

KANSAS FARMER

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BREEDERS' DIRECTORY.

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Barred P. Rocks, White P. Rocks, Partridge Cochins, White Cochins, Light Brahmas, S. L. Wyandottes, White Wyandottes, Black Javas, Brown Leghorns, White Leghorns, Buff Leghorns, Silver Spangled Hamburgs, Pearl Guinea and Pekin Ducks. Two hundred this year's breeders for sale. Also 500 Spring Chicks, ready to ship after the first of July. Prices lower than any other time of the year. Circular free.

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Larned, Kas.

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Empire, Lash and Conger Strains.

Eight years experience in breeding Rocks exclusively. Five pens—three Barred, two White; all high-scoring birds. They are mated to produce prize-winners. Males score from 9 1/4 to 14; by Hewes; females from 8 1/2 to 13 1/2. Eggs, 13 for \$1; 30 for \$2; 50 for \$3; 100 for \$5. Write for descriptive circular. Printed recipe for making and using Liquid Lice Killer, 25c. Address,

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M. H. ALBERTY, Breeder of Registered
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Baby Pig Teeth Clippers, 35 cents by mail.

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100 head. Foundation stock, Tecumseh. Boars in service, Tecumseh Joe 13444 S., Chief 13840 S., Butler Wilkes 17764 S., U. S. Tecumseh 17850 S. 15 fall gilts, 30 spring pigs, 30 summer pigs. Inspection and correspondence invited.
H. E. Bachelder, Fredonia, Wilson Co., Kas.

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Thoroughbred Duroc-Jersey Hogs

Registered stock. Send for 44-page catalogue, prices and history, containing much other useful information to young breeders. Will be sent on receipt of stamp and address. J. M. Stonebraker, Paola, Ill.

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Sedgwick, Harvey Co., Kas.,

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Short-horn Cattle and Poland-China Swine

Of the Best Strains.

Stock for sale. Correspondence and inspection invited.

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Twenty-five very fancy fall boars, some of which will do to head any herd or to go in any show ring. Sired by Knox All Wilkes 18179 S. and Highland Chief 18334 S., by Chief Tecumseh 2d 9115. No better sires in any herd. Our prices very low if taken at once. One hundred fine spring pigs by same sires.

Plymouth Rock Eggs.

DIETRICH & SPAULDING, Richmond, Kas.

HEADQUARTERS FOR POLAND-CHINAS

IN KANSAS IS AT SHADY BROOK

STOCK FARM.

H. W. CHENEY, Prop., NORTH TOPEKA, KAS.

Cheney's Chief I Know 19513 (8) at head. All popular strains represented in matrons. Write for prices, which are always reasonable. Buyers met at train and shown stock free.

Wamego Herd Imp. Chester Whites

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Mated for best results.

Also Barred Plymouth

Rock chickens and eggs

for sale. Correspondence

or inspection invited. Mention FARMER.

C. J. HUGGINS, Proprietor, Wamego, Kas.

Large-Boned Poland-Chinas—A Bargain.

For the next thirty days we will sell fifteen extra fine boars and twelve sows, of September farrow, good enough to go in any herd, and some of them will win this fall in hot company. They go cheap while they last. 150 spring pigs representing all the fashionable families. Come and see us or write.

WAIT & EAST, Altoona, Wilson Co., Kas.

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REGISTERED POLAND-CHINA SWINE.

Herd boars, Gold Standard Wilkes by Guy Wilkes 2d 17777 S. and Ideal Quality by Darkness Quality 2d 14361 S. Brood sows, Tecumseh, Black U. S. and Wilkes. Thirty spring pigs, both sexes, ready to go. Farm two miles north of Welda.

J. M. COLLINS, Welda, Anderson Co., Kas.

PURE-BRED POLAND-CHINA SWINE.

