry of Metals 2	Chemistry of Metals 2
	*Laboratory 2½	*Laboratory 2½	*Laboratory 2½
	Trigonometry 5	Trigonometry 5	Trigonometry 5
	American Literature 5	Physiology 5	*Projection Drawing 5
	Oratory 2 or 3	Oratory 2 or 3	*Shop and Lectures 10
	Dressmaking 5	*Industrial 5	Military Science 3
	*Laboratory 5	Military Science 3	
	*Callisthenics 5	or *Callisthenics 5	
SPRING TERM.	Analytical Chemistry 2½	Analytical Chemistry 2½	Analytical Chemistry 2½
	*Laboratory 7½	*Laboratory 7½	*Laboratory 7½
	Entomology 5	Entomology 5	Physics 3
	Oratory or Music 2 or 3	Oratory 2 or 3	Hydraulics 2
	Physiology 5	Higher Algebra 5	Higher Algebra 5
	*Surveying 2	*Surveying 2	*Axonometric Drawing 5
	*Military Drill 5	*Military Drill or *Callisthenics 5	*Shop 5
			*Military Drill 5

THIRD YEAR.

FALL TERM.	Rhetoric 5	Rhetoric 5	Rhetoric 5
	General History 5	General History 5	General History 5
	Agricultural Chemistry and Soil Physics 5	Chemistry of Cookery 5	Analytical Geometry 5
	Hygiene of Farm Animals 3	Domestic Science 2	Descriptive Geometry 5
	*Oratory 5	*Laboratory 5	*Shop and Lectures 7½
WINTER TERM.	Nineteenth Century History 5	Nineteenth Century History 5	Nineteenth Century History 5
	Civics 5	Civics 5	Civics 5
	Chemistry of Foods (½t) 5	Projection Drawing (½t) 5	Calculus 5
	Stock Feeding (½t) 5	Home Architecture (½t) 5	*Oratory 5
	Zoology 2½	Domestic Science 2	*Mechanical Drawing 5
	*Laboratory 7½	*Laboratory 5	*Graphic Statics 2½
	*Industrial, Horticulture 5	*Floriculture 5	*Shop 5
SPRING TERM.	Economic Principles 5	Economic Principles 5	Economic Principles 5
	Geology 5	Logic 5	Calculus 5
	Horticulture 4	Bacteriology 4	Principles of Mechanism 5
	Stock Feeding 5	*Laboratory 2½	Perspective and Sketching 2½
	*Agricultural Mechanics 5	Domestic Science 2	*Machine Design 5
		*Laboratory 5	*Shop 7½

FOURTH YEAR.

FALL TERM.	Physics 5	Physics 5	Physics 5
	History of Industries 5	History of Industries 5	History of Industries 5
	Bacteriology 4	Elective 5	Mechanics of Materials 5
	*Laboratory 2½	*Oratory 5	*Engineering Laboratory 5
	Comparative Anatomy 5	*Industrial 5	*Foundations 5
	*Industrial, Agriculture 5		*Shop 5
WINTER TERM.	Physics 5	Physics 5	Physics 5
	English Literature 5	English Literature 5	Applied Mechanics 5
	Physiological Botany 5	Physiological Botany 5	Engineering Power Plants 5
	*Laboratory 5	*Laboratory 5	*Engineering Laboratory 5
	Veterinary Science 5	Elective 5	*Machine Design 5
SPRING TERM.	English Literature 5	English Literature 5	English Literature 5
	Breeds and Breeding 5	Psychology 5	Applied Mechanics 5
	Plant Diseases and Plant Breeding 5	Elective 5	Thermodynamics 5
	Agricultural Economics 5	*Object Drawing 5	*Machine Design 10
	Thesis.	Thesis.	Thesis.

SHORT COURSES.

These short courses are given only in the terms indicated. Applicants over 18 years of age and with the rudiments of a common-school education are admitted to these courses without examination, but at the beginning of the respective terms only.

Dairy School Course.

ONE WINTER TERM.

Principles of Agrl. (½t) 5	Dairy Bookkeeping (½t) 5
Dairying (½t) 5	Creamery or Private Butter Making or Cheese Making (½t) 5
Feeds and Feeding (½t) 5	Breeds and Breeding (½t) 3
Bacteriology 3	Diseases of Dairy Animals 2
Boiler and Engine 5	*For Farmers: Milk Testing and Private Butter Making 20
*Creamerymen: Milk Testing and Creamery Butter Making 20	*Cheese Makers: Milk Testing and Factory Cheese Making 20

Farmers' Short Course.

(A Short Course in Agriculture, Horticulture, and Mechanics.)

FIRST YEAR, WINTER TERM.	
Feeds and Feeding 5	Horticulture, Entomology 5
Crop Production, Bookkeeping 5	Diseases of Farm Animals and Bacteriology 5
Fruit Propagation 5	*Blacksmithing, Repairing 10
*Science Lectures 1	
SECOND YEAR, WINTER TERM.	
HORTICULTURE.	
Vegetable Gardening and Small Fruit Culture 5	Orchard Treatment, Pomology 5
Diseases and Insects 5	Physics and Chemistry 5
*Shop, Farm Carpentry, etc. 10	*Horticultural Practice 5
*Science Lectures 1	
AGRICULTURE.	
Breeds and Breeding 5	Dairying, Farm Architecture 5
Botany 5	Physics and Chemistry 5
*Shop, Farm Carpentry, etc. 10	*Farm Practice 5
*Science Lectures 1	

Domestic Science, Short Course.

FIRST YEAR, FALL TERM.

Lectures and Practice in Cooking 15	*Drawing 5
Home Sanitation and Household Accounts 1	*Sewing 16
*Vegetable Gardening and Floriculture 5	

SECOND YEAR, FALL TERM.

Lectures and Practice in Cooking, and Home Nursing 10	Physics (½t) 5
Chemistry (½t) 5	Bacteriology and Physiology 2½
*Dressmaking 12	

* Subjects marked with an asterisk require no study outside of class.
† Music by special permission at any time during the course.

title, and to a large degree the details of their contents; also their location. Students are allowed free access to the shelves, a privilege and a source of culture that is given in perhaps no other library of its size in the country. Students may draw books for home use under simple and liberal regulations. The library is open daily, except on legal holidays, from 7 a. m. to 6 p. m., and the librarian or an assistant is in constant attendance during this period to assist those who use the books. By all these means the library is utilized to the fullest extent and is of inestimable value.

THE SHORT COURSES.

There are large numbers of young people who from lack of means or time are unable to take an extended course of study, but whose usefulness in the world would be much increased by a little special training. Their earning capacity in the household or on the farm is far from what it might be, and they are thus handicapped in the struggle for a livelihood. To bring to this large portion of the "industrial classes," even in small measure, the "liberal and practical education" provided for by the organic act, the college has established certain short courses of study with practice.

The teaching in these courses, while no whit less accurate than in the others, is upon a different plane. Taking students without scientific or mathematical training the instruction must be more largely a giving of facts, without an elaboration of the underlying principles which the regular courses afford. The work is intensely practical. Studying such texts as any bright young man or woman can understand, receiving lectures of the same type, and putting into daily practice through industrial exercises the facts and principles learned in the class-room, the student can not but be greatly benefited.

These courses are put at the seasons of the year which seem likely to accommodate the most students, those for young men being given in the winter term, when farm work is more slack, and the young women's course being in the fall. Four such courses are now offered: A dairy course of one winter term; a domestic science course of two fall terms; an agricultural-mechanics course and a horticulture-mechanics course of two winter terms. The last two courses are identical the first term, but in the second, one treats horticultural lines more exclusively and the other agricultural.

Persons at least 18 years of age and of a good moral character are admitted to these courses without examination, but should have sufficient training in the common schools to enable them to understand the simple text-books used, and to handle readily problems in common and decimal fractions and percentage. They will be required to attend strictly and constantly to their duties. They have the same free use of the college library that other students have. Owing to the peculiar nature of the work and to the slight degree of preparation which it assumes, students are required to be present at the very beginning of the course, and those applying later will not be admitted.

INDUSTRIAL TRAINING.

This institution is preeminently industrial in its aims, methods, and tendencies. While the pure sciences, mathematics and other studies are rigorously taught, there is constantly present a practical atmosphere which incites the student to an application of the principles taught, and thus lends interest and value to the work. In nearly every term of the four-years' course the student gives one hour per day to industrial training of one kind or another. This awakens and deepens sympathy with industry and toil, impresses the student with the essential dignity of labor, thus educating toward the industries instead of away from them, and lays a good foundation for a life work in industrial and technical lines. Even should students not all return to the farm, the shop or to housewifery, the wider knowledge afforded them and the broader sympathies engendered can not but redound to their good and to the advantage of society at large and the industrial classes in particular.

Throughout the first year young men take their industrial in the shops. They thus get a familiarity with tools and methods which enables them to do the wood and iron work commonly needed on the farm, and which is useful to all everywhere. The young women take sewing during the first year, and a certain amount of cooking practice. After the first year there are differences in the industrial requirements corresponding to differences in the several courses of study. In the domestic science course the various lines of household art constitute almost the entire industrial work, floriculture being given one term and another being open to choice. In the mechanical engineering course shop work in one or another of its various kinds is required every term. In the agriculture course the industrials include practical instruction in the fields, orchards, gardens, and dairy, and in feed-

ing. The science course offers more latitude in choice of industrials after the second year. Young women may take sewing, cooking, printing, floriculture, or music. Young men may have wood work, iron work, dairying, farming, gardening, fruit-growing, or printing. The availability of these industrials depends somewhat on the season in some cases, so that not all are open each term. In addition to the above a limited number of students are allowed typewriting as the industrial upon recommendation of the head of a department having a machine.

The labor of students during assigned industrial time is not paid for, as its object is educational and the student receives full value in the training afforded. In all the instruction in industrial lines special attention is given to making the courses systematic and progressive. Students desiring to give extra attention to such work are allowed every opportunity that the departments can afford. Many students acquire sufficient proficiency to be able to turn their skill to a financial advantage during the later terms of their courses, and all who apply themselves with any diligence obtain a training that can not fail to be of great benefit to them in after life.

GENERAL DUTIES OF STUDENTS.

Good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week-day except Monday, and no student may be absent without excuse. Students can not honorably leave the college before the close of the term, unless excused beforehand. A full and permanent record of attendance and scholarship shows to each student his standing in the college.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and absence from them is noted.

Every Saturday, at 1:30 p. m., the whole body of students gathers for a public lecture, or for rhetorical exercises of the third- and fourth-year classes.

ENTERING COLLEGE.

Applicants for admission must be at least 14 years of age. The revised courses, as given elsewhere, are based on the following entrance requirements: Reading, spelling, writing, geography, arithmetic, United States history, English grammar, English composition, elementary physiology, bookkeeping, and algebra through simple equations of one unknown quantity. It is recognized that only the very best rural schools will prepare students for unconditional entrance, and the college will therefore maintain preparatory classes under experienced teachers for the instruction of such as are unable to fully pass the entrance requirements. Applicants over 18 years of age, who for lack of early advantages are unable to pass even the common-school branches may, under special conditions, be admitted to preparatory classes, but all others will be expected to pass them.

Examinations for admission are held at the beginning of each term. Applicants at other times during the school year have special examinations. These examinations are chiefly written, and a grade of 70 per cent, at least, must be obtained to pass a study.

On entrance, applications for advanced standing in the course or for credit for certain studies of the course may be made to the chairman of the committee on examinations. If made after entrance, application should be made to the professor in charge of the study. In any case the applicant will be required to pass such an examination as the professor in charge deems necessary. Students desiring credit for work done elsewhere must bring certificates and catalogues to show that the work done is equivalent to that at the Kansas State Agricultural College.

Applicants may receive credit without examination for such entrance requirements as may be covered by the following:

1. Grades of at least 70 per cent on a Kansas teacher's certificate.
2. Diploma received on completion of a county course of study which has been approved by the college.
3. Certificate of passing the grammar grade, or graduating from the high school of any city with a course of study approved by the college.

The studies of the first year, and many of the second, are taught in two or all of the terms of the year and not simply in the terms shown in the schedule, so that students who enter deficient in a term's work on entrance studies will go right on their first-year work the next term. It is quite possible for a good student who enters somewhat behind to make up his deficiency in the course of a year or two and graduate in four years.

Students should make every effort to enter on the first day of the term. Those entering later will be at a serious disadvantage,

and if more than two or three weeks late should expect to take review work or fewer studies.

EARNING ONE'S WAY.

The courses of study are based upon the supposition that the student is at college for study, and a proper grasp of the subjects can not be obtained by the average student unless the greater part of his time is given to college duties. Students in straitened circumstances are encouraged and aided in every way possible, but unless exceptionally strong both mentally and physically are advised to take lighter work by extending the course, if obliged to give any considerable time to self-support. As a rule, students should be prepared with means for at least a term, as some time is necessary for one to make acquaintances and learn where work adapted to him may be had. Sometimes arrangements may be made in advance.

The lines in which employment may be had are various. The college itself employs student labor to the extent of about \$900 per month, the rate paid being 10 cents per hour. This work is on the farm, in the orchards and gardens, in the shops and printing office, or the janitor, etc. As one's ability and trustworthiness become established, more responsible and more remunerative work may be had to a limited extent. Many students obtain employment in the town; some work for their board in families in town or in the country near the college. Labor is everywhere respected, and the student who earns his way is honored by all. He will necessarily have little time for the lighter pleasures that may be made incident to college life.

EXPENSES.

Tuition is free to all, irrespective of residence in Kansas; and no fee for incidental or contingent expenses is charged. Board and washing are not furnished by the college. Board, with furnished room, can be procured in private families at from \$2.50 to \$3.50 per week, or table board in student clubs from \$1.50 to \$2.25 per week. Furnished rooms without board can be obtained at from \$3.50 to \$5 per month. Some students board themselves at even less cost, and rooms for the purpose can be obtained at a rent of from \$1 to \$3.50 a month. Washing costs from 50 cents to \$1 a dozen pieces. Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year. No institution in the State furnishes an education at less cost to the student.

THE SHORT COURSE IN DOMESTIC SCIENCE.

With the beginning of the next term the college inaugurates a short course in domestic science. This course is especially planned to meet the requirements of young women who from lack of time, means or preparation are unable to take the complete work provided by the regular four-years' course. It is covered in two fall terms. Only the first of these will be given next fall, the same students continuing a year later with the second term's work. After this year both terms will be taught each year. The term will begin Tuesday, September 19, about a week later than the regular college work, and all persons expecting to take the course must be present at that time.

The general plan of the first year is to give comparatively little text-book work and a large amount of highly practical industrial training in both cooking and sewing. As an important accompaniment to the sewing, drawing is given daily, which cultivates appreciation of forms and develops the technical skill required for the drafting of patterns. Four hours each of four afternoons are assigned for sewing, and a half a day on Monday to vegetable gardening and floriculture. The practical cookery which is given five mornings of each week is prepared for by clear and simple lectures.

The lectures in domestic science, and their accompanying laboratory work in the kitchen, include the following topics: The origin and purpose of cooking and the effects of heat and cold upon starch and albumen; direct application of the principles learned to the cookery of eggs, vegetables, beverages, and soups; the general cookery of meats, with study of the meat charts; baking-powders, their composition and adulteration; yeast, and bread-making by fermentation. Care of the kitchen, living-rooms, sleeping-rooms, dining-room, etc., including the cleaning of kitchen utensils and lamps, sweeping, dusting, and care of plumbing. General principles of laundry work.

In sewing the pupil makes a model book, covering the full course in hand sewing and consisting of basting, darning, gathering, patching, etc. The work also includes machine practice; drafting, cutting and making underskirt and drawers; drafting, fitting and making dress without lining; cutting and making corset cover and night-dress. Materials for model book will be furnished by the college. Each pupil will furnish material for the garments, but if

"Pride Goeth Before a Fall."

Some proud people think they are strong, ridicule the idea of disease, neglect health, let the blood run down, and stomach, kidneys and liver become deranged. Take Hood's Sarsaparilla and you will prevent the fall and save your pride.

Hood's Sarsaparilla
Never Disappoints

sufficient proficiency is shown she will be allowed to take orders for others.

Such are the chief features of the first year's work, giving a practical knowledge of simple sewing, a practical application of the methods and principles of plain cookery, a short course in the general sanitation of the kitchen and the home in general, and the management of all departments of home work. In the second year some study will be undertaken of the elementary facts of physics, chemistry, physiology, and bacteriology, together with thorough practical work illustrating the various points as applied to the home.

In the lectures and laboratory work of the second year the following subjects are taken up: The food principles and their classification; the uses of food in the body; canning and preserving; cookery of the various combinations made with eggs, and thus involving the application of heat to albumen; simple chemistry of bread-making, rolls, puddings, etc.; practical lessons in frying, and in cookery of salads, plain pastry, dessert, and cake; a series of six lessons in invalid cookery, and six lessons in home nursing.

In sewing, pupils will be taught to adapt and use patterns taken from pattern sheets, also use of dress-cutting system, cutting, fitting, and making woolen dress. The pupil will furnish her own material for the first dress, but if sufficient proficiency is shown will be allowed to take orders for others.

Central College at Fayette, Mo., was founded in 1857. Its standard of scholarship is unsurpassed. A young man who took the A. B. degree at Central in June, 1898, took the M. A. degree at the University of Chicago the following year. At Yale and other great universities of the East, Central men have won distinction. The college has in buildings and endowment, four hundred thousand dollars. It has well-equipped libraries, laboratories, gymnasium and athletic grounds. The Cupples Hall, now being erected at a cost of twenty-five thousand dollars, will be the finest college dormitory in the State. Here young men may obtain board at about two dollars a week. Central College has also an excellent business course. Full information in regard to the college may be obtained by sending to President E. B. Craighead for catalogue.

Pianos.

We handle and carry in stock, twelve different makes of high-grade pianos, including the following:

**Everett
Hardman
Richmond
Story & Clark
Smith & Barnes
Marshall & Wendall
and six others.**

To any one intending to purchase an instrument, correspondence is solicited. Used instruments taken in exchange.

Catalogues Free.

**E. B. Guild
Music Co.,
614 Kansas Ave., Topeka, Kans.**

Gossip About Stock.

Ben. M. Berry, Carbondale, Kans., is planning to have a public sale of Poland-China swine this fall.

See special offering of 2 highly bred and good yearling Holstein-Friesian bulls by W. H. McCall, College View, Neb.

J. E. Woodford, secretary of the Coffey County Fair, to be held at Burlington, September 11-15, is offering special inducements this season for cattle and other live stock exhibits. See his announcements elsewhere in this issue.

J. C. Curry, of Quenemo, Kans., is better equipped with good Hereford cattle than ever before. His herd bull, Archibald, has greatly improved the stock on hand. He will have some announcements to make a little later in the season.

Oard Bros., Vassar, Kans., have over 100 head of choicely bred Poland Chinas for sale. They wish to sell 50 at private sale and the remainder at public sale this winter. Parties in quest of first-class hogs should give these energetic and skillful breeders a call.

The "Shoo Fly" advertised in this paper has proven quite successful in getting rid of the horn-fly pest. Mr. R. M. Allen, manager of the Standard Cattle Co., Ames, Neb., in sending in a large order says, "This is the third year it has been used successfully at this station."

Even good intentions are rewarded, as demonstrated by James C. Stone, of Leavenworth, who had 50 Shropshire and South-down sheep for sale, and very wisely sent his advertisement to the Kansas Farmer, but before it appeared in the paper, he sent the following telegram: "Don't insert ad. Sheep sold."

J. N. Winn & Son, Kansas City, Mo., the successful breeders and exhibitors of Poland-Chinas, expect to make a show at the Illinois State Fair, Springfield, Ill., and also to hold a public sale of their magnificent show herd at the same time. Cata-

Artful Lady IX, Royal Nina VIII, and Mina's Model.