Brood sows by Wren's Medium, Hadley M. Washington, Protection Boy, Moss Wilkes Tecumseh (by C. T. 2d), Tanner 19212, a grandson of the famous Hildreth, at head of herd, assisted by Prince Darkness, out of Darkness 1st. Cornwin Sensation and Darkness 1st are very choice sows. Some October Tanner pigs for sale. Get one for a herd header. Also some One Price Medium 2d pigs for sale. Three young boars ready for service. Write for prices.

J. R. WILLSON, Marion, Kas.

HIGHLAND FARM HERD

PEDIGREED POLAND-CHINAS.

One hundred head. Bred sows in pig to herd boars, Corwin I Know 18448 S., he by the great Chief I Know 19992 S., and others to Hadley U. S., a son of the great Hadley, Jr. 13314 S. Also ten extra choice fall boars and twelve gilts for sale at reasonable prices, breeding and quality considered. Fifty spring pigs by seven different noted sires. Write or visit the farm. John Bollin, Kickapoo, Leavenworth Co., Kas.

PLEASANT VALLEY HERD

REGISTERED POLAND-CHINA SWINE

King Perfection 4th 18744 S. at head of herd, assisted by Tecumseh Wilkes 12694 S. and Lambing Ideal 14050 S. The sire of last named is Gov. C. by Black U. S. We have added several very finely bred sows to our herd. Write for particulars. Address either

W. E. JOHNSON,

Colony, Kas.

E. A. BRICKER,

Westphalia, Kas.

Kansas City

HERD

Poland-Chinas.

W. P. GOODE,

Lenexa, Kas.

SWINE.



D. L. BUTTON, North
Topeka, Kas., breeder of
Improved Chester Whites.
Stock for sale. Farm 2 miles
northwest of Reform School



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

CHERRY ORCHARD HERD

Composed of the BEST POLAND-CHINA
Blood Known.

The present offering consists of August, September and October pigs—10 boars and 20 sows—very choice. The stock by or bred to Kievers Model, What's Wanted Jr., Hildreth, Wilkes, Waterloo Chief, etc. For further information address,

W. H. WREN, Marion, Kas.

BLUE MOUND HERD

BERKSHIRE SWINE.

Herd boars, Victor Hugo 41799 (sire imp.), Barkis 30040 (weight 800 lbs.), Prince Jr. 17th, from World's Fair winner. Choice pigs from five different strains. Also bred Shropshire sheep, M. B. turkeys and B. P. Rock chickens. Write.

Allen Thomas, Blue Mound, Linn Co., Kas.

Nation's Poland-Chinas.

Fifty boars and gilts for this season's trade. My herd boars consist of Darkness Quality 14361, Princeton Chief 14543, Col. Hildreth 37247 and Standard Wilkes. My sows are splendid individuals and of the right breeding. Personal inspection and correspondence invited.

LAWRENCE NATION, Hutchinson, Kas.

SUNFLOWER HERD OF SHORT-HORN

CATTLE and POLAND-CHINA SWINE.

125 head in herd, with Sir Knight 124403 at the head. Females are by such imported Cruikshank bulls as Craven Knight 96923, Thistle-top, Master of the Rolls, Earl of Gloster 74523, Viscount Richmond, Knight Templar 68658, etc. Forty very choice brood sows. Young stock for sale.

ANDREW PRINGLE, Harveyville, Kas.



POLAND-CHINAS.

Guy Darkness 18292 and Best Nims 19612, herd boars. Sept. '97 boars and gilts for sale. Guy Darkness gilts will be bred to Best Nims for fall farrow.

Correspondence or inspection of herd solicited.

S. W. HILL, Hutchinson, Kas.

ROSE POLAND-CHINAS

ARE SECOND TO NONE.

FARM READ THIS SPECIAL OFFER:

Will sell February and March pigs during July for \$15 each, delivered at any railroad station in Kansas or Nebraska.