"Nearly 200 Percheron stallions have already been landed by importers within the last ten days and more will doubtless follow," says the Breeder's Gazette. "Several of the importers of French horses are also bringing over a few Shires, and others went into the English horse-breeding districts to pick up a few first-class colts, but found the prices so high on top stuff as to be wholly prohibitive. There is much complaint from importers as to the prices they were compelled to pay in France for horses, and also of the difficulty in finding horses that were good enough to bring over. Importations of Clydesdales thus far as announced will probably reach about thirty, and a number of Belgian stallions will presently be landed. Several importations of French and German coachers have already arrived and more are to follow."

Prospect Farm, H. W. McAfee, Topeka, Kans., has been headquarters for Clydesdale horses and Shorthorn cattle for over a quarter of a century. Some eighteen years ago the writer suggested the name adopted for the farm, and last week in visiting the place found both horses and cattle in most excellent condition. No western establishment is so strong, both as to quality of breeding and number of pure-bred Clydes as Prospect Farm is to-day. During the past depression in the horse business, Mr. McAfee never faltered in keeping up the high standard of breeding excellence of this famous draft breed of horses and as a consequence he has as fine a lot of pure-bred stallions and mares as may be found in the entire country. The Prospect Farm Shorthorn herd is not large in numbers but for general uniformity is not surpassed. There is not a white or roan in the herd and the old cows are of the large and beefy sort that are not numerous enough in most herds. The breeding is essentially of the Cruickshank type, nothing but straight-bred bulls having been used for years. The present herd bull is My Lord 116563 by Imp. Spartan Hero 77922,

of this company's incubator and quite a sale of machines is certain to be made among the poultry people of Shawnee County familiar with this remarkable hatch.

The American Land Company, Topeka, Kans., is offering for sale a large number of farms which were obtained by several of the old-line loan and trust companies which have now gone out of business. Correspondence will show that those desiring to acquire farms can buy them at exceedingly low prices. It will pay any one interested to notice the advertisement in another column and write to the above named company.

Buy your seeds direct from the growers, is a very good rule to follow, and you can hardly miss it when you buy direct from the farmers and seed growers. This is especially true of winter wheat, and the Bearded Fife or Reliable Minnesota winter wheat grown and sold by the Farmer Seed Co., of Fairbault, Minn. (see advertisement on page 11), a variety with which winter wheat growers can not miss it. Grown in Minnesota under severe climatic conditions, it is almost certain to never winter-kill in any locality, and in yielding and milling qualities it is not only equal but superior to most all other varieties of winter wheat.

An interesting decision was rendered in July by Judge Townsend in the United States Circuit Court in the case of the American Waltham Watch Company vs. Joseph H. Sandman. Complainant is the well-known manufacturer of Waltham watches at Waltham, Mass. From the opinion, it appears that complainant since 1854 has sold nearly 8,000,000 watch movements, all of which, with few exceptions, have borne the name "Waltham." The court granted the injunction asked for, basing his decision upon the ground that the conduct of the defendant and of his principal was in violation of the law against unfair trade, and was intended to deceive and defraud the public and to deprive the complainant of the trade and good will to which it was entitled.

The Philadelphia Farm Journal says: "We believe in wire fences, and shall have them wherever fences are wanted in our experimental farm, when we get it. Of



course, we shall need a wire-cutter, a splicer, staple and nail-puller, hammer and pincers to build the fence and keep it in order. We have already secured all these

TEST IT.

A Babcock tester is a good thing—one of the best—but butter yield under average conditions is better. Try a Sharples Hand Separator that way and you win every time. The butter quality is better, too, and the machine is simple and durable, easily understood, easily washed, no repair bills, etc. A TRIAL FREE. Send for Catalogue No. 19.



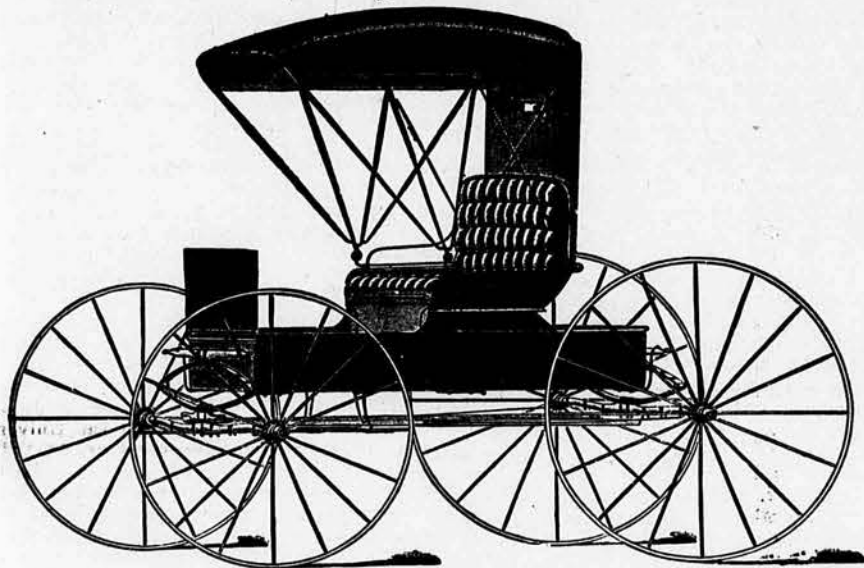
The Sharples Co.,
Canal & Washington Sts.,
CHICAGO.

P. M. SHARPLES,
West Chester, Pa.
U. S. A.

tools in combination. It is called Russell's Staple Puller. A handier and more generally useful tool we never owned. We shall need three of them when we get on the farm, one for our wife's tool-box, one for the farm box and one to carry in the hip pocket of our overalls. This tool is made by the Russell Hardware and Implement Mfg. Co., Kansas City, Mo. The Kansas Farmer indorses the above and is also authorized by the manufacturer to say that he will send six steel tools free to any farmer who will induce his hardware merchant to buy one dozen Russell staple pullers from his jobber. Write for particulars to Russell Hardware & Implement Mfg. Co., 1822 Grand Ave., Kansas City, Mo.

Leading Exhibitions for 1899.

Kentucky Fair—Lexington, Aug. 8-12.
Iowa State Fair—Des Moines, Aug. 25-Sept. 2.
Toronto Exposition—Aug. 28-Sept. 9.
Ohio State Fair—Columbus, Sept. 4-8.
Minnesota State Fair—Hamline, Sept. 4-9.
New York State Fair—Syracuse, Sept. 4-9.
Wisconsin State Fair—Milwaukee, Sept. 11-15.
Indiana State Fair—Indianapolis, Sept. 18-23.
South Dakota State Fair—Yankton, Sept. 25-29.
Illinois State Fair—Springfield, Sept. 25-30.
Michigan State Fair—Grand Rapids, Sept. 25-30.
Texas State Fair—Dallas, Sept. 28-Oct. 2.
Denver Horse Show—Denver, Col., Sept. 29-30.
St. Louis Fair—St. Louis, Oct. 2-7.
Utah State Fair—Salt Lake, Oct. 3-7.
Hereford Show—Kansas City, Mo., Oct. 23-28.



YOUR MONEY'S WORTH.

We wish to say a word commendatory of our advertising patrons, the Crawfordsville Carriage & Harness Co., of Crawfordsville, Ind. Our readers will have noticed by the tone of their advertisements that they sell all goods direct from the factory to the consumer at wholesale prices. This means just what it says, too, as a single case in point will show. Take, for instance, the No. 116 "Hoosier Pride" end-spring top buggy. This is a vehicle with which these people have taken special pains, with the result that it is a most remarkable case of value for the money. It is constructed of good, honest material throughout, is well and handsomely painted, and is trimmed in the latest and most tasty style. The purchaser has the choice of several varieties of coloring and paint, and in color and material for trimming. It is equipped with all the perquisites, such as boot, storm-apron, etc., and is sold under a positive guarantee of quality. The price, therefore, seems extremely reasonable at \$40.50. More remarkable still is the fact that they supply the same buggy with the more expensive Brewster spring at the same price. If you contemplate the purchase of a buggy, carriage, light wagon or harness it will certainly pay you to correspond with these people before buying. Ask them for their complete Catalogue P. Kindly say that you saw this notice in our paper.

logues will be ready about September 10, 1899.

The advance in hogs will stimulate every breeder to renewed activity. There is every promise of lively demand for pure-bred swine this fall and winter, and the breeder who has stock for sale should not hesitate to recoup himself for the dull period by at once hanging out a new and attractive sign in the way of an advertisement in the Kansas Farmer, as buyers of pure-bred stock of all kinds will consult our advertising columns, alert for such announcements.

T. J. Young, of Lathrop, Mo., has decided to hold a public sale of Shorthorn cattle at Kansas City, Mo., on November 2, 1899. Watch for further announcements. Every breeder of pure-bred stock should become a member of the Kansas Improved Stock Breeders' Association. The annual report and other benefits received by members are worth several times the cost of membership, \$1 a year. For further information address H. A. Heath, secretary, Topeka, Kans.

Within the last two weeks the Union Pacific land department has closed sales and leases, principally with sheep-owners, for over 250,000 acres. This breaks the record so far as known. Last month 78,000 acres in Nebraska, Wyoming and Utah were disposed of to sheepmen and cattlemen. Many land buyers from Iowa and Illinois are acquiring farms in the West, especially in Kansas and Nebraska. A deal involving 20,000 acres in Lincoln County, Nebraska, is now pending. An Eastern syndicate will make it a cattle ranch.

The public sale of Berkshire swine, held at Springfield, Ill., last week, by Messrs. Lovejoy and Harvey, was a success and the stock went to a number of States east, west and south. The average made by Mr. Lovejoy was \$48.75 and Mr. Harvey's average was \$30. Kansas secured seven of the best animals offered. Manwaring Bros., of Lawrence, secured the boar, Baron Victor III, and C. A. Stannard, owner of the Sunny Slope Berkshires, Emporia, secured six head at an average cost of about \$40, purchasing the boar, Royal VI, and the females Ideal Lady XXIX, Agar Belle M,

and out of Imp. Lady of the Meadow, both sire and dam from Amos Cruickshank's herd in Scotland. This herd bull is now for sale and will do good service for several years and improve almost any herd. He has two sons that will also make herd headers, Harry, a 9-months' calf out of Anna A., Vol. 40, by Vidocq 114010, bred by Colonel Harris. The dam of this bull was out of Butterfly 5th of Valley Grove by Imp. Thistle Top, and traces to Imp. Butterfly 14th by Baronet (15614). Lute, the other bull calf by My Lord, was out of Lucille by Earl of Valley Grove 111907, he by Earl of Gloster 74523 by Imp. Double Gloster 55406, bred by Amos Cruickshank out of Gloxinio, a cow weighing 1,800 pounds.

Publishers' Paragraphs.

Some of the very best business houses in Topeka are represented in the advertising columns in this week's issue. They are reliable, and any mail orders sent them will receive careful and prompt attention.

The Warner "Common Sense" fence, made by the Combination Fence Co., Melvern, Kans., has had a very large sale during the past year, and is one of the most popular combination fences on the market. See advertisement and write for particulars.

The United States Standard Howe scales and the Foose gas and gasoline engines are two of the best machines of their class made, and readers of the Farmer needing either are requested to make their wants known, after consulting the advertisement of Borden & Selleck Co., 1102 Union Ave., Kansas City, Mo. Write them or detailed description.

The Sure Hatch Incubator Company, of Clay Center, Neb., sent one of their incubators, on August 11, to Chas. Steinberger, 1201 N. Monroe St., North Topeka, Kans. This incubator was loaded with 109 eggs, due to hatch on arrival, and to the astonishment of all who witnessed the result, including a Farmer representative, the hatch was perfect from ninety-six eggs, nine dead in shell, and four only partly developed. This is a strong point in favor

DR. COE'S SANITARIUM.

11th and Walnut Sts., KANSAS CITY, MO.

We use the X Rays in the Examination of Diseases.

Consultation Free, in Person or by Mail. Write for Catalogue.



THIS SANITARIUM

Is a private hospital—a quiet home for those afflicted with medical and surgical diseases, and is supplied with all the remedial means known to science and the latest instruments required in modern surgery.

50 ROOMS

For the accommodation of patients, together with our complete Brace-Making Department, make this the largest, oldest and the only thoroughly equipped Sanitarium in the west. We treat Spinal Curvature by means of a suspension carriage giving ease and comfort to the patient while this dreadful deformity is being successfully overcome. Club Feet, Bow Legs, Knock Knees, etc. are successfully treated.

DISEASES OF DIGESTION.

Dyspepsia, "Liver Complaint," Obsolete Constipation, Chronic Diarrhoea, Tapeworm and kindred affections are among these chronic diseases in the treatment of which we have attained great success.

DISEASES OF WOMEN.

Space will not permit us to enumerate the diseases peculiar to women. We pay special attention to all the diseases, and have every advantage and facility for their treatment and cure. We have comfortable and well furnished rooms and offer a quiet home during confinement. We have a neatly prepared treatise describing Diseases of Women which will be mailed free to any address.

IF YOU ARE AFFLICTED with any of the above diseases, or in any way in need of medical or surgical aid, and are thinking of going abroad for treatment, you are requested to call on the Editor of this Paper, who will give any information you may desire concerning the reliability of this Sanitarium. Address all communications to **DR. C. M. COE, Kansas City, Mo.**

PILES AND FISTULA.

There is nothing that so completely unfits a man for business as Piles. Many men and women suffer for life with this annoying disease. There is no cure so safe and permanent as surgical operation. We have permanently cured hundreds of patients who have suffered for years, having tried all kinds of remedies without relief. We have published an illustrated book containing many testimonials from patients treated with entire satisfaction; will be mailed to you free.

VARICOCELE.

Varicocele is radically and permanently cured by our surgical operation in from five to fifteen days. No medicine or local application will ever cure this trouble. We annually cure hundreds of this class of patients, leaving them in a vigorous, healthy condition.

SURGICAL OPERATIONS

As a means of relief are only resorted to where such interference is indispensable. In such cases as Varicocele, Piles, Stricture, Fistula, Ruptures, Hernia, Cleft Palate, Cross Eyes, Tumors, etc. Although we have in the preceding made special mention of some of the ailments to which particular attention is given, the Sanitarium abounds in skill, facilities and apparatus for the successful treatment of all chronic ailments, whether requiring for its cure medical or surgical means. We have a neatly published book, illustrated throughout, showing the Sanitarium, with photographs of many patients, which will be mailed free to any address.

The Home Circle.

THE PRAYER OF SELF.

One knelt within a world of care
And sin, and lifted up his prayer:
"I ask Thee, Lord, for health, and power
To meet the duties of each hour;
For peace from care, for daily food,
For life prolonged and filled with good;
I praise Thee for Thy gifts received,
For sins forgiven, for pains relieved,
For near and dear ones spared and blessed,
For prospered toil and promised rest.
This prayer I make in His great name
Whom for my soul's salvation came."

But as he prayed, lo! at his side
Stood the thorn-crowned Christ, and sighed:
"O, blind disciple—came I then
To bless the selfishness of men?
Thou asketh health, amidst the cry
Of human strain and agony;
Thou asketh peace, while all around
Trouble bows thousands to the ground;
Thou asketh life for thine and thee,
While others die; thou thankest Me
For gifts, for pardon, for success,
For thine own narrow happiness."

"Nay; rather bow thy head and pray
That while thy brother starves to-day
Thou mayst not eat thy bread at ease;
Pray that no health or wealth or peace
May fill thy soul while the world lies
Suffering, and claims thy sacrifice;
Praise not, while others weep, that thou
Hast never groaned with anguished brow;
Praise not, thy sins have pardon found,
While others sink, in darkness drowned;
Canst thou give thanks, while others sigh,
Outcast and lost, curse God and die?"

"Not in My name thy prayer was made,
Nor for My sake thy praises paid.
My gift is sacrifice; My blood
Was shed for human brotherhood,
And till thy brother's woe is thine
Thy heart-beats know no throb of Mine.
Come, leave thy selfish hopes, and see
Thy birthright of humanity!
Shun sorrow not; be brave to bear
The world's dark weight of sin and care;
Spend and be spent, yearn, suffer, give,
And in thy brethren learn to live."
—Priscilla Leonard, in Outlook.

Where Certain Styles Originated.

The newspaper wits have insinuated that, should fate decide against the permanent recovery of the Prince of Wales, and he should be left with a slight limp, limping would become a fashionable fad.

There is nothing new in this, and it would not be the first time that physical defects set a style. The Alexandra limp became the fashion in 1874. In that year the Princess of Wales was afflicted with a lameness in one of her knees. Only a slight limp was the result, but this limp was caught up and imitated by the ladies of the court, and then by a large proportion of the women of England. Not a few of the women of America also aped the fashion.

The long trains which were so popular and so offensive a feature of the fashions of the early seventies, grew out of the fact that Queen Victoria, owing to a painful swelling, had been obliged to wear bandages on her foot. To conceal the bandages, she lengthened her skirts. Her dutiful subjects straightway lengthened their skirts also.

History is full of similar anecdotes. Alexander the Great had a twist in his neck. It was, therefore, fashionable for every one in the Monarch's court to carry his neck awry. One day, Francis I, of France, was struck on the chin with a piece of tile. To hide the resultant scar he allowed his beard to grow. His courtiers all followed the example set by the monarch.—Saturday Evening Post.

Mrs. Browning's Farewell to Her Husband.

Death-bed scenes are not always edifying, but sometimes one is portrayed which is so full of light and love that we are glad to remember it. Such was Mrs. Browning's, and her husband's story of it shows his own love for her in an exquisite fashion that also is not to be forgotten, says the Youth's Companion.

"She said, on the last evening, 'It is merely the old attack, not so severe as one as that of two years ago. There is no doubt that I shall soon recover.'

"And so we talked over plans for the summer and the next year. Through the night she slept heavily and brokenly, but then she would sit up, take her medicine, say unrepeatable things to me, and sleep again. At 4 o'clock there were symptoms that alarmed me, so I called the maid and sent for the doctor. She smiled as I proposed to bathe her feet.

"Well," she said, 'you are determined to make an exaggerated case of it!'

"Then came what my heart will keep until I see her again, and longer—the most perfect expression of her love for me within my whole knowledge of her. Always smiling, happily, and with a face like a girl's, in a few minutes she died in my arms, her head on my cheek.

"These incidents so sustain me that I tell them to her beloved ones as their right. There was no lingering nor acute pain, nor consciousness of separation; but God took her to Himself as you would lift a sleeping child from a dark, uneasy bed into your arms and the light.

"When I asked, 'How do you feel?' the last word was, 'Beautiful!'

Lincoln Fixed the Blame.

Lincoln's jokes, especially when perpetrated in connection with grave matters, usually had a purpose in them. After Lee had taken Harper's Ferry, the President, realizing how great a calamity it was to the northern arms, determined, if possible, to fix the responsibility for the loss of the important position.

Halleck was summoned; but did not know where the blame lay. "Very well," said Lincoln, "I'll ask General Schenck." The latter could throw no light upon the question, further than to say he was not to blame.

Milroy was the next to be called to the presence of the Commander-in-Chief, and to enter a plea of "not guilty." Hooker was next given a hearing, and Fighting Joe made an emphatic disclaimer of all responsibility.

Then the President assembled the four generals in his room, and said to them: "Gentlemen, Harper's Ferry was surrendered, and none of you, it seems, is responsible. I am very anxious to discover the man who is."

After striding across the room several times, the President suddenly threw up his bowed head and exclaimed, "I have it; I know who is responsible."

"Who, Mr. President; who is it?" asked the distinguished quartette, as they looked anxious, if not troubled.

"Gentlemen," said the President, with a meaning twinkle in his eye, "General Lee is the man."

There was a lack of mirth in the laugh created, and the four generals took their departure with a determination that they would not again be placed under suspicion.—Saturday Evening Post.

Children and Dirt.

The mother who would have her children healthy must not be afraid to have them occasionally dirty. While cleanliness is akin to godliness, there is a clean dirt that comes from contact with the sweet earth that is wholesome. Have the little ones bathed frequently, insist that they come to meals with immaculate hands and faces, but, between meals, have them so dressed that they are free to run and romp as they will.

An over-careful mother of an only child complained to a physician that her baby was pale and delicate. He asked to see the child, and the nurse brought in the 2-year-old from the old veranda, where he had been seated on a rug, looking at a picture-book. His dainty nainsook frock was spotless, as were also the pink kid boots and silk socks.

"What that child needs is wholesome dirt," was the physician's verdict. "Put a gingham frock and plain shoes on him, and turn him loose on the lawn or in the fresh earth. If he is not rosy and happy in a month, let me know."

At the expiration of the prescribed time the baby was transformed. The eyes that had been heavy were bright, the skin had acquired a healthful glow, the arms and legs were plump, and the languid, tired little patient had become a rollicking boy. The freedom, fresh air, and clean dirt had, in a month's time wrought a greater change in the child's system than all the skill of the medical fraternity could have effected.

Mothers who take their little school boys and girls away for vacation should let them romp at will out of doors, fish in the brook, ride on the hay, and wear strong shoes and clothing of which they need not be too careful. A child is much happier if untrammelled by too many "don'ts." And the mother is happier too if she need not say "don't" every hour in the day.—Harper's Bazar.

The Life of General Nathan Bedford Forrest

It is related of General Nathan Bedford Forrest that on one occasion a loquacious widow asked him why his beard was still black while his hair was turning gray. General Forrest answered that he could give no explanation unless that "he had used his brain a little more than his jaw." It was this very quality that made General Forrest one of the greatest soldiers of his time, the soldier of whom General Sherman said, "After all, I think Forrest was the most remarkable man our civil war produced on either side. In the first place, he was uneducated, while Jackson and Sheridan and other brilliant leaders were soldiers by profession. He seemed always to know what I was doing or intended to do, while I am free to confess I could never tell or form any satisfactory idea of what he was trying to accomplish."

Lord Wolseley, commander of the British Army, wrote of him: "Forrest had no knowledge of military science, nor of military history, to teach him how he should act. He was entirely ignorant of what other generals in previous wars had done under very similar circumstances. What he lacked in book-lore was to a large extent compensated for by the soundness of his judgment upon all occasions, and by his

power of thinking and reasoning with great rapidity under fire. Inspired with true military instinct, he was verily nature's soldier. 'In war,' said Napoleon, 'men are nothing; a man is everything!' It will be difficult to find a stronger corroboration of this maxim than is to be found in the history of General Forrest's operations." In the firm belief that General Forrest was one of the great military geniuses of the century Dr. John Wyeth has prepared this biography, which is not only the record of Forrest's memorable and picturesque life, but also a comprehensive narrative of his dashing raids in the most important campaigns of the war.

The Feminine Observer.

The mosquito's bill is now due. Nothing on earth is so terrible as the fear of it.

No house can be truly comfortable that hasn't screens.

One of woman's pet economies is saving string that she never uses.

Babies are brought up on the bottle and men are brought down by the same means.

The woman who can not see anything cunning in a colored baby is somehow lacking.

If the telephone girl became engaged every ring she receives there would be trouble.

The exemplification of true happiness is demonstrated in the joyous return of the picnic party.

Housekeepers who prate of table butter could leave off the first letter and be more truthfully descriptive.

The feminine server in a cheap restaurant calls herself a waiter girl; the one in a wealthy family, a waitress.

The yachting girl will soon be in her element. This does not mean, however, that she will fall into the ocean.—Philadelphia Times.

Riley's Opinion of Kipling.

In a recent interview, James Whitcomb Riley, the poet of the plain people, whose writings, in some subtle way, sweep our heartstrings, said of Rudyard Kipling:

"A lot of fellows who know nothing of Kipling's early history, think that he just did it—that he just happened. But that fellow was hustling around newspaper offices from the time he was 13 years old. Born and brought up among a strange people, with queer customs, he was for years gathering material for his work.

"He has the greatest curiosity of any man I ever knew. Everything interests him. In fact, he is a regular literary blotting-pad, soaking up everything on the face of the earth. Who before Kipling ever gave us animal talk? Esop's fables were kindergarten talk compared with his. I think he is one of the greatest writers we ever had. Think of a man only 32 years old who has given to the world eleven volumes of prose and verse! He has only just started.

"Another thing, read him from beginning to end, study him, become as familiar with his work as you will, every new bit from him displays some trait, some line of thought that is new. That man is great."—Saturday Evening Post.

Richard Harding Davis and His Medals.

Richard Harding Davis, the novelist, so the story goes, quite won the Sultan's heart by his reports of the Greco-Turkish war, and was presented with many medals by the Turkish potentate. Naturally he is very proud of them.

One evening when Davis was in London he was entertained at a London club, at which Sir Henry Irving was present. At this supper he wore all his medals.

Sir Henry saw the young American, and became particularly interested in the display of metal and ribbon upon the front of his coat and vest. He kept eyeing the collection, and finally begged to be introduced to the wearer. The two were brought together.

"Sir Henry," said the man who was performing the ceremony, "this is Mr. Richard Harding Davis, the brilliant young American writer."

"Chawmed," said Sir Henry. This was spoken absent-mindedly, for the great actor's attention was riveted on the medals.

Davis noticed this with evident pride. Sir Henry looked them all over with great interest. Finally he fingered one, and took Davis somewhat aback by inquiring casually, with his peculiar drawl:

"You get those at school?"—Saturday Evening Post.

Fruit Soups for a Luncheon Course.

Fruit soups are made from fruit juices and water, slightly thickened with arrowroot, and sweetened or not, as one pleases. To make an orange soup, add to one pint of orange juice one pint of water, bring just to the boiling point; add a tablespoonful of arrowroot moistened with a little cold water; cook for a moment, and strain; add four tablespoonfuls of sugar

and stand aside to cool. When ready to serve, put a tablespoonful of finely-cracked ice in the bottom of a lemonade glass, and over it the orange soup. Currant, raspberry, blackberry, and cherry soups are all made in the same way. Fruit soup is served as first course at a luncheon.—July Ladies' Home Journal.

Gladstone's Personal Magnetism.

Mr. Justin McCarthy, the great Irish Nationalist, has written and published a great deal about Mr. Gladstone, but nothing more charming than a chapter in his recently published Reminiscences, which gives a fine conception of the attractiveness of the Grand Old Man's personality.

"I must say," writes Mr. McCarthy, "that Mr. Gladstone has been an exception to all that I have known in my experience of men, for he grew distinctly handsomer as he grew older. At the time when I first became familiar with his personal appearance there was, except for the wonderful eyes, not much in his features to distinguish him greatly from other fine-looking men of about the same age. It was in his latter days that his face developed those noble outlines and his eyes showed that penetrating light which fastened at once the gaze of every observer. A stranger, utterly unacquainted with his appearance, seeing him for the first time among whatever crowd of men, would be sure to rivet his looks upon him, and to ask, eagerly, 'Who is that?' I have seen some few, very few, men's faces which had something like the same power of compelling attention. Nathaniel Hawthorne, the great American novelist, was one of them. Nobody could come into a crowded room where Nathaniel Hawthorne was one of the company without instantly finding himself attracted by Hawthorne's face, and especially by his eyes, and without instantly asking who he was. But then Hawthorne did not live to anything like the age at which Mr. Gladstone's presence began to be most impressive, striking and captivating. Crabb Robinson said that Goethe seemed to him an almost oppressively handsome man. The same thought has occurred to me many times when looking on Mr. Gladstone, that he was almost oppressively handsome in the sense that you could not get his face out of your mind while he was present. Even in a crowded House of Commons, and when one was sitting on a distant bench, one could not escape from the fascination of those wonderful eyes. The effect seemed to grow more and more with his growing years. I felt the impressiveness of those eyes more when I saw them for the last time than I did when I saw them for the first time forty years before."

Large Charity.

It is computed that more than \$25,000,000 has been given or bequeathed during the last year to educational institutions and libraries in the United States. An observing contemporary notes that one benefit from the transfer of this great sum to uses of public education is that, by helping to make independent of State and local aid the institutions which it goes to, it helps to make their teaching less subject to the influence of transient public sentiment. Where the support of a university depends on the will of the legislature, the instruction that it gives in such subjects as political economy, social economy, and history is liable to be affected by political consideration; but an institution that stands on its own pecuniary legs has nothing to consider in its choice of doctrine further than to teach what makes most for sound learning and coincides most accurately with the apparent truth.—E. S. Martin, in Harper's Weekly.

"What's in a name?" The word "bitters" does not always indicate something harsh and disagreeable. Prickly Ash Bitters is proof of this. It cleanses, strengthens and regulates the system thoroughly, yet it is so pleasant the most delicate stomach will not object to it.



HAIR SWITCHES

Finest of Human Hair at about One-third Ordinary Prices.

SPECIAL OFFER THIS MONTH.

Weight	Length	Price
2 ounces	20 inches	\$0.65
2 ounces	20 inches	.90
2 ounces	22 inches	1.25
3 ounces	22 inches	1.50
3 ounces	24 inches	2.25
3 1/2 ounces	26 inches	3.25

Remit five cents extra for postage. The best switch has long stem, the others are short stem. Send sample lock of hair cut near the roots. An immense stock enables us to match perfectly any hair. All orders filled on day received. Money refunded if unsatisfactory. Illustrated catalogue free. Everything in hair goods.

ROBERTS SPECIALTY CO. 114 Dearborn St. Chicago.

Mothers! Mothers!! Mothers!!!

MRS. WINSLOW'S SOOTHING SYRUP has been used for over FIFTY YEARS by MILLIONS OF MOTHERS for their CHILDREN while TEETHING, with PERFECT SUCCESS. IT SOOTHES THE CHILD, SOFTENS THE GUMS, ALLAYS ALL PAIN; CURES WIND COLIC, and is the best remedy for DIARRHOEA. Sold by druggists in every part of the world. Be sure and ask for "Mrs. Winslow's Soothing Syrup" and take no other kind. Twenty-five cents a bottle.

The Young Folks.

THE MAN IN THE MOON.

The man in th' moon is old and gray,
His locks are light as the milky way,
His armor bright as steel;
Six thousand years, the old folks say,
The man in th' moon has come this way,
Riding his silver wheel.

When lovers stroll beneath the moon
And make the vows they break so soon,
Of blissful lives to lead,
The man in th' moon sees every look
And writes it down in his snowy book,
Angels above to read.

When Santa Claus comes down this way
From Lapland's snows, riding his sleigh,
A reindeer for a steed,
The man in th' moon lights up his way
With silver lamp as bright as day,
That he may come with speed.

When children round the Christmas tree
Crowd in a ring the sights to see,
The man in th' moon looks in
And puts a kiss on the dimpled cheek
Of all the boys and girls alike
That love the man in th' moon.

When mist and snow obscure the sky
And clouds go hurrying, skurrying by,
With lances sharp as steel,
He cuts his way through snow and drift
And cleaves the clouds to right and left
And rides away on his wheel.

West Branch, Iowa. —A. C. Staples.

California Frog Ranches.

In California there are said to be more women who are engaged in masculine occupations than in any other section of the United States.

It is at Stege, a little station about 20 miles from San Francisco, that a frog ranch is located, named after the first owner of the land round about. The Stege ranch extends from the bay shore up to the ridge of the Coast Range of mountains, which encloses both shores of San Francisco Bay. In the lower portions of the ranch a great number of springs gush out of the soil in copious volumes. It was the springs that determined the first location of the ranch. The cite, overlooking an expansive view of the beautiful bay, was capable of vast improvement. A dozen acres, enclosing the springs, were surrounded with a hedge of cypress. The grounds were laid out with taste, and soon presented the rare beauty incident to the profuse vegetation of a semi-tropical climate. Three ponds were formed by confining the waters of the flowing springs, some acres in extent, and stocked with frogs. A fence, high enough to prevent the escape of the inmates, surrounded each, and the ponds were filled with aquatic plants and mosses. Then hundreds of frogs were placed in the ponds, and from the original stock the increase has been so great that, though thousands are sent to market yearly, the withdrawals have no sensible effect upon the vast numbers remaining. Frog-ranching is not unlike cattle-raising. There are 1-, 2-, 3-, or 4-year-olds, though the successful frog-raiser will always keep the young ones separate and apart from the full grown, which are cannibals of the first rank, and eat all which are not able to protect themselves. The 4-year-olds are considered ripe for the market, though the gourmand in frogs prefers those that are a year or two younger. A frog's life is twelve years. There are some of that age at Stege. They are of monstrous growth, being 14 inches in length and weighing as much as 4 pounds.

In California, as in colder climates, frogs hibernate in winter, and in the spring emerge after their long sleep emaciated to the last degree. Then they are fed with a mixture of oatmeal and blood, and again at the spawning season, but only for a short time. They are, most of the time, self-sustaining, feeding upon the insects they cleverly catch.

Like most creature of the animal world, frogs are capable of affection for their keeper, and demonstrate it by coming at call and allowing themselves to be handled, showing much delight in being stroked. Placed upon the ground, they readily follow their mistress for a long distance. At night the noise made by the ten thousand frogs, which, it is estimated, are contained in the three ponds, is tremendous.—Collier's Weekly.

Another Fairy Story.

The New York Journal tells of a wonderful kind of Indian corn that has been discovered and is now being grown in Kansas. This corn has sprouted from seeds perhaps 2,000 years old. The corn has grown 10 feet in five days, and there is no telling when it will stop.

Two years ago J. L. Brady, a well-known Kansas explorer, went to Marktree, Ark., and commenced exploring in the mounds of that section. He kept it up for three months and recovered many valuable things from the mounds. These things were known to have existed 2,000 years ago.

In an old earthen jar Mr. Brady found some small round seeds resembling Indian

corn kernels. He took them to his home and preserved them until one day last week when he planted 5 seed in the moist ground in his back yard.

These seed grew out of the ground and were nearly a foot high by morning. This remarkable growth has stirred up the neighborhood, and every day crowds assemble to watch it grow.

The corn has every resemblance to the Indian corn of to-day, except in the growth.

"Young Folks in the Old Country."

The letters from Germany printed in Kansas Farmer during past two years have met with favorable notice in the "Old Country."

The "Hamburger Fremdenblatt," published in the city of Hamburg, Germany, contained a favorable review of Miss Nellis's book, in its issue of July 15, 1899, written by Dr. Engle. A translation of the article is given herewith.

Herr Doctor E. Engle is and has been for twenty-five years a member of the German Reichstag, a representative of the city of Berlin. He is one of the editorial writers of the Hamburg Fremdenblatt. He it was who furnished Miss Nellis with much information about the "Deutsches Reichstag," and helped her in many ways to secure material for her Berlin letters. His review of her book which is signed by his initials, E. E., was written as his voluntary tribute to a Kansas girl. Dr. Engle says:

"This is one of the most remarkable and delightful books which I have seen, written by a foreigner about Germany. It is remarkable because of the great youth of the authoress, who, as I by chance happen to know is just at the age when young ladies among us are only leaving school. Just think! A young American girl scarcely 19, relates in uncommonly clever, witty, letters, characterized by lively apprehension and quick grasp of the situation, addressed to her papa at home, that which in the land of her forefathers she has seen and heard of German men and customs. The young authoress comes of a family that is now thoroughly Americanized, but which originally had its home in the Palatinate and which has evidently retained a lively feeling for the 'Old Country.' She has pursued her studies in German subjects at the University of Berlin, but she has also looked well round about her in Germany and, added to all she has acquired, has a surprisingly sharp eye for all that is striking in German art.

"In general she pronounces a very friendly judgment over all she has seen and heard in Germany, and I venture the remark that usually she has made correct observations even if it is to be said (as we can well understand) that she has not looked into the innermost heart of the phenomena of German customs.

"The book is written in flowing style; it shows even to the German well acquainted with his own country, so much that is almost new, or what though old, is exhibited in a new and fascinating light; and besides it is so richly embellished with very beautiful illustrations reproduced from good photographs, that it furnishes a most entertaining book of no ordinary kind for the German reader.

"The young authoress well understands the German and has sought to form her verdict from materials taken from original sources.

"It will always remain a wonderful achievement for one so young, to be able so to fashion a book like this that furnishes to earnest readers, nay more, to well informed Germans themselves, a generous feast. Several slight historical errors have escaped the notice of the authoress in the course of her work, hardly greater however than are to be met with in books of a similar character by authors in foreign lands of much riper years and greater experience. The American reader will fail to notice these little mistakes; the German will, for the sake of the great pleasure the book otherwise gives him, pass them over with a good natured smile. E. E."

A Costly Firecracker.

"Farmer Sam Simpson," says the El Dorado Republican, "set his son Sammy to harrowing in a field of fall rye the other day, but after an hour Sammy left the team in the field and went fishing in the creek. The old man discovered that Sammy had abandoned his work, so he got a giant firecracker, slipped down to the creek, and exploded the cracker right behind the boy. When the smoke cleared away Sammy was discovered in the creek, and the old man had quite a time saving him. In the meantime the team had run away, mowing down about an acre of corn with the harrow, tearing up the cabbage and cucumber patches and knocking over a pig-pen and killing a young porker. The daughter, who was churning on the porch, ran in to tell her mother, and upset the churn. The next morning the old man went to town to have his harrow

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fixed, and told the newspaper man that 'them thar canning crackers war able to do a heap of mischief.'

Mark Twain on the Fourth.

The Press Publishing Co., of London, England, sent a special telegram of Mark Twain's speech on Independence Day at the banquet at Hotel Cecil. The speech was the event of the evening, the veteran humorist being in capital form. In replying to the toast, "The Day We Celebrate," he said:

"I noticed in Ambassador Choate's speech he said you may be Americans or Englishmen, but can not be both at the same time. You responded by applause. Consider the effect of a short residence here. I find that the ambassador rises first to speak to a toast followed by a senator and I come third. What a subtle tribute to the monarchical influences of the country when you place rank above respectability. I was born modest and if I had not been things like this would force it upon me. I understand it quite well. I am here to see between them. They do justice to the day we celebrate, and in case not, I must do it myself.

"But I notice they have considered this day merely from one side, its sentimental, patriotic, poetic side. But it has another side. It has, commercially, a business side, that needs reforming. It has a historical side, I do not say 'an' historical side, because I am speaking the American language. I do not see why our cousins should continue to say 'an' hospital, 'an' historical fact; 'an' horse, and it seems to me the congress of women now in session should look to it. I think 'an' is having a little too much with it. It comes of a habit—which accounts for many things.

Yesterday, for example, I was at a luncheon party. At the end of that party a great dignitary of the English established church went away half an hour before anybody else and carried off my hat. Now that was innocent on his part. He went out first and of course had his choice of hats. As a rule I try to get out first myself, but I hold that it was an innocent and unconscious act due perhaps to heredity. He was thinking about ecclesiastical matters and when a man is in that condition of mind he will take anybody's hat. The result was that the whole afternoon I was under the influence of his clerical hat and could not tell a lie. Of course he was hard at it. It is a compliment to both of us. His hat fitted me exactly; my hat fitted him exactly; so I judge I was born to rise to high dignity in the church somehow or other, but I don't know what he was born for. That is an illustration of the influence of habit and is perceptible here when they say 'an' hospital, 'an' European, 'an' historical.

"The business aspect of the Fourth of July is not perfect as it stands. See what it costs us every year in loss of life, crippling thousands with its fireworks and burning down property. It is not only sacred to patriotism and universal freedom, but to the surgeon, the undertaker and the insurance offices, and they are working it for all it is worth. I am pleased to see that we have a cessation of

war for a time. This coming from me, a soldier, you will appreciate. I was a soldier in the southern war for two weeks, and when gentlemen get up to speak of the great deeds of our army and navy recently done, why it goes all through me; it fires up that old war spirit. In my first engagement three horses were shot from under me. The next shot went over my head, the next hit me in the back and then I retired to meet an engagement. I thank the gentlemen for making even a slight reference to war, a profession in which I distinguished myself, short as my career was."