H. WOODFORD, Mgr., Chester, Neb.

Mains' Herd Poland-Chinas

Headed by the three grand breeding boars, Model Combination—his sire was J. D. Model, he by Kievers Model 14664 out of McKelvey's Lass 42107; his dam Lady Chief 42919, she by Chief Tecumseh 2d 9115 and out of Ralph's Pet 42788; One Price Chief—his sire—Chief Tecumseh 2d 9115, his dam Alpha Price 38785, she by One Price 4207; Kansas Chief 33615—by Royal Chief's Best and out of Bel O. 74594. The sows are all selected and equal in breeding and quality to any. A few sows bred will be offered. Young males and gilts ready. Satisfaction guaranteed.

James Mains, Oskaloosa, Jefferson Co., Kas.



Owned by Y. B. HOWEY, TOPEKA, KANSAS.

Breeder and shipper of thoroughbred Poland-China and Large English Berkshire swine and Silver-Laced Wyandotte chickens.

SWINE.



T. A. HUBBARD,
Rome, Kansas,
Breeder of
POLAND-CHINAS and
LARGE ENGLISH
BERKSHIRES. Two hundred head. All ages.
25 boars and 45 sows ready for buyers.

Standard Herd of Poland-Chinas

A choice lot of gilts sired by Ideal U. S. and bred to Tecumseh Chief. Also some good Tecumseh Chief gilts bred to Look Over Me (he by old Look Me Over) and some good fall pigs, both sexes. Write and get my prices or come and see.

WM. MAGUIRE, Haven, Kas.

CATTLE.

SILVER CREEK HERD

SHORT-HORN CATTLE.

Scotch and Scotch-topped, with the richly-bred Champion's Best 14471 in service. Also high-class DUROC-JERSEY SWINE. Can ship on Santa Fe, Frisco and Missouri Pacific railroads.

J. F. STODDER, Burden, Cowley Co., Kas.

CLOVER CLIFF FARM.

Registered Galloway Cattle. Also German Coach, Saddle and Trotting-bred horses. World's Fair prize Oldenburg Coach stallion, Habbo, and the saddle stallion, Rosewood, a 16-hand, 1,100-pound son of Montrose, in service. Visitors always welcome. Address

BLACKSHERE BROS., Elmdale, Chase Co., Kas.

DEER PARK FARM.

H. E. BALL, Proprietor.

Registered Jersey cattle. Young bulls

and heifers for sale.

Registered Poland-China

swine. Young boars for sale.

Farm two miles east of Topeka on Sixth street road.

T. P. CRAWFORD, Mgr., Topeka, Kas.

SUNRISE STOCK FARM.

C. A. STANNARD, Prop.,

Hope, Kas.

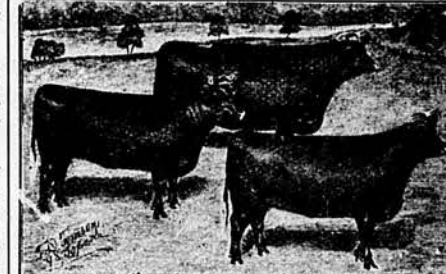
Breeder of

Hereford Cattle and

Large English Berkshire Hogs.

Bulls in service: Kodax of Rockland 40731, who has won more first premiums at leading State fairs in past six years than any other bull in Kansas; Java 6045. Thirty-five yearling heifers and seven bulls 3 to 7 years old for sale.

ELDER LAWN HERD SHORT-HORNS.



THE Harris bred bull, GALLANT KNIGHT 124466, a son of Gallahad, out of 8th Linwood Golden Drop, heads herd. Females by the Cruikshank bulls, Imp. Thistle Top 83876, Earl of Gloster 74523, etc. Size, color, constitution and feeding qualities the standard. Address

T. K. TOMSON & SONS, DOVER, KANSAS.

LIVE STOCK AUCTIONEERS.

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. Compile 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.

TO UTILIZE WASTE WATER.

"In time of peace prepare for war." Almost all sections of Kansas were, during the spring months of 1898, abundantly supplied with moisture from the clouds. In most parts of the State the rains were excessive and the surplus has flowed away in the streams. Doubtless enough water has been carried out of Kansas this season to supply every deficiency of moisture likely to occur before snow flies next fall or before the maturity of the corn crop of 1899.

The question of saving the overabundance of water for such times of need as are sure to come within a few months is one of the problems of civilization—a problem that will have to be solved very soon and that is now receiving profound attention from economists, engineers and practical operators. The run-off waters find their way to the streams and thence out of the State. In most parts

work and took the photographs from which most of the illustrations were engraved.

THE LAY OF THE LAND.

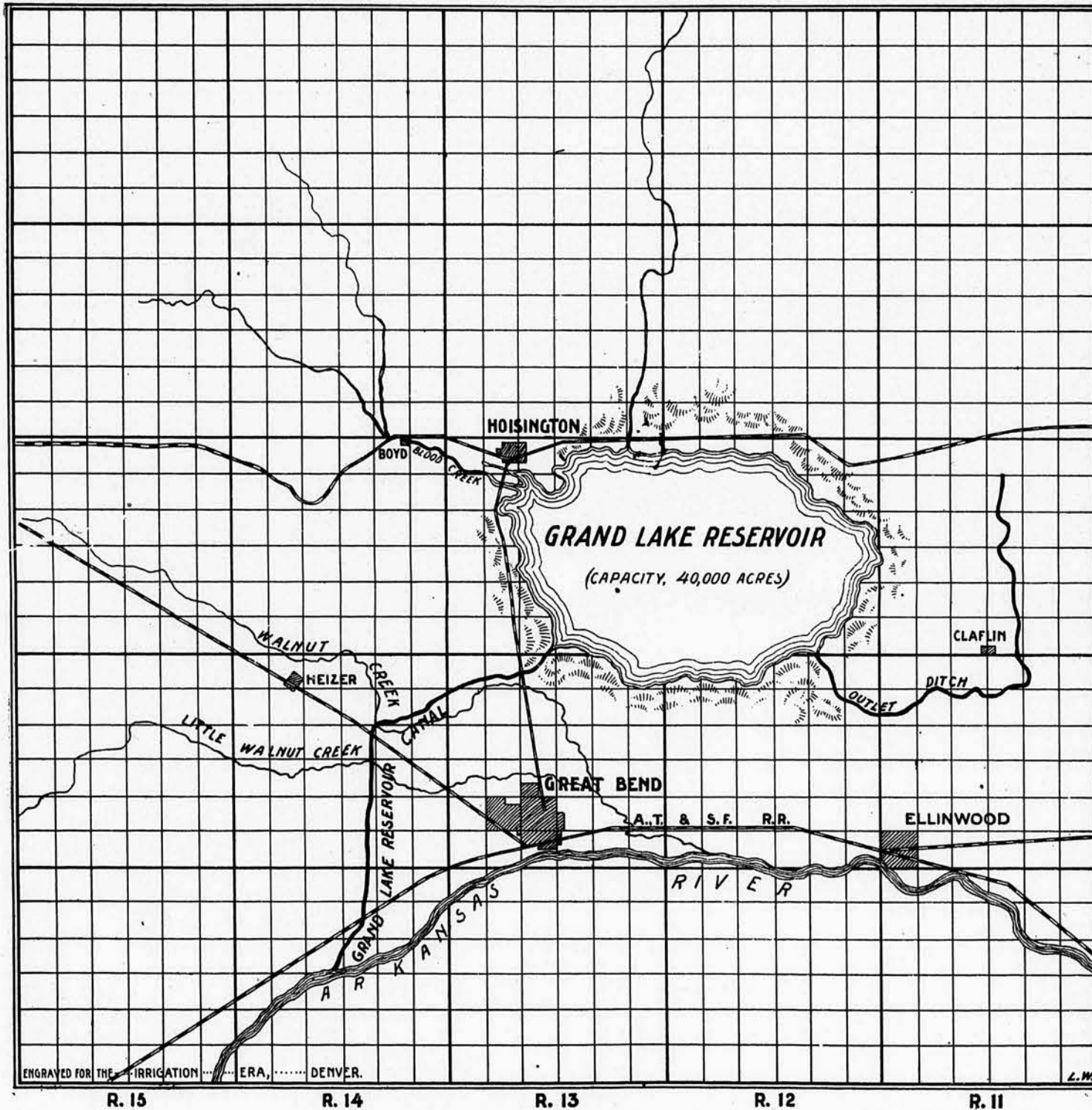
The surface of the country in general is undulating prairie, the greater portion of it being apparently level. At various distances from the Arkansas river, on both the north and south sides, the ground takes a considerable rise, varying from eight to twelve feet, and between these rises the land is known as "first bottom land." This varies in width, being in some places a mere strip, and in others extending back several miles. Beginning about five miles north of Great Bend, the county seat of Barton county, there is an almost unbroken line of rising ground, of an irregular elliptical form, embracing nearly all of range 12 and 13 in township 18. This forms a regular basin covering 30,000 acres, according to the official estimates, known as Cheyenne Bottoms, which receives the waters of both Blood creek