"He That Any Good Would Win" should be provided with good health, and everyone who would have good health should remember that pure, rich blood is the first requisite. Hood's Sarsaparilla, by giving good health, has helped many a man to success.

Fruit Farming Along the Frisco.

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The Holstein-Friesian Association of America has issued a proposition for a competitive test of the breeds of dairy cattle, the test to be conducted under the direction and control of a committee to consist of officers or representatives of agricultural colleges or experiment stations.

Owing to the large amount of space in this week's **Kansas Farmer** occupied by interesting matter pertaining to the agricultural college it has been necessary to place the live stock department of the paper in the supplement. This change from the usual arrangement of the paper is for one week only.

During the past ten years over \$10,000,000 has been spent on the agricultural experiment stations of the country. During the same period the value of the agricultural products raised has been \$30,000,000,000, so that but \$1 has been spent for each \$3,000 of product. As it exists to-day the American system of agricultural stations is the most comprehensive that has ever been known, and its work has been of great benefit to the farming population.—Denver Stockman.

Copies of this week's **Kansas Farmer** ordered by the Kansas State Agricultural College will be sent to a large list of names furnished by the college. The object is to bring before persons likely to be interested the opportunities afforded by this, the largest institution of its kind in the world. Should any of our regular subscribers receive an extra copy this week he will confer a favor by handing it to some neighbor who is not but ought to be enjoying the benefits of the weekly visits of the "old reliable."

All information now at hand regarding the growing crop of broom-corn is quite favorable. The acreage this year is about 25 per cent greater than last, and indications point to 25 to 30 per cent larger yield per acre in the principal producing sections of Kansas, Oklahoma and Illinois. The only reports of damage are from Illinois. These favorable prospects have caused prices to decline about \$20 per ton in the past sixty days and a further decline of \$20 per ton is expected by the trade within the next two weeks. Harvest has commenced in limited districts of Oklahoma, but will not be general until the latter part of this month.

A circular has been issued by the Kansas State Agricultural College giving condensed information about farmers' institutes. It is well that it be known in every neighborhood in Kansas that the last Kansas legislature appropriated \$2,000 to the college to defray expenses of farmers' institutes this year. It has long been the policy of the college to cooperate with several farmers' institute organizations each year by sending some of the professors to take part. The appropriation of \$2,000 is an expression by the legislature of its appreciation of the work heretofore done and is at the same time a suggestion that the benefits should be more widely distributed. If no institute is held in your neighborhood, or if you have not been favored with the assistance of the able men of the agricultural college write to the College Institute Department, Manhattan, Kans., and get full information. About 300 institutes are to be held this year. There is no good reason why your neighborhood should be left out.

KANSAS CROPS OFFICIALLY.

The Kansas Board of Agriculture, on August 4, issued a bulletin based on reports from its correspondents in every neighborhood in the State, each especially cautioned to "make none but safe, conservative estimates, just to all the interests concerned," giving the present conditions of growing crops, together with the probable yields of the grains now harvested, viz.: winter and spring wheat, rye, oats, barley and flax.

The computations are made by counties, by which each is measured on its merits, independent of any other, and the figures arrived at represent a consensus of estimates by careful observers directly on and familiar with the ground. Whatever their defects, and all such figures are to some extent defective, no individual, or other institution, public or private, has had a fifth of the equipment and complete system for ascertaining the actual agricultural conditions in Kansas possessed by her through her board of agriculture, from its beginning in 1872. No State at any time knows its business affairs more thoroughly than Kansas; no people are more receptive than hers to helpful criticisms, and none more indifferent to those from within or without which are merely censorious.

WINTER WHEAT.

The area sown to winter wheat was 4,796,129 acres. In June the growers said 39 per cent of this had been plowed up, because of winter-killing. The same men, now that the crop has been harvested, judge from its present appearance and by the threshing so far done, that the yield for the entire acreage sown will average slightly more than 7½ bushels per acre, or a total for the State of 37,231,754 bushels. Of this they say 16,668,142 bushels, or about 45 per cent, will rate as "good," and 14,953,547 bushels, or 40 per cent, as "medium," leaving 5,610,065 bushels, or 15 per cent, as "poor," or unmerchantable for milling. The low quality of so much of the grain is not in the main due to its not having developed, but to wet weather during and since harvest and the presence of many rank, sappy weeds which had grown in the poorly set fields, been bound and stacked with the wheat, and caused it to heat and mold. It is reported that about half of the new crop will be marketed within the next sixty days, and that the area sown this fall will likely be smaller by 7 to 10 per cent than one year ago. These figures of yield are of course but preliminary and subject to some variations, up or down, when threshing is completed. Of old wheat on hand in March there was 8,906,844 bushels. One year before it was but 3,094,108 bushels.

SPRING WHEAT.

To spring wheat 192,868 acres were sown, or nearly 40 per cent more than last year, with a yield of 975,435 bushels, a decrease of 140,000 bushels, and also a decrease from the 1897 crop. Sherman, Cheyenne, Rawlins, Thomas, Decatur, Sheridan and Norton counties, in the order named, all in the extreme northwest, continue to be the chief spring wheat fields.

CORN.

In 1898 the corn area was 7,237,601 acres; in March, 1899, assessors returned an acreage 2 per cent smaller, or 7,089,229 acres. June 1, after much of the wheat had shown hopeless injury by the severe winter and the land been planted in other crops, the board's correspondents estimated that the total area devoted to corn was nearly 14 per cent greater than in 1898, thus making a total this year of 8,234,560 acres. In both 1895 and 1897 the acreage was slightly larger, but the average yield was below 25 bushels per acre. Although at best the season at first was somewhat backward, corn has later made a prodigious growth, and even in the large territory where corn is ordinarily by no means regarded as a reliable crop there is promise of extraordinary yield. The condition for the entire State, including the least promising, is by the most conservative calculation 99.63, and the least liberality in figuring could have readily put it above the 100 mark. It is especially notable that in many of the greatest corn-producing counties the condition is highest (the opposite of one year ago), thus: Jewell 112, Marshall 103, Reno 97, Washington 108, Nemaha 99, Republic 106, Smith 95, Sedgwick 100, Cloud 93, Butler 104, Decatur 115, Linn and Mitchell 111, etc. In several of the southeastern counties the situation is somewhat less satisfactory from too heavy and frequent rains, which interfered with planting and cultivation. Soil conditions are almost without exception favorable at this time, although in Kingman and a few other counties showers within the next few days would be very beneficial.

The quantity of old corn found on hand in March was 37,697,840 bushels; in March, 1898, it was 62,595,377 bushels, and in 1897, 87,720,917 bushels.

The following table shows the counties of Kansas in the order of their apparent present rank in corn acreage, the condi-

tion of corn July 31, and the bushels of wheat estimated to have been raised in each:

County.	Rank in corn area.	Condition of corn.	Winter wheat, bushels.
Jewell	1	112	506,700
Marshall	2	103	419,472
Reno	3	97	1,089,423
Washington	4	108	261,666
Nemaha	5	99	100,254
Republic	6	106	188,892
Smith	7	95	586,296
Sedgwick	8	100	1,030,312
Cloud	9	93	777,725
Butler	10	104	172,440
Phillips	11	104	420,772
Pottawatomie	12	101	99,134
Brown	13	104	213,867
Clay	14	104	338,293
Osage	15	103	51,656
Jackson	16	101	38,775
Norton	17	109	218,718
Cowley	18	98	747,232
Sumner	19	90	2,067,048
Greenwood	20	102	41,408
Coffey	21	103	189,937
Jefferson	22	99	166,200
Marion	23	97	793,544
Shawnee	24	103	49,980
Mitchell	25	111	1,479,452
Lyon	26	102	66,948
Miami	27	98	102,240
Wabaunsee	28	105	107,458
Dickinson	29	99	969,634
McPherson	30	94	1,567,620
Bourbon	31	84	30,490
Franklin	32	107	78,380
Linn	33	111	121,433
Decatur	34	115	345,560
Kingman	35	86	547,008
Rice	36	102	1,136,205
Wilson	37	100	245,550
Osborne	38	100	941,220
Anderson	39	100	62,798
Ellsworth	40	103	61,000
Neosho	41	104	761,383
Crawford	42	94	226,980
Ottawa	43	85	231,528
Stafford	44	100	644,658
Morris	45	105	998,976
Allen	46	112	24,766
Doniphan	47	87	86,085
Atchison	48	102	140,156
Cherokee	49	103	200,176
Elk	50	75	241,664
Douglas	51	70	102,588
Harper	52	102	327,024
Labette	53	97	755,580
Harvey	54	86	471,107
Montgomery	55	106	913,462
Johnson	56	83	555,588
Leavenworth	57	100	254,960
Chautauqua	58	107	258,167
Lincoln	59	102	193,840
Saline	60	102	979,080
Woodson	61	100	1,128,606
Graham	62	93	519,440
Rooks	63	100	59,990
Barton	64	90	220,584
Chase	65	100	771,768
Geary	66	98	1,646,904
Barber	67	103	46,160
Russell	68	106	255,194
Rawlins	69	87	91,146
Sheridan	70	102	779,016
Thomas	71	90	276,768
Cheyenne	72	105	262,409
Sherman	73	100	295,992
Edwards	74	65	28,344
Pawnee	75	70	25,348
Rush	76	107	190,376
Wyandotte	77	100	557,368
Kiowa	78	101	794,006
Ellis	79	104	136,410
Gove	80	92	53,292
Trego	81	92	1,939,931
Ness	82	97	65,568
Comanche	83	103	288,456
Logan	84	103	330,525
Hodgeman	85	101	148,040
Wichita	86	92	9,926
Wallace	87	100	83,155
Clark	88	103	81,136
Mcade	89	75	41,756
Lane	90	150	1,526
Scott	91	95	3,708
Greeley	92	103	26,462
Gray	93	104	99,092
Haskell	94	109	16,848
Stevens	95	87	5,660
Kearny	96	109	16,140
Finney	97	95	6,648
Seward	98	96	284
Morton	99	95	3,244
Hamilton	100	100	3,250
Grant	101	88	2,160
Stanton	102	75	2,780
	103	73	2,184
	104	83	600
	105	78	

RYE.

Acres 151,542; yield, 1,000,533 bushels; yield per acre, 10.56 bushels. Rooks County leads with 150,444 bushels, followed by Reno, Marion, Osborne and Barton, as named.

OATS.

Acres, 944,434; yield, 27,338,425 bushels, or the largest since 1895. Yield per acre, 28.95 bushels. The total acreage is 110,466 acres, or 10.47 per cent less than last year, while the increase in yield is 5,635,888 bushels, or 25.97 per cent. The quality ranges from "medium" to "good," the latter predominating in counties having the larger yields. Very little poor oats is reported. The counties reporting 1,000,000 bushels or more are Sedgwick, Sumner, Marshall, Washington, Marion, Labette and Clay, with yields of 35, 44, 32, 26, 33, 32 and 23 bushels per acre respectively.

BARLEY.

The area sown was 257,331 acres; an increase from last year of 134,619 acres, or 109.7 per cent; the yield is 3,542,220 bushels, or 770,706 bushels more than last year. Average yield per acre, 13.76 bushels. The foremost barley-raising counties are Ness, with 248,328 bushels, Barton 211,552, Pratt 207,216, Rooks 195,670, Pawnee 186,452, Sheridan 162,250, Elk 151,202, Graham 143,724 and Lane 139,160 bushels.

FLAX.

Acres, 179,711; yield, 1,291,073 bushels; yield per acre, 7.18 bushels. The area sown is 40,466 acres, or 18.37 per cent less than last year, and the falling off in product is 307,466 bushels, or 19.23 per cent. The counties having 100,000 bushels or

more are Linn, Allen, Miami, Anderson and Bourbon, followed by Cherokee, Osage, Neosho and Coffey, with a yield of from 50,000 to 80,000 bushels.

OTHER CROPS.

The condition of other crops is as follows: Broom-corn, 92; castor-beans, 85; clover, 94; timothy, 94; alfalfa, 93; pastures, 100; Irish potatoes, 94; sweet potatoes, 90; millet, 95; sorghum and Kaffir-corn, 98.

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The **Kansas Farmer** is your paper and every-day guide and helper. It helps you to make money, avoid expensive mistakes, improve your home; keeps you posted on your vocation, and every week provides information and entertainment for every member of your family. Every single issue is worth the cost of a yearly subscription. Every farmer in Kansas and contiguous territory should be a regular reader. If any reader of this article who is not now a subscriber will send us a dollar bill or postage stamps to that amount, and during the year feels dissatisfied with the investment, the publishers will refund the amount.

The editors of the **Kansas Farmer** and contributors to its columns do not claim to know everything, but they do know how and where to secure information that is desirable. Readers are cordially requested ask for what they need, and it will afford us pleasure to supply the necessary information in response to all queries.

Subscribe to-day. You need it. We want you to realize the great value of the **Kansas Farmer** to put money in your purse and make your family happy. Let us serve you.

OUR ADVERTISERS.

The excellence of the **Kansas Farmer** is largely due to the revenue received from the advertisers and this explains why its readers have had to pay only \$1 for annual subscriptions for a paper that cost the publishers more than \$1 for each yearly subscriber.

The class of advertisers whom we admit to use this paper furnish the subscriber a vast amount of really valuable information upon a great variety of subjects and, as a rule, the dealers, manufacturers and breeders who advertise are far more progressive, have better articles and stock, than those who do not thus advertise. The object of this brief note is to call our readers' attention to these points and, furthermore, to the fact that all experienced advertisers are keeping careful record of replies they receive and sales from their advertisements in each paper they use, so that every time any reader of the **Kansas Farmer** writes for a catalogue or a circular, or makes a purchase from an advertiser and mentions the fact that the advertisement was seen in the **Kansas Farmer**, he pleases the advertiser and does us a substantial benefit. We therefore request our friends to patronize our advertisers, all of whom are worthy, and, furthermore, never fail to mention **Kansas Farmer**, which materially increases its value to the advertisers, and their patronage to us enables us to materially increase the value of the paper for you.

Oil in the Well.

Editor **Kansas Farmer**:—Does the State of Kansas employ a man who would know if there was oil in water if I would send him a bottle of the water, and would he be able to tell if it would be worth while to sink oil wells for oil? I can lease the land to a developing company. I took a match and lit the water and it shows oil. Of course it might not pay. Our well is 115 feet deep; the water tastes very much like oil. Both our wells have the same taste. Kindly give this your earliest attention possible.
MICHAEL SHUMP.

Herington, Kans.
The fire test and the taste test are about as reliable as any that can be applied by anybody to water suspected of containing oil. The chemists at the agricultural college and at the university would be able to determine the percentage of oil in the water. This might not be conclusive as to the existence of oil in paying quantity. It will probably be well to correspond with Prof. Erasmus Haworth, Kansas State University, Lawrence, Kans. His knowledge of the geology of Kansas may enable him to give valuable suggestions.

Coffey County Fair, Burlington, Kans., September 12-15,

Is one of the most successful in Kansas. The association has never lost sight of the importance of grand live stock displays, and special inducements will be offered for first-class herds. Breeders with good herds will find it to their interest to correspond with the secretary, J. E. Woodford, get a premium list, and be one of the exhibitors.

When writing our advertisers please mention **Kansas Farmer**.

WEEKLY WEATHER-CROP BULLETIN.

Weekly Weather-Crop Bulletin of the Kansas Weather Service, for week ending August 8, 1899, prepared by T. B. Jennings, Section Director.

GENERAL CONDITIONS.

A warm week, with good rains across the State, extending from the southwestern to the northeastern counties, with showers in the other counties. Dry weather continues in the southern counties east of Clark, and in some of the central counties.

RESULTS.

EASTERN DIVISION.

The corn crop, generally, is in very good condition; yet in Chautauqua and Elk the late corn was injured some by drought, and in Wyandotte the corn began to fire. Oats are spoiling in shock in Doniphan and Jackson—weather too wet; elsewhere they are good. Flax is giving a fair yield in Coffey. Grapes are rotting some in several counties. Prairie-haying and fall plowing are becoming general. The third crop of alfalfa is being cut in Douglas, and will be cut in Marshall. Army-worms have disappeared in Coffey, Lyon, and Montgomery, having done but little damage. No signs of them in Morris, still at work in Wilson. Apples a heavy crop in Lyon, holding well in Morris, but dropping in many counties.

Allen county.—A fine week, well improved by farmers; corn, Kaffir-corn, and broom-corn giving fine promise; plowing for wheat well along.

Atchison.—A growing week; hot weather most of the week; grain, not threshed now generally in the stack; ground in good condition for plowing; indications are for a very small acreage of fall wheat.

Chase.—All crops suffered from very hot, dry weather until Friday; several hay-stacks blown over by Friday's wind; prairie-haying in full progress.

Chautauqua.—Too dry; late corn is being injured by drought; pastures good and stock doing well; plowing for wheat; threshing still progressing.

Cherokee.—A good week for haying, yield promises well; threshing of wheat reduces the estimated yield somewhat; oats good; corn late.

Coffey.—A good week for corn, early corn

tion; grapes abundant and fine, though some are rotting.

Wilson.—Good hay weather; corn doing well; ground getting hard; worms still at work; cabbages rotting badly; grapes some.

Woodson.—Haying progressing well; corn doing well but needs rain soon.

Wyandotte.—Corn began to fire, some before the showers came, and pastures began to dry up.

MIDDLE DIVISION.

Corn generally is in fine condition, though in Barber upland corn is suffering for rain and some has been cut and shocked. Corn is also suffering in Cowley, Harper, and Kingman in the south, in portions of Saline and Ottawa in the central, and Phillips in the northern. Some corn being cut and shocked in Ottawa. Haying, threshing and plowing are in progress. Apples are giving good promise in Reno. The web-worm is working on alfalfa and late corn in southern part of Saline.

Barber.—Hot and dry; corn on uplands in need of rain, much of it being cut; chinch-bugs damaging cane and Kaffir; pastures good and stock doing well.

Barton.—Threshing and plowing progressing; corn fine.

Butler.—Good growing week; corn looking fine; haying in progress; grapes about half a crop.

Cloud.—Another good week; early corn nearly made; late corn in fine condition; some plowing for fall seedling being done.

Cowley.—Corn suffering for rain; plowing nearly at a standstill.

Dickinson.—Good rains, the first good rains in north part since July 3; ground now in good condition for plowing; corn, which had suffered to some extent in the north part, is generally in fine condition.

Harper.—Very dry; corn much injured; pastures drying up; too dry to plow; rain needed.

Harvey.—Good week for corn; early corn practically out of danger, prospect never better for a good crop; threshing and fall plowing progressing rapidly; wheat and oats fair yields.

Kingman.—Week hot and dry; strong southwest winds beginning to affect corn; corn that is not clean seriously injured; Kaffir-corn and cane that were sown showing effects of dry weather.

Ottawa.—A trying week on corn and forage crops; some corn already in shock; early corn will be fair, late a failure unless

WALTHAM WATCHES

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rapidly; prairie-hay fine; cattle in very good condition.

Gray.—Good growing week; nearly all the corn out of the way of hot winds; grass fine; cattle and horses are not doing well on account of flies.

Kearney.—All crops doing well; good growing week; pastures good.

Ness.—A favorable week for growing crops; all forage crops looking fine; millet being put up and making best feed for years; corn continues fine, early corn getting hard, late corn in roasting-ear; threshing continues where the wheat was not weedy and where the grain was bound; much weedy wheat spoiled in stack.

Norton.—Good growing week; in some localities serious damage to corn by grasshoppers; alfalfa farmers using "hopper-catchers" for the grasshoppers.

Rawlins.—A fine corn-growing week; farmers destroying grasshoppers with traps.

Scott.—Harvest about finished, grain is hardly worth cutting; wheat will average 2 to 3 bushels per acre; all other crops fine, never were better; grass is very fine, and stock doing well; flies bad.

Sheridan.—Owing to rainy weather very little grain in stack or being threshed; grain sprouting in shock; corn is fine and promises to make the largest crop ever grown in the county; pastures and range-grass good; grasshoppers injuring some corn by eating the silk.

Thomas.—Fine weather for corn, but grasshoppers are injuring some of it; very little wheat threshed yet, stacks are too wet; late-sown forage looks fine.

Trego.—Haying, plowing for wheat, and harvesting fodder crops in progress; corn maturing slowly; Kaffir-corn a fine crop; Russian thistle ripening along railroad track and in adjoining fields; potatoes a good crop.

Wallace.—A fine growing week; commenced cutting and threshing alfalfa, seed turning out well; range-grass fine; gardens good; some army-worms in the county.

HOW SEED-BREEDING SHOULD BE CONDUCTED IN KANSAS.

There are great possibilities for the improvement of Kansas cereals by intelligent breeding. There is room for improvement in both the composition and the yield. A permanent seed-breeding department connected with the experiment station would be a very paying investment. No other State in the Union possesses such natural advantages as Kansas, for the growth of wheat and corn rich in protein.

The climate of middle and western Kansas is ideal for the growth of hard wheats equal in composition to the famous grains of central and southern Russia. Systematic selection to prevent deterioration, based upon chemical analyses, is the most necessary means for the progressive improvement of our cereals. If man will do his part, the climate will be his greatest helper.

In Ellis County, Kansas, is a body of land that every citizen in the State should attempt to secure from the National Government for the use of the experiment station. This consists of 7,500 acres of as fine agricultural land as can be found on the face of the globe. I speak of the Fort Hays military reservation, which has been abandoned as a military post for some years. It should be ceded to the State of Kansas for experimental purposes, with a provision that it could never be sold. The whole of this reservation should be turned over to the agricultural college to be converted into an auxiliary experiment station. Here would be room to test on a large scale all the new varieties of cereals that it is expected will be evolved by means of the seed-breeding experiments now in progress at Manhattan. Whenever a fine variety of wheat is bred and fixed, the station officials could put it out on the western branch station farm for rapid propagation. Three thousand acres on this tract could be devoted to the growth of improved varieties of wheat. This wheat with its pedigree could be distributed for seed to Kansas wheat-growers at a cost to cover expenses of production. If the 3,000 acres should produce an average of only 20 bushels per acre, the crop of 60,000 bushels, when distributed, would soon make a decided improvement in the wheat of the whole State. Then, think of this vast amount of pedigreed seed-wheat being annually sent forth to benefit agriculture! There is not such another opportunity in the world for the turning of science into a practical direction. I believe that such an institution as this, properly managed, would double the value of the Kansas wheat crop in a few years without any increase in the acreage.

The rest of the land could be used for breeding and testing improved varieties of barley, Kaffir-corn, sorghum, alfalfa, maize, and other forage and grain crops. The greater part of the reservation is underlaid with sheet water and no part of western Kansas affords better facilities for irrigation from the underflow. This resource, if developed, would make the seed-breeder absolutely independent of unfavorable weather conditions.

A few hundred acres of the poorest of the land could be set apart for a wild grass pasture. Here experiments could be conducted for the improvement of the native prairie-grasses. Large numbers of dairy and beef cattle could also be bred here and grown until old enough to be shipped down to Manhattan for use as milch cows or feeders.

Any one familiar with the poor quality of the land that the college now owns at Manhattan, or ever can own, will be in a position to appreciate what a bonanza to scientific agriculture the acquisition by the college of the Fort Hays military reservation would be. Let the farmers of Kansas take this matter up at once and urge upon our congressional delegation the importance of the measure.

GEO. L. CLOTHIER.

Glendale Farm Shorthorns.

A recent visit to Glendale Farm, owned by C. F. Wolf & Sons, breeders of Shorthorn cattle, Ottawa, Kans., was a very pleasant occasion for the Farmer representative, who found a splendid lot of Scotch and Scotch-topped Shorthorns of the kind that are in such strong demand by the breeding fraternity. Messrs. Wolf & Son are intelligent, progressive, and conscientious breeders, who have the entire confidence of their customers and neighbors. They have enjoyed a large and select trade so far this year. Recently they sold their old herd bull, Glendon 119370, to Mr. H. C. Duncan, a prominent Missouri breeder, for \$500. The new owner would not part with him for double the money, for the same reason that the owners of Glendale Farm value his get which they retain to breed to their young herd bull, Scotland's Charm 127264, bred by C. B. Dustin, sired by Imp. Lavender Lad 119937, out of Charm 7th, by Imp. Baron Cruickshank 106296, one of the great Clipper tribe of the Sittydon type, which produced Roan Gauntlet, Cumberland, and Commodore. His granddam, Charmer 6th was imported in 1891. To this breeding is added that of Scottish Archer and Field Marshal. Lavender Lad is one of the only two sons of Scottish Archer ever brought to America. He and Imp. Baron C. were both Duthie herd bulls which have made the Duthie-bred stock so very desirable. This new Glendale Farm herd-header, Scotland's Charm, is in every way a typical Scotch bull, and Messrs. Wolf have reason for great expectations from his cross on the Glendon heifers. Among the very desirable females noticed were Butterfly 60th by Prime Minister 94315, Rosedale Violet 12 by Imp. Thistle Top 83876, also Rosedale Violet 13, same breeding, these with two calves by Glendon and Glendale Rose by Lavender King 4th constitute the straight-bred Scotch females. The remainder of the breeding herd are Scotch-topped Matildas, Young Marys, Rubys, Ianthes, and other standard families.

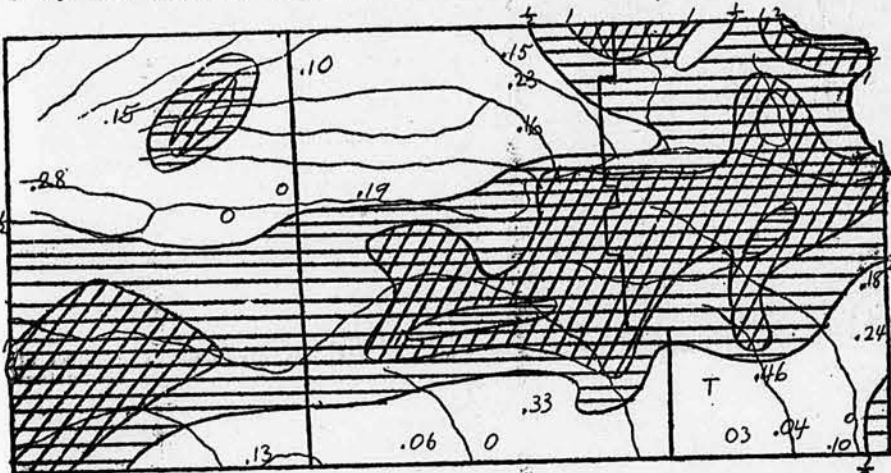
Glendale Farm always has stock for sale, and the advertisement appears regularly in the Farmer.

Keeping Kaffir-corn.

Editor Kansas Farmer:—In your last issue I noticed a query from some one signing himself Inquirer, also from Subscriber, at Herington, Kans., as to how to save a crop of Kaffir-corn. I have had several years' experience in raising cane and Kaffir-corn and have never had any trouble in saving a crop after it was made. For the benefit of your readers in general and of the parties named above in particular, I will say that I put in my Kaffir-corn with a lister or planter in rows 3½ feet apart. When the grain is ripe I head it with a Stafford header, dumping the heads at each end of the row, one load in a pile. After it has cured in these piles, I stack it, and then after it has gone through the sweat in the stack, I thresh it and I have never had any seed that heated or spoiled in any particular. I think if your readers who raise Kaffir-corn will carry out these directions they will have no trouble in saving the crop.

Stafford, Kans.

A. O. GEIER.



Horticulture.

KANSAS EXPERIENCE IN ORCHARDING.

From "The Kansas Apple."

C. H. Taylor, Eskridge, Wabaunsee County: Have lived in Kansas thirty-eight years. Have 1,400 apple trees, 5 to 15 years old, 6 to 12 inches in diameter. For market I grow Ben Davis, Missouri Pippin, and Jonathan; for family orchard I would advise Winesap, Rawle's Janet, Cooper's Early White, Maiden's Blush, and Jonathan; and I would discard nearly all others. I prefer bottom land, with black loam and open subsoil, north slope. Would plant 1- or 2-year-old, low-top trees, 25 feet apart each way. I have grown root-grafts with success. I shall cultivate as long as the trees live, growing corn among them until the growth of the trees prevents it. I believe all the windbreaks necessary is an ordinary fence. I use traps for the rabbits and a knife for the borers. I thin the fruit on the trees in the early summer, after they are well set. I believe barn-yard fertilizer beneficial to any orchard. I pasture my orchard with hogs, and think it advisable, and that it pays. I have some insects, but do not spray; I burn some. I pick by hand in half-bushel baskets; sort into 2 classes, market and cider; pack into barrels, and usually sell in the orchard at wholesale. Never shipped to a distant market. Do not dry any. Have stored some for winter in the cellar in bulk, and find that the Missouri Pippin, Winesap, and Rawle's Janet keep the best. I do not irrigate. Price averages about 25 cents per bushel. I use ordinary farm hands at \$15 to \$20 per month.

Frank Seifert, Strawberry, Washington County: I have lived in Kansas twenty-eight years; have an apple orchard of 150 trees, from three to twenty years planted. For commercial purposes I prefer Ben Davis, Missouri Pippin, and Winesap, and for family orchard would add Maiden's Blush. Have tried and discarded Willow Twig on account of blight. I prefer limestone upland with an eastern aspect. I prefer 3-year-old trees for planting. I cultivate my orchard for eight or ten years with a plow and harrow. I seed bearing orchard to red clover. Windbreaks are essential; would make them of 1 row of box-elders and 2 rows of plums. I fertilize my orchard with straw and hay, and think it advisable, on all soils. I never pasture my orchard; it is not advisable. I do not spray. I pick my apples the old way [?]. Sell my apples in the orchard. I sometimes store for winter in bulk in an arched cellar, and am successful. I find Ben Davis, Missouri Pippin, and Winesap keep equally well. Prices have been from 50 cents to 75 cents per bushel.

J. T. Travis, Aurora, Cloud County: Have lived in Kansas twenty-six years; have an apple orchard of 75 trees from 5 to 20 years old. I prefer low land, black loam soil with clay subsoil, and a northern slope. I prefer 2-year-old trees, straight with no forks, the limbs low down, planted in furrows made by a plow. I cultivate my orchard as long as I can get through it, with potatoes and sweet corn, using a harrow often enough to keep weeds down and ground smooth. Cease cropping when the trees get too large for sweet corn to do any good. Windbreaks are essential; would make them of Russian mulberry, planted in 2 or 3 rows, 8 to 10 feet apart, on all sides of the orchard. I prune little, only enough to thin out the tops and keep limbs from rubbing each other, and to give light. I fertilize my old orchard with any kind of coarse stable litter; I pile it in heaps between the trees and let it lie until it rots. I pasture my orchard with hogs when it grows to wild rye and is too large for me to plow; I think it advisable only when the trees get foul; it pays if not pastured with too many and they are not kept on too long. My trees are troubled with leaf-roller, and my apples with codling-moth. I have sprayed, but only to a limited extent.

Sam Kimble, Manhattan, Riley County: Have been in Kansas thirty-eight years. Have an orchard of 2,500 trees not yet in bearing. They have been planted three, four and five years. I have set out for market Ben Davis, Missouri Pippin, and Winesap, and for family use about 30 kinds, in variety. I am located on upland, with clay subsoil, mainly northwest slope. I planted 3-year-old trees, stocky and low-headed, in holes 25 by 30 feet apart, getting on my knees to work the soil in about the roots. I crop to corn, cultivating well, and shall keep this up as long as 3 rows can be fairly grown between 2 rows of trees. I believe in plowing if you do not get too close to the trees. When my orchard comes into bearing I shall keep up the cultivation, but grow no crops. I believe windbreaks are very desirable, and should make them of cottonwood, elms, or any quick-growing forest-trees. To keep

off rabbits I tie on corn-stalks with binder-twine. I prune carefully to shorten the heads and keep down watersprouts, and believe it beneficial. I believe thinning will pay when the fruit sets too thickly. I believe in lots of fertilization, and use all the stable litter I can get; I don't think you can use too much. I believe that young calves might be pastured to advantage in an old orchard. Have not sprayed any, and depend on rains for water.

J. B. Starns, Fairmount, Leavenworth County: Have lived in the State forty-one years; have 1,800 apple trees, extra large, 17 years old. Planted for market Ben Davis, Winesap, Jonathan, and Missouri Pippin; and for early use Early Harvest, Cooper's Early White, Maiden's Blush, and the Jeniton. Have discarded the Red June as too small and falling too badly. My ground is black loam upland, sloping north and east. I planted 2-year-old trees in furrows made by the plow, 20 by 32 feet. Would cultivate in corn for five years, using the breaking plow and cultivator; then sow to clover. Windbreaks are not necessary here. I trap the rabbits. For borers I bank around the trees in May, and take it away in September; this exposes the tree, and the borers are taken out easily with a knife. I prune some, and think it pays to take off watersprouts and shape the trees a little. Do not thin and do not fertilize. I pasture in the spring and fall, after the apples are gathered, with pigs; it is an experiment. I have some tent-caterpillar, twig-borer, and codling-moth. Have never sprayed any. I pick in sacks and baskets, emptying into bushel boxes, which are hauled on wagons made for that purpose, to the place for packing. I make 3 grades, ship-pers, seconds, and cider or driers. The boxes are taken from the wagon and culled, and shippers packed in barrels. The rest are put in piles, which are afterwards culled, and the seconds put by themselves. We mark barrels with name of variety, and haul to market on wagons made for the purpose. We often sell at wholesale in the orchard; we sell the seconds in bulk. My best market is Leavenworth; have never shipped any away. Have never dried any, and do not store any for winter. Prices have ranged from 50 cents to \$1.75 per barrel. I use men only, and pay \$1.50 per day.

D. N. Barns, Leavenworth, Leavenworth County: I have lived in Kansas thirty-seven years; have 2,000 apple trees 20 years old. The best for commercial purposes is New York Pippin (Ben Davis). For family orchard I prefer Jonathan, Winesap, Minkler, Huntsman's Favorite, and Lowell. I have tried and discarded Nonesuch. I prefer bottom land, with black loam soil and clay subsoil, with south slope, in my locality. I plant good, stout, and thrifty trees, 2 to 3 years old, 16½ by 33 feet apart. I cultivate until the trees are large enough to shade the ground. In the young orchard, for the first seven or eight years, I usually grow corn, wheat or oats; in a bearing orchard I grow orchard-grass and timothy and clover, separate or together. I have not yet ceased cropping. I believe windbreaks are essential, made of hills, trees, or hedge fence. For this purpose I would advise to first find the hills; then plant the orchard and trees or hedge. I dig out the borers, and trap or shoot the rabbits. I believe it pays to prune some to get rid of surplus wood. I believe it pays to thin apples and I do it in July. I fertilize by pasturing with cows, and believe it pays. Am troubled with some insects, but have never sprayed. We pick from a ladder, each man carrying two baskets; we sort into 2 classes on a table. In the first class we put apples not damaged too much and large enough, and in the other we place the small ones.

J. F. Ruhlin, Wetmore, Nemaha County: Has been in Kansas seventeen years. Owns an apple orchard of 1,150 trees, set out from one to three years. Set Ben Davis, Jonathan, Winesap, Missouri Pippin, and for family orchard would add the Maiden's Blush, Rambo, Rome Beauty, and Grimes' Golden Pippin. Has discarded Early Harvest, Red June, and Red Astrachan. Wants upland always, north or northeast slope if possible, and a loose, friable soil, with gravelly subsoil. On planting, he says he uses 2-year-old, short, stocky trees with bushy tops and lots of roots, which he prunes back at setting. Sets trees deeper than they grow at the nursery, 20 by 30 feet. Puts a barrel half full of soil and water on a shed, and puts 10 to 20 trees into it at a time; takes out a tree and sets it with as little exposure of roots to the air as possible. Cultivates well, keeping the ground clean in the tree row all summer. This winter, 1897-'98, he saw fine 10-year-old trees completely girdled by mice, in an orchard that was neglected last summer, and weeds and grass allowed to grow next the trees; these held the snow around the trees, and allowed the mice to burrow

under to the tree. Grows corn as a protection to the trees in summer, using 5-tooth 1-horse cultivator, shallow and often, near the trees, until they begin to bear, when he sows to clover, and mows frequently. Thinks windbreaks are essential, and if used would make them of Osage orange or mulberry, not very close to trees on north and west sides. Protects from rabbits by wrapping with corn-stalks and will try leaving them on this summer as a protection from sun-scald. Prunes interlocking limbs to get into shape; believes beneficial. Believes thinning would pay on choice varieties if tree was very full. Believes in using all the barn-yard litter possible, especially on poor soil. Never has pastured orchard, but might put in horses or sheep. Thinks it would hardly pay. Never has sprayed, but believes in it. Digs out borers. Prefers to wholesale fruit in orchard.

Joseph C. Rea, Brenner, Doniphan County: Have been in Kansas twenty-seven years. Have 4,000 trees 6 to 12 years old. I prefer for commercial orchard Ben Davis and Missouri Pippin; add, for family orchard, Minkler. Discarded Lawver because it did not bear. I prefer side-hill, clay loam, with a north slope. Prefer trees without forks, and plant a little deeper than in the nursery. I cultivate with the plow and cultivator until they begin to bear. I plant a young orchard to corn, a bearing orchard to clover, and cease cropping when they begin to bear. Windbreaks are not essential. I wrap my trees with corn-stalks to protect from rabbits. I prune to improve the fruit, and think it beneficial. Never dry apples. Think that if Jonathans are planted near other trees they are better, bigger, and fuller. Winesap and Chenango Strawberry are varieties adjoining mine. Do not fertilize; would not advise its use. Do not pasture orchard; not advisable. My trees are troubled with buffalo tree-hopper. I dig borers out. I pick by hand and sort from a table. I sort into 3 classes—first, the fairest and reddest; second, smaller and paler; third, rough and poor. I prefer 3-bushel barrels to pack in; fill as full as possible, and mark with my name. I sell in orchard, also wholesale. Leave culls on ground. My best market is home; the buyers come and get them. I store in barrels, and find that Minkler and Mammoth Black Twig keep best. I got \$1,000 for 805 barrels last year. I employ young men and boys, and pay \$1.25 and \$1.50 per day.

Eli Hoffman, Donegal, Dickinson County: Have been in Kansas nineteen years. Have 500 apple trees, nine years planted, made up of 150 Ben Davis, 150 Missouri Pippin, 75 Winesap, and 125 of summer and fall varieties. I prefer bottom land; don't want hilltop, unless level; don't want any slope; would subsoil the year before planting, then plant 24 feet apart each way the following year. Grow corn or potatoes the first four years, and after that, nothing. Cultivate up to 2 years old; the disk and corn cultivators are good the first years; I keep it as clean as a California orange grove; cease cropping after four years. I think windbreaks are necessary, and would make them of a double row of mulberries 8 feet apart. For rabbits I put wire screen around the trees. I use pruning-knife and saw to give air. I would not pasture an orchard. Have not sprayed, but intend to, with London purple.