in the north central part of the county, and flows to the southeast, leaving the county in township 18. Blood creek and Deception creek also have their rise in the northern part of the county and empty into the great natural lake bed known as Cheyenne Bottoms, where their waters are lost by evaporation and seepage. The Arkansas river at this point carries fully as much water as it does anywhere in Colorado, even after the entire capacity of the river has been taken out double for irrigation purposes by the large canals along its course.

The soil is a rich loam; that portion south of the river being mixed to a considerable extent with sand, making it easy of cultivation and better adapted to fruits than the heavier lands, while on the north side of the river it is a black loam. It varies in depth from five to fifteen feet, and to an Eastern farmer it would remind him a great deal of the soil he hauls from the woods and fence corners, from around decayed stumps,

and east. The water for domestic purposes is found in the southern part of the county at a depth of ten to twelve feet, but in some of the northern part water cannot be secured short of thirty or forty feet. The annual amount of rainfall is about twenty-four inches. The county has made fair progress since its establishment and the people are thrifty and industrious. The people generally are in good circumstances, and the country residences and farms show substantial improvements and care, their houses and surroundings indicating industry and a good degree of prosperity. The first sod was broken in 1872. In 1872 the first wheat in the county was grown, and consisted of only about 200 acres. This year there is 220,000 acres planted, as to the yield of which the betting fraternity are laying wagers whether it will average twenty-two and one-half bushels or more for the entire county.

A great deal of wealth



SECTIONAL MAP OF BARTON COUNTY, KANSAS,

Showing towns, Santa Fe Railroad lines, streams, the Grand Lake Reservoir Canal and natural storage basin, covering 30,000 to 40,000 acres, which we have designated as the Grand Lake Reservoir.

of Kansas each stream consists of two parts, one above and one below the surface. In some of these the average flow is greater in the unseen than in the visible portion. This sub-surface flow continues throughout the year, equalizing the discharge by holding in check so much water as can be conveyed by the slow motion through sands and gravels. The surface streams are really the overflows of these sub-surface streams.

It is the purpose of the present paper to call attention to a plan which is in course of execution to gather, store, and distribute as wanted, a great reservoir of run-off water in a natural basin a little west of the center of Kansas. The entire plant will be located in Barton county, although should it make available sufficient supplies of water, large portions of Rice county will be found admirably situated to share the benefits.

The following description of the work is compiled very largely from the Irrigation Era, of Denver, Col., whose editor made a careful examination of the

and Deception creek, and it is this natural lake that will be used for storing water for irrigation purposes.