E. M. Glaspey, Nortonville, Jefferson County: Have lived in Kansas fourteen years. Have 700 apple-trees from 20 to 25 years old. Prefer Ben Davis, Missouri Pippin and Winesap for market; and Winesap, Golden Sweet and Early Harvest for family use. I prefer bottom land with north aspect; soil suitable for wheat is good for apples; would turn in cattle after the crop is gathered, and think it pays. When the bloom falls I spray with London purple. I pick in half-bushel baskets and place in large piles in the orchard. I sort into 3 grades; No. 1 is best, which I generally sell to shippers; No. 2 next, which I sell in the city to families or to dealers; the culls I peddle out, and also make into cider. My best market is Atchison. I shipped once to a commission house in Topeka, but it did not pay. I never dry any; sometimes I store for winter in bulk in the cellar, and find that Missouri Pippin and Willow Twig keep the best. I employ men and boys at 75 cents to \$1 per day.

W. H. Tucker, Effingham, Atchison County: Has lived in Kansas thirty-eight years; has an orchard of 500 trees, 200 of them planted twenty years and 300 planted six years. Advises for commercial orchard Ben Davis, Gano, and Missouri Pippin, and adds to them for family orchard Early Harvest, Maiden's Blush, Jeniton, and Jonathan. Has discarded Smith's Cider. Prefers rich sandy upland with red clay subsoil, with a northeast slope. He planted vigorous 4-year-old trees, first plowing, then twice harrowing; then furrow out deeply each way 30 feet apart, and set a tree at each crossing. He cultivates

with ordinary tools from six to eight years, until trees begin to bear, growing corn, potatoes or beans in the orchard; then seeds to clover. Believes windbreaks essential and makes his of soft maple, ash, and walnut. For rabbits he uses Frazer's axle grease and kills borers with knife. Prunes little until after trees are 15 years old; prunes only to give shape and to keep from being too bushy. Uses stable manure and lime as fertilizers and believes it would pay on all soil he ever saw. Pastures his orchard with hogs at certain times of the year, and says it pays. Is troubled some with insects, and sprays twice each year with London purple. Has not been fully successful. Picks in baskets and sacks. Makes two grades—selects and sound fair size. Packs only in barrels; often sells in orchard. For last few years has used a few culls for vinegar and let the rest rot on ground. Best market at home. Has tried distant market and made it pay. Never dries any, and for the last six years has stored none for winter. Prices have ranged from 20 cents to 40 cents per bushel. Uses farm help at 75 cents to \$1 per day.

Planting Trees in the Fall.

Editor Kansas Farmer:—For people living in the eastern part of Kansas I would suggest the planting of a few acres of hardy catalpa trees for a timber lot. To those who have the ground and feel so inclined, the fall of the year, for many reasons, is by far preferable to the spring for planting. Any ground that will grow good corn will grow trees. Bottom land will produce usable timber quicker than prairie; the growth of the latter being somewhat slower, it makes the better timber. Plow and harrow the ground before planting in this way: work one way about 5 feet apart, then plow the other with a lister the same distance, setting one tree at each cross mark, putting just enough dirt around the roots to hold in position. The trees should be procured from some reliable nurseryman as it will be much cheaper than to grow them yourself. They should be from 18 to 30 inches high. I would not advise the use of small seedlings as they cause considerable trouble in cultivating in the early part of the season. After all the trees are planted go over the entire lot with a 2-horse cultivator, throwing enough soil around the tree to fairly fill the furrow; care should be taken to straighten up any trees that have been knocked over or covered up by the cultivator. After this the orchard can be left alone until spring. Should some of the trees be girdled by the rabbits during the winter it will cause no trouble, for the tree will send up a strong shoot that will be as tall as its neighbor by the following fall. Do most of the cultivating after July 1; as a rule we have plenty of moisture in the spring and early summer, but from July 1 until fall is the trying time on young trees. They should be well cultivated, because they do not have enough forage to keep out the hot sunshine and strong south winds. Should all the wood growth not have time to ripen, and some of the tender growth be winter-killed, it will not injure the tree in the least.

Some people may object to the above method, but if they will go into a well-established grove and watch the summer growth, they will find fully one half of it made after July 1. For the first four years the cultivator should be used regularly, during which time the trees should not be pruned. It is best to leave all branches until they completely shade the ground, then care should be taken, so as not to admit too much drying sunshine. All trees inclined to fork or send up two or more central stems should be attended to by removing all but one stem; such work can be done in the winter time. Allow all cuttings to remain on the ground, as they help to hold the snow and keep the moisture. Trees grown on above plan, will take from twelve to fifteen years to make good fence-posts, and twenty to twenty-five years for telephone-poles. It seems to me that any one who has watched the growth and development of Kansas for the last twenty years, can not but believe that the next twenty years will be much greater. Therefore the demand for small timber will continue to increase with the growth of the State.

It is a pleasure and delight for me to walk through a well-established timber-lot. I love to watch the growth from year to year. If said grove is in a prairie region, it makes a home for hundreds of birds. Many thousands of trees are planted that are of little value when grown; to any who have planted such I would say, put out a few thousand catalpas, and in a few years you will be selling posts to the farmers who could not wait for them to grow.

GEO. W. TINCHER.

Topeka, Kansas.

Look out for malaria. It is seasonable now. A few doses of Prickly Ash Bitters is a sure preventive.

In the Dairy.

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

Buy a Tester.

The more one studies the creamery business the more he sees the necessity of every patron having a hand tester and knowing how to use it, not because the creamerymen need watching in particular, though there are instances of that kind on record, but because the patron needs it for his own personal satisfaction and benefit. There is not a creamery in the State but has numbers of patrons who are constantly kicking about the test. It is not so high as it was last month, or not so good as neighbor so-and-so's and his cows are just as good and he fed and cared for them just the same. He knows he ought to have a higher test.

Now unless he has a tester and has actually tested his herd he has no grounds whatever to make such complaint. No man can tell what his cows will test for a certain period or month without actually testing them. Many thing enter in the life of a herd which will influence the test. It is the practice of many patrons to take a little cream from the milk sent to the factory, for family use. A pint a day taken from 100 pounds of 4 per cent milk would decrease the test several tenths, probably giving about a 3.5 test, depending on the richness of the cream taken. This is very little to remove for home use and it is done with no intention of cheating the creamery but it is not realized that so little will make so much difference in the test.

Let every patron have a tester and do a little experimenting along these lines and it is safe to say that there will not be half so much said about low tests, rascally creamerymen and the like.

If one hasn't enough cows of his own to justify him in buying a tester three or four neighbors could buy one together. It will not only afford them peace of mind in regard to the creamery test but if they will carefully test each cow in their herds twice a month they will discover that some of them are eating their heads off, in other words are not giving enough butter fat to pay for the feed they eat. Getting rid of one such cow would many times more than pay for a testing outfit.

ED. H. WEBSTER.

Tobacco and Butter.

Ex-Governor Larrabee, of Iowa, who is on the Board of Control of the State Penitentiary, is reported to have said the following in a recent interview:

"We have not shut off the allowance, but have reduced it to 2 ounces a week to those now in the penitentiaries, while those hereafter will have no tobacco allowed them. In place of tobacco we will give them butter, which they have never before had in the prison. Butter is an Iowa product and tobacco is not. The change is one in the interest of economy, cleanliness, and health. Many of the convicts were exceedingly filthy in their use of tobacco, which was only to be expected considering the class from which our criminals are recruited. For a time the deprivation may seem a hardship, but we believe it will work benefit for the convicts in the long run. At any rate the penitentiary is a place of punishment, and the convict who suffers from being deprived of his tobacco is simply experiencing part of his punishment."

It is somewhat surprising to know that some of the criminals in the named institution have received no butter, or at least something that is called butter. We have heard upon good authority that many State institutions are feeding their inmates upon oleomargarine, but never before did

we know that tobacco was taking the place of butter. A penitentiary is supposed to be a reformatory as well as a place of safe keeping for those unable to govern themselves. If this is true then the food supply and surroundings should be such as to inspire men to a better and nobler life. Here as elsewhere actions speak louder than words. This will never be done by giving tobacco in the place of butter. People can not be educated to respect the rights of others and at the same time encouraged to disregard those rights by puffing tobacco smoke in other people's faces and shooting tobacco juice where it is a source of constant annoyance to those who are obliged to come in contact with it. The man who chews tobacco usually has very little conception of personal cleanliness, and surely this is one of the essential virtues in a reformatory.

But while we condemn tobacco as an element of reform, we would also discourage the use of oleomargarine. Usually the inmates of reform institutions have seen the dark sides of human life and they need something that will lead their thoughts to the bright side. Give them good wholesome food but do not load their stomachs with oleomargarine. The State can well afford to encourage a legitimate industry but it can not afford to practice deception and make the people under its charge believe they are eating butter while they are consuming oleo, the contents of which, to say the least, are uncertain. Consistency is a jewel, whether at a State institution or with a private citizen.

D. H. O.

Some Inquiries About Testing.

Mr. L. C. Waters, Berryton, Kans., writes in regard to the Babcock test as follows:

1. "Should not two Babcock testers give quite or nearly the same result from milk samples from the same dairy, the dairy conditions being practically the same?"
2. "Can any one make the test readily, or is the operation too technical for the ordinary farmer or milkman?"
3. "Will the length of time a cow has been in milk make much difference in the per cent of butter fat? I have one cow that has been milked nearly three years. My cows show a difference of about one-half of one per cent in the tests of this season and last, the 2 tests being by different parties at different places, the cows being the same and their pasture the same each year."
4. "Will the distance hauled and the temperature of the milk when sampled make any material difference in the showing of the butter fat?"
5. "In testing the milk of individual cows, how many days should the milk be sampled before testing?"

"I have never seen the operation of testing performed and I presume there are many others in whose minds many of these same questions have arisen, and I think an article from your pen covering the ground would be appreciated by all such."

ANSWERS.

1. Two Babcock testers should give the same results in testing the same sample of milk, providing the sample is properly stirred before measuring. We should bear in mind that the test of a herd, and especially of an individual cow, may vary from day to day or from milking to milking. A sample of milk from the herd usually does not vary over a few tenths from one day to another. These remarks apply only to milk that has not been skimmed for family use. Where cream or even milk is removed there will always be an uncertainty about the test.
 2. Any one who exercises common sense and good judgment, and will follow directions, can make the test.
 3. There will be a decided increase in the per cent of fat during the latter part of the period of lactation. We have cows at the agricultural college that test from 3 to 4 per cent when fresh and 5 to 6 per cent near the close of their milking period. We have had no experience with cows giving milk three years without calving and can not speak with authority as to how the test might vary.
 4. Not unless the distance and temperature has caused the milk to churn and form particles of butter, when the test may be injured very materially. When measuring milk for the test bottle the temperature should be between 60 degrees and 70 degrees F.
 5. Experiments elsewhere have shown, and our experience at the college has confirmed the results, that samples from 8 successive milkings, previous to the 15th and the end of each month, will give an accurate test of individual cows.
- Any one wishing to study the subject of milk-testing is advised to get a copy of Farrington and Woll's book on "Testing Milk and its Products," or better still come to the Kansas Dairy School and learn all about the test and the different kinds of testers, and at the same time learn how to

feed and care for the dairy cow so that she will produce from \$50 to \$75 worth of dairy products in a year. D. H. O.

Horn-fly Remedies.

Considerable interest has been manifested in the tests that have been carried on at this station, to determine the merits of the various horn-fly remedies that are offered for sale upon the market.

In all the tests a careful record was kept of the amount and the number of applications for each mixture that was used. After the applications were made a careful watch was maintained over the cattle during the day and the following days. By these means it was possible to get an estimate of the relative cost and efficiency of the various substances used.

It is needless to say that interesting and valuable results were obtained. A number of the mixtures proved to be absolutely worthless, as we had anticipated, while others were quite effective. It is, perhaps, well to state here that some mixtures that were good and effective, were as a rule too expensive. This one factor itself prevents their general use. Cheapness is a factor that can not and should not be anything like effective had to be applied once a day, costing at each application from about 15 to 20 cents a cow. From a business standpoint, no dairyman can afford to treat his cows with such an expensive luxury. Another mixture which seemed to repel the flies for a few hours was after this time actually an attraction to the flies.

From the results obtained, we would advise all intending to use proprietary mixtures, to experiment first on a small scale, keeping a careful record of the efficacy of the mixture and the cost of each application. If the mixture proves to be lasting and of a moderate price continue its use, but if not, discard it, and try another till an effective mixture is found. Do not continue to use a remedy because it is well advertised, for in many instances you are simply paying for an advertisement by which others are induced to waste their time and money. J. A. CONOVER.

Zacona.

July 31, finished up Zacona's record for the month. It is as follows:

Milk, 1,250.1 pounds; butter fat, 44.89 pounds. The best seven days in the month she made 10.85 pounds of butter fat. The highest yield of milk in any seven days was 302 pounds.

The very hot days of last week cut down both the milk yield and the butter fat, otherwise she would have made a better record.

As to her record for August I can not expect more than 1,150 pounds. This seems a considerable falling off, but we must remember that it is a very hot month, and cattle will not eat well this hot weather.

J. A. CONOVER.

Kansas Dairy School--Farm, Creamery, and Cheese Courses--January 3 to March 24, 1900.

INSTRUCTORS.

- H. M. Cottrell, In Charge of Course, Feeds and Feeding.
 Paul Fischer, Bacteriology, Diseases of Dairy Cattle.
 J. D. Harper, Refrigeration and Refrigerating Plants.
 D. H. Otis, Breeds and Breeding, Milk-Testing.
 Butter-Making and Creamery Management.
 Cheese-Making.
 E. H. Webster, Separators and Dairy Bookkeeping.
 J. A. Conover, Herdsman, Feeds and Feeding.
 J. Lund, Boilers and Engines.

CREAM SEPARATORS.

De Laval "Alpha" and "Baby" Separators. First-Best-Cheapest. All Styles-Sizes.

Prices \$50.- to \$800.-

Save \$10.- per cow per year. Send for Catalogue.

THE DE LAVAL SEPARATOR CO.,
 RANDOLPH & CANAL STS., 74 CORTLANDT STREET,
 CHICAGO. NEW YORK.

The Pittsburg Creamery Company writes: "Our butter market here is better than the ordinary, and we sell so much cream and whole milk from the creamery that it enables us to make an extra good showing to our patrons."

New Through Pullman Service Between Denver and St. Louis.

On June 18 the Great Rock Island Route inaugurated through Pullman Sleepers between Denver and St. Louis via Kansas City and the Missouri Pacific R'y. East-bound car leaves Denver daily at 2:35 p. m. on the "Colorado Flyer," arriving in St. Louis 6:15 p. m. the next day. Westbound car leaves Kansas City daily on "Colorado Flyer," at 6:30 p. m., arriving in Denver 11 a. m. next day. This is the fastest through car line between Denver and St. Louis. The cars are broad vestibuled, of the latest pattern and most luxurious type. Advantages in patronizing this service will be: The quickest time, no change of cars, absolute comfort. The best Dining Car service in the world. For full information see your agent or write

E. W. THOMPSON, A. G. P. A., Topeka.

FOUND!

For \$7.

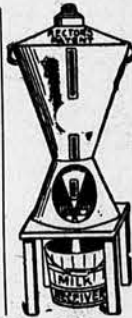
A Cream Separator

THAT

DOES THE WORK

For particulars address

The R. A. C. SEPARATOR CO.,
 107 K. & P. Bldg., - - KANSAS CITY, MO
 RELIABLE AGENTS WANTED.



OUR BEARDED FIFE...
 OR RELIABLE MINNESOTA WINTER WHEAT

is the kind of wheat Winter Wheat growers have been looking for. It is a safe and sure crop variety. It is hardy and will not winterkill; it is the best milling wheat and a heavy yielder. It is not a new and untried variety any more but has been grown long enough everywhere and when other varieties winterkilled entire, our Bearded Fife came through all right and made a full crop. Our yield here is from 30 to 35 bushels per acre, and it yielded 45 bushels per acre at the experiment station in Indiana. Here are a few more of the hundreds writing us about our wheat:

Mr. F. Shale, Warren Co., Mo. The 10 bushels Bearded Fife or Reliable Minnesota, came through the winter all right and made a full crop, while 30 acres of other winter wheat beside of it had to plow under on account of being winterkilled entirely.

Mr. F. A. Huebner, Manitowoc Co., Wis. Your Bearded Fife is the only winter wheat in this neighborhood left to produce a good crop, all other is plowed under what was left after the severe winter of '98 below zero. It sells here as No. 1 Hard Spring Wheat at 5c above price for winter wheat. It is the hardest and best all-around winter wheat.

Mr. J. H. Fahrenkrog, Macoupin Co., Ill. Threshed 530 bushels from 15 acres.

B. H. Ahrens, Washienaw Co., Mich. Threshed 100 bushels from 1 1/2 acres.

So with many more of our brother farmers who had crops like these in unfavorable seasons. Our Bearded Fife or Reliable Minnesota Winter Wheat will do as well with you, and you can always depend on a certain and sure crop that will pay you. Our prices this year are very reasonable.

1 bu. \$1.40 2 1/2 bu. \$3.50 5 bu. \$6.50
 10 bu. \$12.50 20 bu. \$24.00. Sacks included.

We are farmers and grow our Seed. Winter Wheat grown here by us that comes through the winter all right with 50 below zero, is certain to do well anywhere. Write for catalogue or circular giving full description, or send order right away at the prices quoted above, which are the lowest we can make. Send order early as our supply is not unlimited. Out this advertisement out and preserve it. It will only appear once. Timothy and other Grass Seeds for fall sowing. Write at once for catalogue and prices.

FARMER SEED CO.,
 Farmers and Seed Growers. Fairbault, Minn.

Light Running.

Many dairymen are deterred from buying a hand separator because they "run so hard." Some do, but a child can turn the



Empire Cream Separators

without fatigue. They require about one-half the power of other machines of equal capacity. We guarantee the Empire machine to fulfill every claim we make and to give perfect satisfaction to every purchaser, or your money back.

Catalogue of the largest line of hand separators in America for the asking. Agents wanted.

U. S. Butter Extractor Co., Newark, N. J.

Dairymen, Don't You Know

That you are losing cream and doing work That might be saved if you were using the

IMPROVED U. S. SEPARATOR

It has been proved often that it not only SKIMS THE CLEANEST, but is the *Easiest to Operate and Clean*, therefore **IS THE BEST TO BUY.**



Write for our free illustrated catalogues for full information.

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

Missouri Anchor Fence.

The Anchor Fence for the farm, railroads, or the ornamental style, is having a very extensive sale and is exceedingly popular. At the Trans-Mississippi Exposition at Omaha, last year, it was awarded the gold medal. Responsible agents are wanted in Missouri and Kansas. Address the manufacturers, Missouri Anchor Fence Co., St. Joseph, Mo.

Farmers' Institutes.

The following institutes in which professors from the agricultural college will take part have been announced:

August 11—Prairie Center, Johnson County.

August 12—Clatawa, Johnson County.

August 17—Ozawkie, Jefferson County.

August 19—Valley Falls, Jefferson County.

August 23—Winchester, Jefferson County.

August 25—McLouth, Jefferson County.

August 26—Meriden, Jefferson County.

C. E. Stubbs, chairman of the committee of arrangements of the Denver Horse Show and Mountain and Plain Festival, writes that it will occur in Denver, September 25 to 30, both inclusive. A horse show will be given on the last two days. It is the intention to make this event strictly high-class and conduct it after the manner of such entertainments now given annually in Eastern cities. Its purpose is to bring together the best possible exhibits of high-class horses, and fashionable turn-outs, to compete for prizes under such rules as usually govern exhibitions of this kind.

Notice.