The streams of the county are not numerous, but those it does have are almost always living. The principal stream is the Arkansas river, which enters the county six miles east of the southwest corner, and flows in a northeasterly direction until it reaches Great Bend, when it makes a curve and flows southeast, leaving the county three miles north of the southeast corner. From this stream the canal is taking its supply of water. The next stream in importance is Walnut creek, which enters the county in the west central portion, flows in a southeasterly direction, and empties into the Arkansas river four miles east of Great Bend. This stream is used for a short distance as the carrier of the waters of the canal, and dikes are being constructed at different points along its bed for storing the waters and flooding the surrounding lands. Cow creek has its rise almost

etc., for the purpose of making hot-beds in the spring. The subsoil differs as to location; south of the Arkansas river it is sand, on the north side clay, while in the extreme northern part of the county there is a sort of shale.

The soil is well adapted to a variety of crops, the heaviest yields of wheat, oats, barley, corn, rye, etc., coming from the black loam, while fruit of every variety does exceptionally well. All kinds of grain can be successfully raised with the smallest amount of labor, and it is seldom a failure occurs; that portion of the county now being irrigated is forever eradicated from this evil. On the south side of the river there is always sufficient moisture in the soil, accounted for by the almost constant irrigation it receives by seepage from the Arkansas river. The small grains do better here, for the reason that they are matured before the dry season sets in.

The elevation of Barton county is a little over 1,800 feet, and the general slope of the country is toward the river,

is also represented by the orchards, which during the last few years have received considerable attention.

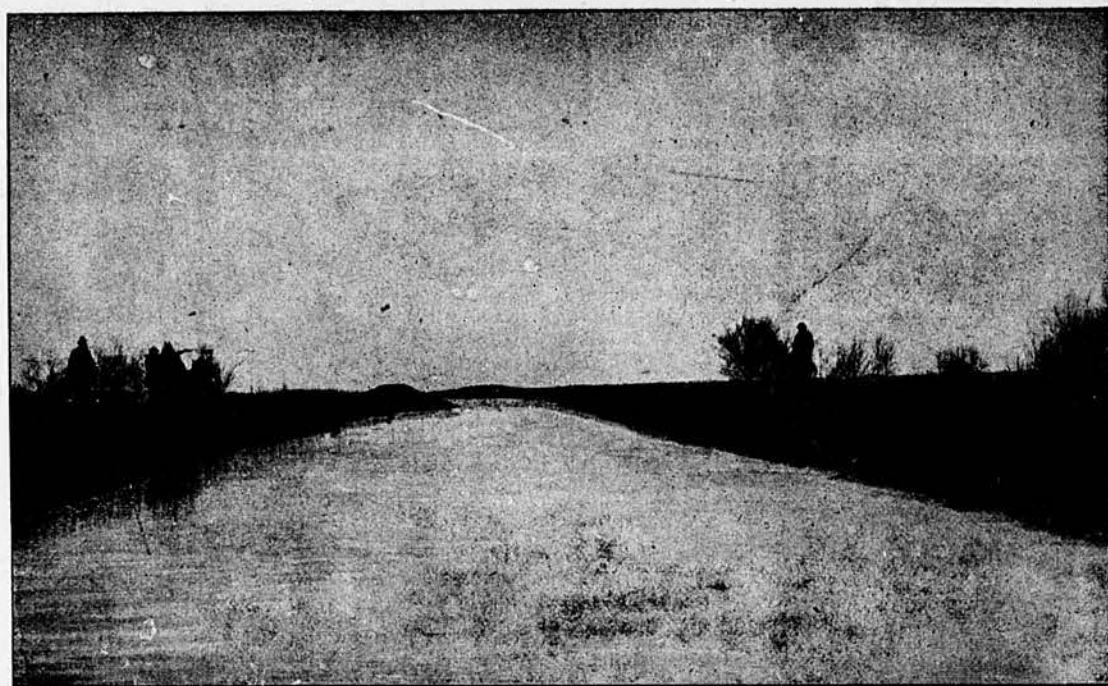
The schools are the pride of every Kansan; in this county alone there are 120 buildings, costing \$152,000.