All persons interested will take notice that my petition is on file in the office of the Shawnee County, Kansas, Probate Court, asking for authority to sell the following-described real estate situate in Shawnee County, Kansas, belonging to the estate of John S. Frey, deceased, for the purpose of paying the debts of said estate and the expense of administration, to wit:

One-eighth interest in lot 115 Kansas avenue; south 7 1/2 feet lot 110 and north 3 1/4 feet lot 112 Kansas avenue; lots 97, 99, 101, 103, 105 and 107 Madison street; lots 194, 196, 198, 200, 202, and 204 First avenue; south 50 feet lot 5 Central avenue, and lots 124, 125, and 126, and lots 133, 134, 135, 136, 137, 138, 139, 140, and 141 Central avenue, North Topeka, Frey's Addition.

Equity in lots 157, 158 and 159 Central avenue, North Topeka; equity in lots 80, 81, 82, 119, 120, and 121 North Jackson street, North Topeka.

Equity in lots 40, 41, and 42 North Van Buren street; lot 101 and north one-half lot 100 Jackson street, North Topeka; lots 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, Jackson street, North Topeka, Frey's Addition.

Said petition is set for hearing at the office of the Probate Judge, in the City of Topeka, said county, on Friday the 25th day of August, 1899, at 9 o'clock a. m., at which time and place you can make known any objections you may have to the granting of such order. Dated August 2, 1899.

J. B. McAFEE,
Administrator of said estate.

FOR SALE!**TEXAS SCHOOL LANDS.****Soon to Be on the Market.**

In addition to the public free school and asylum lands belonging to the State, now on the market, by an act of the last legislature, which takes effect and goes into operation on August 27th, 1899, three million acres more will then be placed on the market for sale by the State, at the minimum price of one dollar per acre for grazing land, and \$1.50 per acre for agricultural land, on terms within reach of all, viz.: one-fortieth of the purchase money cash, and the balance on forty years' time, at 3 per cent annual interest. This and all the other free school and asylum lands can be bought by actual settlers in tracts of from 80 acres to four sections (640 acres each). All detached sections can be purchased by any person over 18 years of age, regardless of settlement or place of residence.

On receipt of one dollar will send a map of the State by counties, and a pamphlet giving a full text of the State laws governing the sale of these lands, the forms used in making application to purchase same, the names of the counties in which the same are located, and the quantity in each, together with full instructions, how to proceed to purchase any part of the same when placed upon the market.

This is an opportunity of a lifetime to get some good land cheap, as cheap lands in Texas will soon be a thing of the past. Send money by draft, P. O. order or express. Money order payable to undersigned.

Address all communications to
G. W. MENDELL, Sr.,
Austin, Texas.

References:

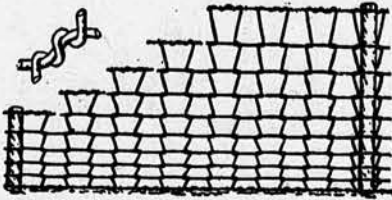
Any of the State or county officers, or any bank in the city.

Samples copies of Kansas Farmer sent free on application.

INSURE YOUR PROPERTY**THE FARMERS' ALLIANCE INSURANCE CO.**

Established in 1888. Paid \$200,000 in Losses.

The mutual plan is the cheapest and best. You pay for what you get at its actual cost. Every property-owner can and should have the protection we offer. For agency or further information, address
C. F. MIGNBACK, Secretary, McPherson, Kansas.

**Warner "Common Sense" Fence.**

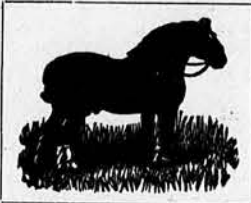
Patented November, 1896.

OTHERS GOOD—NONE BETTER.

More sold in Kansas than any other fence.

It is made of heavy endless wire, with or without barbs top and bottom. Hog and pig tight. If your dealer does not sell it, write direct to us for prices and circular.

COMBINATION FENCE CO., Melvern, Kans.

Prospect Farm

H. W. McAFEE,
TOPEKA, KANSAS,

Breeder of PURE-BRED

CLYDESDALE HORSES and
SCOTCH SHORTHORN CATTLE.

FOR SALE: Registered stallions and mares. Also the straight-bred Cruick-shank herd bull, MY LORD 116503. Visitors Welcome.

Warren M. Crosby's.

The new fall goods are coming in every day. New Silks, New Black Goods, New colored goods for dresses, New Black Crepons were never so good as now. We make a specialty of a \$1.50 quality that's worth \$2. When in ask to see it. New Hosiery, and New Gloves, New Ribbons, New Laces, New Handkerchiefs, New Furs, New Velvets, New Linings. Summer lines being closed. Wrappers at one-third regular price. Wash Goods at less than half price. French Ginghams and Dainties we have been selling at 25 cents—now 15 cents. We yet have a good line to select from. Closing all summer stuffs very cheap.

Warren M. Crosby's.**WHY YOU SHOULD SEND US
Your Mail Orders:**

WE CARRY A STOCK OF

Dry Goods, Shoes and Carpets

Amounting to one hundred and seventy-five thousand dollars. We are package buyers for cash only which entitles us to the lowest prices obtainable. Our selling floor space covers thirty thousand square feet, with twenty-eight thousand more under way for furniture. We employ in the busy season one hundred and twenty-five employees and with your help we can hire as many more. Our facilities for filling your orders promptly are second to none. We prepay charges on orders of \$5.00 and over, and send samples as often as you want them.

CROSBY BROS.,
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SPANISH NETTLE OIL!

FOR MAN AND BEAST.

An infallible remedy for Rheumatism, Cuts, Sprains and Bruises. For Barb Wire tears it has no equal. For the Destruction of the Scow-Worm it acts like magic. Sample sent free on application—a postal card is sufficient.

SPANISH NETTLE OIL CO., St. Louis, Mo.

Save Hogs.

Prevent Hog Cholera by giving occasional doses of a remedy that has saved thousands. You can buy drugs and make it for 10 cents a pound. Fifteen years a success. Recipe and full directions, \$1.00. Sent to any address by H. D. RECORD, Kiowa, Kans.

Gluten Feeds.

The cheapest source of Protein for a Balanced Ration.

Will produce richer milk and more of it; a more rapid growth and development of Cattle and Hogs, and better meat for market purposes than any other feed on the market. Highly recommended by Prof. H. M. Cottrell, of Manhattan Agricultural College. For information and prices address

N. T. GREEN & CO. Kansas City, Mo.

CREAM TESTER, 50 CENTS.

Do not guess at the richness of your cow's milk. Test it before taking to the creamery. The "Scientific" tests to one one-hundredth fraction. Simple and easy to operate—better and more accurate than the old \$10 tester. Delivered free to any address on receipt of 50 cents. No stamps taken.

THE SCIENTIFIC TESTER CO., Oswego, Kans.

**LUMP JAW
NOW CURABLE.**

Surely, quickly and for good. Fleming Bros., chemists, Union Stock Yards, Chicago, have a remedy that quickly cures the most obstinate cases. Supplied by mail under a positive guarantee. Price, \$1.00. Valuable information and full particulars FREE.

**Successful Dairymen use 1 cent's worth of
SHOO-FLY.**

Saves 3 quarts milk daily if used in time. NO FLIES, TICKS, VERMIN OR SORES ON COWS. Thousands duplicate 10 gallons. Beware of imitations. "I have used several so-called 'Cattle Comforts', none equal to 'SHOO-FLY'. It is effective and cheap. Used 100 gallons." H. W. COMFORT, Fallington, Pa. President Pennsylvania Dairy Union. Send 25 cents. Money refunded if cow is not protected. SHOO-FLY MFG. CO., 1005 Fairmount Ave., Philadelphia, Pa.

SEND FOR OUR

ING AC. It tells you all about best methods and materials for roofing all buildings at reasonable cost. P. & S. Ruberoid roofing has been proven in quality by years of use. Tough, Strong, Flexible and Durable, resists heat, cold, acid, alkali, smoke, rain, etc. P. & S. sheathing papers and Donkey paint are also sold by us as exclusive southwestern agents. Send for catalogue. The Kansas City Roofing and Corrugating Co., Kansas City, Mo.

**BE HUMANE
And Profit at a Cost of Only One Cent per
Day by Using**

The only reliable Lotion positively preventing Flies, Gnats and Insects of every description from annoying Horses and Cattle. Soothing and Healing if applied to sores. Applied to cows it secures gains in Flesh and Milk. Guaranteed Pure, Harmless and Effective. Gallon Can, \$1.50; 1/2 Gallon \$1.00; Quarts, 50c. Beware of imitations. Sold by Druggists, Saddlery, Agricultural Implement, Flour and Feed and Seed Houses, or The Crescent Chemical Co., Philadelphia, Pa.

LIVE STOCK AUCTIONEERS.

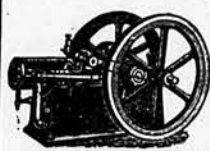
GEORGE W. BARNES, Auctioneer, Valencia, Kas. Lowest terms. Extensive experience both as breeder and salesman. All correspondence given prompt attention.

J. N. HARSHBERGER, LIVE STOCK AUCTIONEER, LAWRENCE, KAS. Years of experience. Sales made anywhere in the United States. Terms the lowest. Write before claiming date.

S. A. SAWYER, FINE STOCK AUCTIONEER—S. Manhattan, Riley Co., Kas. Have thirteen different sets of stud books and herd books of cattle and hogs. Complete catalogues. Retained by the City Stock Yards, Denver, Col., to make all their large combination sales of horses and cattle. Have sold for nearly every importer and noted breeder of cattle in America. Auction sales of fine horses a specialty. Large acquaintance in California, New Mexico, Texas and Wyoming Territory, where I have made numerous public sales.

**..HOWE..
STOCK SCALES.**

The only scale with ball bearings.



Fire and Burglar-Proof
SAFES.

Foos Gasoline Engines.
Write for Catalogue.

Borden & Selleck Co.,
1102 Union Ave.,
Kansas City, Mo.

MARKET REPORTS.

Kansas City Live Stock.

Kansas City, Aug. 7.—Cattle—Receipts since Saturday, 6,995; calves, 285; shipped Saturday, 1,261 cattle; 36 calves. The market was steady to strong. The following are representative sales:

DRESSED BEEF AND SHIPPING STEERS.	
No.	Ave. Price.
90.....	1,482 \$5.75
11.....	1,400 5.65
38.....	1,415 5.60
120.....	1,276 5.55

WESTERN STEERS.	
No.	Ave. Price.
101 stk.....	458 \$4.95
49.....	980 4.30
43 fdr.....	1,012 3.90
1.....	1,170 3.50

NATIVE HEIFERS.	
No.	Ave. Price.
1.....	1,400 \$5.75
40.....	1,393 5.60
76.....	1,272 5.55
28.....	873 4.35

NATIVE COWS.	
No.	Ave. Price.
1.....	1,070 \$4.00
11.....	998 3.60
6.....	983 3.55
1.....	702 3.15

NATIVE FEEDERS.	
No.	Ave. Price.
16.....	934 \$4.55
4.....	1,157 4.45

NATIVE STOCKERS.	
No.	Ave. Price.
6.....	587 \$4.80
1.....	850 4.50
5.....	428 4.10
1.....	430 3.50

Hogs—Receipts since Saturday, 3,790; shipped Saturday, 2,574. The market was 5c lower. The following are representative sales:

74.....	290 \$4.52½	95.....	162 \$4.52½	72.....	241 \$4.50
93.....	207 4.50	60.....	289 4.50	17.....	148 4.50
40.....	159 4.50	44.....	218 4.50	80.....	202 4.50
5.....	184 4.50	68.....	277 4.50	16.....	183 4.50
68.....	325 4.47½	79.....	230 4.47½	77.....	252 4.47½
74.....	274 4.47½	65.....	174 4.47½	78.....	250 4.47½
88.....	208 4.47½	60.....	277 4.47½	65.....	248 4.47½
88.....	202 4.47½	69.....	259 4.47½	85.....	217 4.45
65.....	237 4.45	48.....	158 4.45	53.....	231 4.45
14.....	195 4.45	69.....	227 4.45	9.....	130 4.45
50.....	254 4.45	64.....	209 4.45	61.....	264 4.45
29.....	302 4.45	24.....	143 4.45	61.....	163 4.45
65.....	225 4.45	98.....	178 4.45	78.....	237 4.45
69.....	257 4.45	32.....	181 4.42½	71.....	230 4.42½
69.....	196 4.40	22.....	248 4.40	23.....	294 4.35
1.....	369 4.20	1.....	230 4.00	2.....	330 4.00
1.....	410 3.50	1.....	190 3.25	1.....	130 3.00
7.....	54 3.00	2.....	150 3.00		

Sheep—Receipts since Saturday, 4,281; shipped Saturday, 114. The market was steady to strong. The following are representative sales:

24 nat. lms.....	74 \$5.00	91 yr. lms.....	74 \$4.40
45 sw. sh.....	103 4.10	8 sw. sh.....	100 4.00
65 stk. lms.....	52 3.75	53 sw. stk.....	73 3.50
23 sw. fdrs.....	75 3.40	212 Cal. stk.....	64 3.00

St. Louis Live Stock.

St. Louis, Aug. 7.—Cattle—Receipts, 2,003; market steady; native shipping and export steers, \$4.75@5.00; dressed beef steers, \$3.25@5.75; stockers and feeders, \$3.20@5.00; cows and heifers, \$2.25@4.85; Texas and Indian steers, \$3.40@4.80; cows and heifers, \$2.20@3.70.

Hogs—Receipts, 4,503; market 5c lower; pigs and lights, \$4.70@4.85; packers, \$4.60@4.70; butchers, \$4.65@4.75.

Sheep—Receipts, 1,200; market steady; native muttons, \$3.90@4.15; lambs, \$5.00@5.35; stockers, \$3.35@3.55.

Chicago Live Stock.

Chicago, Aug. 7.—Cattle—Receipts, 18,070; market steady; beefs, \$4.50@5.85; cows and heifers, \$2.00@4.90; Texas steers, \$3.50@5.00; stockers and feeders, \$3.25@4.80.

Hogs—Receipts, 40,000; market steady; mixed and butchers, \$4.35@4.75; good heavy, \$4.50@4.67½; rough heavy, \$4.10@4.35; light, \$4.50@4.85.

Sheep—Receipts, 12,010; market steady; sheep, \$3.00@5.00; lambs, \$4.00@6.00.

Chicago Grain and Provisions.

	Aug. 7.	Opened	High'st	Lowest	Closing
Wht—Sept.....	69½	69½	69	69	69
Dec.....	71½	71½	71½	71½	71½
May.....	74½	74½	74½	74½	74½
Corn—Sept.....	30½	31	30½	30½	30½
Dec.....	28½	28½	28½	28½	28½
May.....	29½	29½	29½	29½	29½
Oats—Sept.....	19½	19½	19½	19½	19½
Dec.....	19½	19½	19½	19½	19½
May.....	21½	21½	21	21	21
Pork—Aug.....	8 40	8 50	8 40	8 47½	8 47½
Sept.....	8 47½	8 55	8 47½	8 52½	8 52½
Lard—Aug.....	5 37½	5 40	5 37½	5 37½	5 37½
Sept.....	5 45	5 45	5 42½	5 42½	5 42½
Oct.....	5 07½	5 10	5 07½	5 10	5 10
Ribs—Aug.....	5 15	5 15	5 12½	5 15	5 15

Kansas City Grain.

Kansas City, Aug. 7.—Wheat—Receipts here to-day were 284 cars; a week ago, 202 cars; a year ago, 320 cars. Sales by sample on track: Hard, No. 2, 63¢@64¢; No. 3 hard, 59¢@61¢; No. 4 hard, 54¢@60¢; rejected hard, 60¢@62¢. Soft, No. 2, 67¢; No. 3 red, 63¢; No. 4 red, 57¢@60¢; rejected, 55¢@58¢.

Corn—Receipts here to-day were 63 cars; a week ago, 52 cars; a year ago, 53 cars. Sales by sample on track: Mixed, No. 2, 28¼¢@28½¢; No. 3 mixed, 27¼¢@27½¢; No. 4 mixed, 25¢@26¼¢; no grade, nominally 23¢@24¢. White, No. 2, 28¼¢@29¢; No. 3 white, 27¼¢; No. 4 white, 26¢.

Oats—Receipts here to-day were 18 cars; a week ago, 12 cars; a year ago, 19 cars. Sales by sample on track: Mixed, No. 2, 19¼¢@20¢; No. 3 mixed, 19¢; No. 4 mixed, nominally 15¢@17¢. White, No. 2, 23¼¢@24¼¢; No. 3 white, 21¼¢@24¢; No. 4 white, 18¢@20¼¢.

Rye—No. 2, 50¢; No. 3, nominally 40¢; No. 4, nominally 47¢@48¢.

Hay—Receipts to-day were 130 cars; a week ago, 115 cars; a year ago, 66 cars. Quotations are: Choice prairie, 6.00@6.25; No. 1, \$5.50@5.75. Timothy, choice, \$7.50. Clover, pure, \$5.50@6.50. Alfalfa, \$6.00@7.00.

Broom Corn—Per ton, in car lots, on track are as follows: Choice green self-working, \$110.00; good green self-working, \$100.00; common self-working, \$80.00.

Chicago Cash Grain.

Chicago, Aug. 7.—Wheat—Cash, No. 2 red, 70¼¢@71¢; No. 3 red, 68¢@69¼¢; No. 2 hard winter, 66¼¢@67¢; No. 3 hard winter, 65¼¢@66¼¢; No. 1 northern spring, 69¼¢@69½¢; No. 2 northern spring, 68¼¢@69¢; No. 3 northern spring, 64¢@65¼¢.

Corn—Cash, No. 2, 31¼¢; No. 3, 31¢@31¼¢. Oats—Cash, No. 2, 20¼¢@20½¢; No. 3, 20¼¢@20½¢.

St. Louis Cash Grain.

St. Louis, Aug. 7.—Wheat—Cash, No. 2 red, elevator, 68¼¢; track, 69¢@69¼¢; No. 2 hard, 67¼¢.

Corn—Cash, No. 2, 31¢; track, 32¢. Oats—Cash, No. 2, 21¢; track, 22¢@23¢; No. 1 white, 28¢.

Kansas City Produce.

Kansas City, Aug. 7.—Eggs—Strictly fresh, 9c per doz.

Butter—Extra fancy separator, 16¼¢; firsts, 14¼¢; seconds, 11¢; dairy, fancy, 14¢; store packed, 11¼¢; packing stock, 11¢.

Poultry—Hens, 7¼¢; broilers, 9¼¢; roosters, 15¢ each; ducks, 5¢@6¢; geese, 5¢@6¢; turkeys, hens, 7¢; toms, 6¢; pigeons, 75¢ per doz.

Vegetables—Pleasant, 10c per doz bunches. Asparagus, home grown, 25¢@40¢ per doz bunches. Radishes, 5c per doz bunches. Green beans, 20¢@35¢ per bu. Peas, 40¢@75¢ per bu.

Sweet corn, 22¢@25¢ per doz. Tomatoes, home grown, 10¢@40¢ per bu. Cucumbers, 15¢@35¢ per bu. Cabbage, home grown, 20¢@40¢ per doz.

Grapes—Home grown, 6c per lb. Potatoes—Home grown, new, 20c per bu.; Kaw valley, sacked, 20¢@25¢ per bu. Sweet, 6½¢@75¢ per bu.

Melons—Watermelons, 50¢@\$2.40, per doz. Cantaloupes, home grown, 20¢@45¢ per doz.

THE STRAY LIST.

FOR WEEK ENDING JULY 27, 1899.

Wallace County—O. N. Thorene, Clerk.

HORSE—Taken up by E. Bussermon, whose residence is S. E. quar. 18-15-38 in Harrison tp., June 27, 1899, one sorrel horse, 8 years old, and one bay horse 4 years old, also one mouse-colored mule, 2 years old all branded N. B. on left shoulder; total value \$35.

Labette County—E. H. Hughes, Clerk.

HORSE—Taken up by D. R. Walker, in Montana tp., (P. O. Montana), June 17, 1899, one 2-year-old gray horse, 15 hands high; valued at \$20.

FOR WEEK ENDING AUGUST 3, 1899.

Chase County—M. C. Newton, Clerk.

MARE—Taken up by G. W. Martin, in Bazaar tp., (P. O. Bazaar), July 5, 1899, one bay mare, wire cut on left front foot; valued at \$25.

Wyandotte County—Leonard Daniels, Clerk.

COW—Taken up by John Barry, in Shawnee tp., (P. O. Turner), July 11, 1899, one dark red cow, weight about 700 pounds, blind in left eye, dehorned, stump tail; valued at \$10.

Wilson County—C. W. Isham, Clerk.

MARE—Taken up by S. Swenson, in Colfax tp., (P. O. Chanute), Neosho Co., Kans., one light gray mare, about 8 years old, wire cut on left front leg below knee; tip of right ear split; valued at \$30.

Wallace County—O. N. Thorene, Clerk.

HORSE—Taken up by N. N. Rosendahl, in Stockholm tp., July 13, 1899, one gray horse, branded C. K.; valued at \$20.

Greeley County—Robt. Eadie, Clerk.

MARE—Taken up by Frank D. O'Neal, in Tribune tp., July 8, 1899, one sorrel mare, weight about 1,000 pounds, small blaze in face; valued at \$20.

Saline County—A. L. Brown, Clerk.

MULES—Taken up by Frank Robbins, in Eureka tp., (P. O. Kipp), June 14, 1899, one gray horse mule, over 10 years old, 13½ hands high, split in right ear. One brown mare mule, over 10 years old, twelve hands high, scar on right fore knee; total value, \$70.

FOR WEEK ENDING AUGUST 10, 1899.

Cherokee County—S. W. Swinney, Clerk.

MARE—Taken up by Frank Arnold, in Crawford tp., July 15, 1899, one sorrel mare, about 15 years old, sixteen hands high, collar marks on shoulder; valued at \$20.

MARE—Taken up by J. W. Hodson, in Garden tp., July 21, 1899, one bay mare, 16 years old, branded "R" on right shoulder; valued at \$15.

Wallace County—O. N. Thorene, Clerk.

MARES—Taken up by James Yoxall, in Weskan tp., July 12, 1899, two bay mares, 8 years old, with two 1-year-old, bay horse colts by their side, diamond brand on mares and colts; total value \$60.

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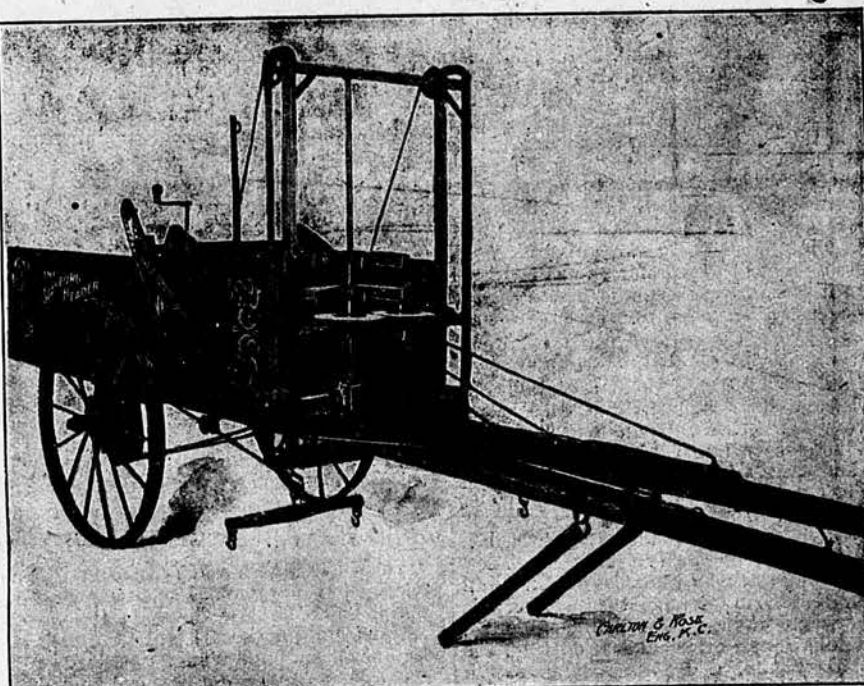
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Principal Buyers for Export and Domestic Markets in Constant Attendance.

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

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The Poultry Yard

SEVERAL POINTS. HEAVY WEIGHTS.

There is as much difference in the keeping of the several breeds of fowls as in keeping stock. If one makes a specialty of raising poultry for market the weights should be as heavy as possible, as the sales are made by the pound; but if eggs are to be depended on as contributing a portion of the profits then weight must not be considered. It is no disadvantage to have a large, heavy, laying hen, if weight and egg production can be combined, but as a rule the very heavy hens are not the best layers. With stock there are special beef breeds, while others are intended for milk. These characteristics are, of course, impossible with birds, but, nevertheless, there are breeds that excel in egg production, while others readily convert food into flesh. The poultryman who contemplates the management of a poultry establishment should have a definite purpose in view, and in the beginning select those breeds which best conform to his requirements, as any mistake then made occasions the loss of at least one year's time. Hence do not aim for heavy fowls unless you intend to make a specialty of weight. The different breeds all have their peculiar characteristics.

DISTINGUISHING FRESH EGGS.

A fresh egg is very clear when held up to a strong light and the air cell at the large end is very small. In fact, the smaller the air cell the fresher the egg, for as the egg becomes stale the cell expands. A fresh egg has a somewhat rough shell, while the shell of a stale egg becomes very smooth. When cooked, the contents of a fresh egg stick to the shell and must be removed with a spoon, but a stale egg, when boiled hard, permits the shell to be peeled off like the skin of an orange. It takes a longer time to boil a fresh egg hard than it does a stale one, and fresh eggs are more easily beaten into froth than stale ones.

SUNFLOWER SEEDS.

Sunflower seed is very acceptable to fowls, and its rich, nutritious, oily nature serves to gloss the plumage marvelously, if fed judiciously (with other grains) in the fall and early winter, when your best fowls are being fitted for the exhibition rooms, for example. As a regular feed once a week, to maturing birds, it is also very desirable, on account of its meaty, juicy substance. It may be grown by the sides of fences all around the farm, or upon the edges of the fields where nothing else can be planted. As it requires no after cultivation from the day it sprouts, and produces almost a thousandfold from a single sound seed, it is recommended to our readers as a good thing to try if they have not yet attempted it, though it is too late to grow it this year.

OATS FOR POULTRY.

It takes time (as well as digestive energy) to dissolve and wear away the hull of oats before the nutritive kernel is reached. Oats pass so slowly through the digestive apparatus that fowls can eat but two-thirds as much of them as wheat. The weight of the kernels, or nutritive part, is but 20 pounds to the bushel—one-third that of wheat. As compared, therefore, with wheat their given value is about one-fourth. Therefore, the number of fowls able to eat one bushel of wheat in the day, or week, containing 60 pounds of nourishment, can eat but oats enough to afford them 15 pounds of nourishment in the same period of time, if they eat all they are able.

HATCHING BROILERS.

Commence to hatch with incubators the latter part of fall and follow with successive hatches until the middle of May. The first lot of chicks will be marketable when they begin to weigh about three-quarters of a pound each, as early broilers in winter, then the preference changes for those weighing a pound, next one and a half pounds, and thus gradually the chicks increase in weight until the old fowls are more salable. The price is higher per pound the earlier they are hatched. Often a single hatch more than pays for the expenses. If late spring chicks are hatched the prices will be too low and may be discouraging to a beginner.

VERTIGO IN GEES.

What is the cause of geese falling over and can not get up?—J. C. Worcester, Mass.

It is due to overfeeding with grain, they being in an overfat condition, which is not desirable during warm weather. Give no food but the grass which they can secure on the range and give dry straw on the floor at night.

VERMIN IN BINS AND PIGEON HOUSES.

How can I get rid of roaches and bedbugs in oat bins and pigeon houses?—R. E. G., Chestnut Hill.

If not too risky use bisulphide of carbon

in the bins and cover them for an hour or two, but not even a lighted cigar must be brought near. In the pigeon house use Dalmation insect powder freely. The advertised lice-killers are very effective also. —P. H. Jacobs, in American Gardening.

Uncle Rastus Has Something to Say on Shows and Scoring.

A man in Chattanooga, Tennessee, write me a letter in which he say:

"I tried ha'd to git de ossifers ob de Chattanooga show, to 'gage yo' to do de jedgin', but dey' cluded dat de comparison sco' kyard was too fine haired, an' dat yo' didn't git in de pints 'cordid' to de lates' stile. I 'spected dat you'd jedge de show an' am darfo' much dis'pinted yo' didn't come on de las' train, and so forf."

"De truble wid de jedgin' bisness am, dat de bird doan stay jedged. To elucide: Las' mouth I sent a 99 pint rooster to de Possum Creek Show, de jedge sco'd him 97 99-100. A week attter I sent de same rooster to de Coon Creek Show and de sco' kyard he got was 92 700-1000. De nex' place he was sent to was to Boston whar dey jedged him to be wuff 87 116-1000 pints. And de las' place whar he was jedged was at de Crooked Creek Show whar he got a sco' ob 99 420 1-2-1000."

"De fractions am all O. K. Gib me de jedge dat kin sco' all de fractions in de riffmatick. Dat man know his bisness, he do. De great truble is, dat we doan git all de fractions we is 'titled to. No sah, we doan. De bigges' fool jedge in Gorgy kin put in de 1-2, an' de 1-8, an' de 1-4, an' de 3-4, an' all de little fractions, but de jedge dat kin git right down to bed-rock and put in de big fraction whar dey belongs am sca'ce, kase dey aint learned dar bisness."

"De fashion ob de day demands high collas, bull-dog shoes, straght cut coat-tails an' high chicken sco's, wid fractions to each sco'. Yes sah, hit do. An' de jedge dat aint up in de fraction bisness aint in de swim."

"Cumparison jedgin' am out ob stile jes bekase hit go no fractions. Dat's what de marter wid hit. Ef dey cud fling in some fractions 'long wid de ribbons, de comparison people wuld do a big bisness at de ole stand. Dat's de God's trufe. Hit's simplygoin' out ob stile bekase de cumparison jedge doan know de riffmatick. No sah, dey doan know dat de sco' kyard jedges haint used up all de fractions an' dat dey's some yet left fo' de cumparison folks."

"Yo' Uncle am for refo'm in jedging, an' we kaint have no refo'm less'n we git all de fractions dat de law 'lows. An' den de fractions am o'namental, an' look nice an wise an' all dat kind o'ing."

"Yo' uncle perpose dat a school be sta'ted on purposely to educate folks to be jedges on de fraction plan. An' de men fo' teachers mus' be de ones who kin handle all de big fractions 'long wid de big sco's." J. H. Davis in Fanciers' Review.

Breeding by the Standard.

All the established breeds of poultry are bred to a "standard," each breed being allowed a possible 100 points. These points differ according to the breed, but encourage beauty of plumage and form rather than utility. The "standard," however, has preserved each breed in its purity by compelling the breeders to adhere closely to every little detail, but the choicest and most perfect birds may prove inferior layers, the "standard" recognizing the exterior qualifications only. It, however, encourages the development of prominence to the breast, breadth of back, and gives preference to weight in some breeds. But for the "standard," however, the Brahmas would be absorbed in the Cochins, and the Langshans would lose its identity in a few years, while the other breeds would suffer correspondingly, due to the fact that all the breeds of poultry are subject to the constant crossing and inbreeding practiced so extensively by nearly all who keep fowls.

But the "standard," as in the case of the Leghorns, gives nearly one-third of the 100 points to the head, face, and legs of the bird, (which are really the useless parts in a utilitarian sense), and devotes but a few to elevating the characteristics of the breed. The highest scoring fowls, therefore, may be only ornamental, yet it is in keeping close to the requirements of the "standard" that we have so many excellent breeds. The inherent and meritorious qualities of the majority of the breeds, such as non-sitting peculiarity of the Leghorns, were fixed by careful selection, before the "standard" was adopted. With the exception of a few poultry exhibitions no premiums are offered for the encouragement of the production of carcass or eggs, nor for particular records of individual hens. This is due partially to the fact that but few farmers take an interest in the shows, or seek to encourage the breeding of the best varieties. The breeders of strictly pure breeds have, by rigidly adhering to the standard, prevented the destruction of some of the best varieties, and

She Followed Her Doctor's Advice

Mrs. G. W. Palmer, of Jonesville, Vt., says:

"Two years ago I was afflicted with stomach and bowel trouble. My case puzzled the doctors. I subsisted only on the lightest kind of diet. My stomach would not retain solid food. The pain in my stomach and bowels was so intense that I cannot describe it. I continued to grow worse. I lost 48 pounds, my nerves were completely shattered, and I was very weak. Dr. C. W. Jacobs, of Richmond, advised me to take Dr. Williams' Pink Pills for Pale People. I began to use the pills, and the first effect was the restoration of my appetite, and the quieting of my shattered nervous system. I began to regain my lost strength, and in one month after commencing to take the pills I was able to do my housework. I have gained 30 pounds and to-day am in good health."—From the Free Press, Burlington, Vt.

Dr. Williams' Pink Pills for Pale People contain, in a condensed form, all the elements necessary to give new life and richness to the blood and restore shattered nerves. They are an unfailing specific for such diseases as locomotor ataxia, partial paralysis, St. Vitus' dance, sciatica, neuralgia, rheumatism, nervous headache, the after-effects of the grip, palpitation of the heart, pale and sallow complexions, and all forms of weakness either in male or female.

Dr. Williams' Pink Pills for Pale People are never sold by the dozen or hundred, but always in packages. At all druggists, or direct from the Dr. Williams Medicine Company, Schenectady, N. Y., 50 cents per box, 6 boxes \$2.50.

should be given credit for their work. For crossing the farmer needs no standard, but if he is going to use the pure breeds he should endeavor to secure standard birds, in order to make sure that they are what he desires.

What is desired is a "sensible" standard,—one not in conflict with grammar and English,—with the points so distributed as to preserve the purity of the breed while encouraging utility, and which does not compel "double mating" to comply with its provisions.—Poultry Keeper.

Prepare for Winter Eggs.

"If we do not look ahead for those things now, we're apt to get left at the time when eggs are most needed," says a writer in the Orange County Farmer. "I shall not ask you to do impossibilities, but tell you how to do these things right at home without any extra expense. Take a good cider-barrel, remove the head without breaking it all to pieces, so that you can use it to put back again, then pack your barrel down tight with the second crop clover hay, the younger and tenderer the better. When I say pack it down tight, I mean it must be rammed and jammed down as though you had a grudge against it. When your barrel is full, put on your lid and on top of the lid place a stone, a good-sized one that takes two men to lift. You can prepare as many barrels as you think you will need, but I'll warrant before the next spring comes around you'll wish you'd had a dozen. Your barrel will cost you about a dollar and it will be well expended."

"To use it, take your barrel apart, leaving the cheese of clover standing in dry place, and when you want to use it, take a long sharp knife and cut it off in as short lengths as you can. Feed it to your hens for a noon-day meal, omitting grain. It isn't necessary to go into details and tell why all this trouble is taken; suffice to say that clover is an egg food. Every farmer knows that when poultry have access to a clover patch they always give an abundance of eggs. Fowls like bulky food, and a strict corn diet is too fattening, although they must have a fair portion of it in winter. For summer food I think boiled oats and wheat screenings superior to any. 'Why boil your oats?' asks some one. Well, this is not actually necessary; the idea is to soften them, as fowls will eat them clean and they do not stick in the crop. An easy but not shiftless way is to pour a kettle of boiling water over a bucket of oats, and

cover them over with something to keep the steam in. Do this half an hour or more before you wish to use them."

\$100 Reward, \$100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages and that is Catarrh. Hall's Catarrh Cure is the only positive cure now known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials.

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is one of the war books which is likely to be in continuous demand. It is a panoramic record of the triumph of Yankee Doodle. The eagle flaps his wings on every page, and "Old Glory" waves around and above every scene. Prominent officers connected with the war are here portrayed, as well as many of the "men behind the guns." Military life is pictured to the eye from recruiting to guard-mount and skirmish-line. Nor is the ludicrous omitted. The company cook receives the attention due to his importance; the mess is shown; cavalry scenes are given; the hospital arrangements are depicted; the heroines of the Red Cross service are displayed; street scenes in Havana, Santiago, and elsewhere are unrolled, the new citizens or subjects (which are they?) of Uncle Sam appear and disappear as the leaves are turned.

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REGULATE THE LIVER

A Weak Argument.

The evangelist who had been conducting a series of very successful meetings in a Virginia town and should have been correspondingly satisfied and happy with his work, was nevertheless dissatisfied and unhappy, simply because there was one man upon whom his efforts had had no effect. This unregenerate, who was a prominent citizen, fond of the world and its allurements, had attended one or two meetings at the beginning, but he had not appeared again, and he had thwarted every effort of the evangelist to have a personal interview with him. It was this one possible lost soul that had made the zealous worker in the good cause feel that all his labor was in vain, and he redoubled his efforts to pluck the brand from the burning. One day, when he was least expecting it, he met his man where he could not escape, and he lost no time in appealing to him to turn from the error of his ways. The man listened respectfully and replied to the arguments presented so courteously that the evangelist felt it to be a hopeless case unless the dreadful results of an ill-spent life could be shown in the most forcible way.

"Do you know—do you quite realize, my dear friend," he said earnestly, "what it means to live as you are living, and to die as you must finally die?"

"Well," hesitated the man, "I don't suppose I realize it as you do. If I did, probably, I might change. But I don't know what the end will be and I am willing to have the best time I can now and take my chances."

"But you can not afford to do that," urged the evangelist. "Why my dear brother, if you die as you now are you will go to the place of everlasting burning."

Then the unregenerate one laughed, quietly and not with any degree of scorn. "Are you sure of that?" he asked.

"Quite sure."

"Then I guess I can stand it," he said. "I've been married to a Boston woman for twenty years and I'd like to get thawed out."

Whether it was irreverent or not the evangelist did not resent it. Indeed, he made no further appeal, and after he had gone away it was learned that he, too, was the husband of a Boston woman.

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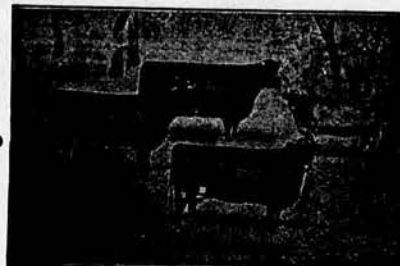
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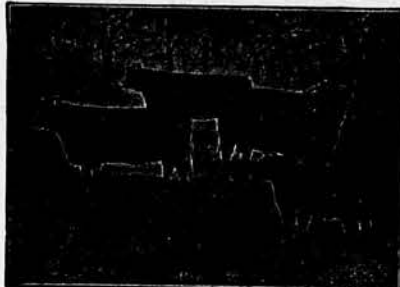
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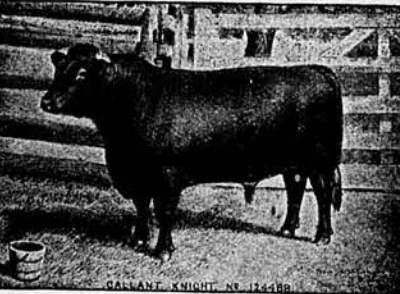
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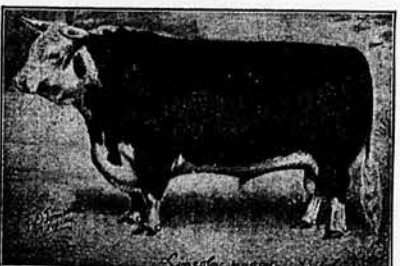
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