OUTLINE OF THE PLAN.

Any one who thinks there is no water for irrigation in the great State of Kansas should go out along the line of the Grand Lake Reservoir canal in Barton county.

The Grand Lake Reservoir Co. was formed, and the services of Mr. F. B. Koen and Geo. A. Trites, old-time promoters of irrigation enterprises in Colorado, and the builders of the famous Amity canal in Powers county, were secured to carry on the construction of the canal.

The plan of the canal, as will be seen on the map of Barton county published in this number, is to take the water from the Arkansas river a few miles west of Great Bend, and carry it a distance of thirteen miles, emptying the



View on Grand Lake Reservoir Canal, Great Bend, Kansas.

surplus waters into Cheyenne Bottoms. Cheyenne Bottoms is nothing more or less than a natural lake bed, covering 30,000 to 40,000 acres of land. A few years ago a cloudburst occurred which filled this lake to a depth of seven feet, and it was nearly two years from that time before all the water was dried up, demonstrating that the lake bottom would hold water. The canal as now constructed will be twenty-four feet wide and thirteen miles long, and will

crops, and the assurance of these heavy yields every year.

The Arkansas river carries more water at this point than anywhere in Colorado. This canal ran full all last winter, while few of the larger canals in Colorado were entitled to any water.

The building of this canal from the river to Cheyenne Bottoms is only a part of a great system of irrigation which the promoters of this enterprise have in view. At present the canal will only

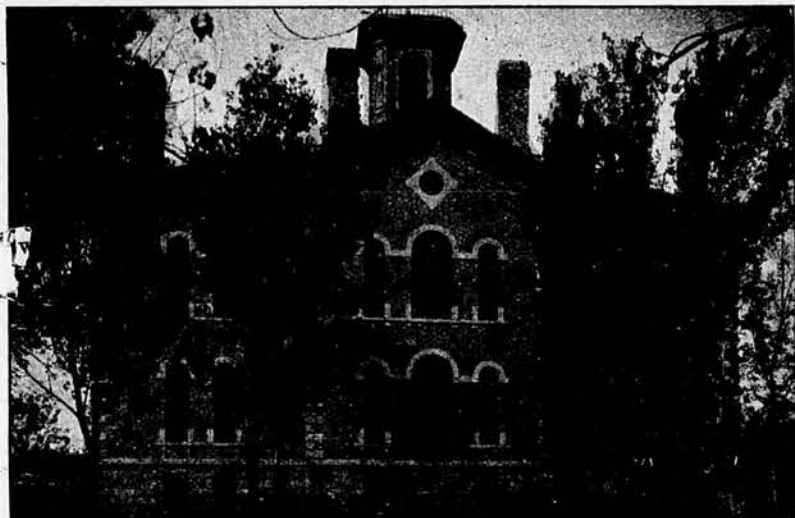
of seven feet. This will in the course of two miles get a depth of twelve feet below the bed of the river, catching the underflow water and conducting it into the

deemed entirely practical in every particular.

In its route from the river to the lake the canal crosses both Walnut and Little Walnut. Into these water will be dumped, dams constructed at convenient places and the water raised to the level of the surrounding country, where it will be carried out in laterals constructed for that purpose. Several of these dams have already been constructed and are now being used in this way with great success.

The promoters of this canal deserve great credit for the enterprise they have shown in going into a country where irrigation was unknown and attempting to put through to completion such a system of irrigation, but their efforts are meeting with entire success, and many of those first opposed to the enterprise are now beginning to realize the great advantage it means to them personally in the insurance of regular crops and greatly increased yields. They will appreciate the enterprise more and more as time passes on.

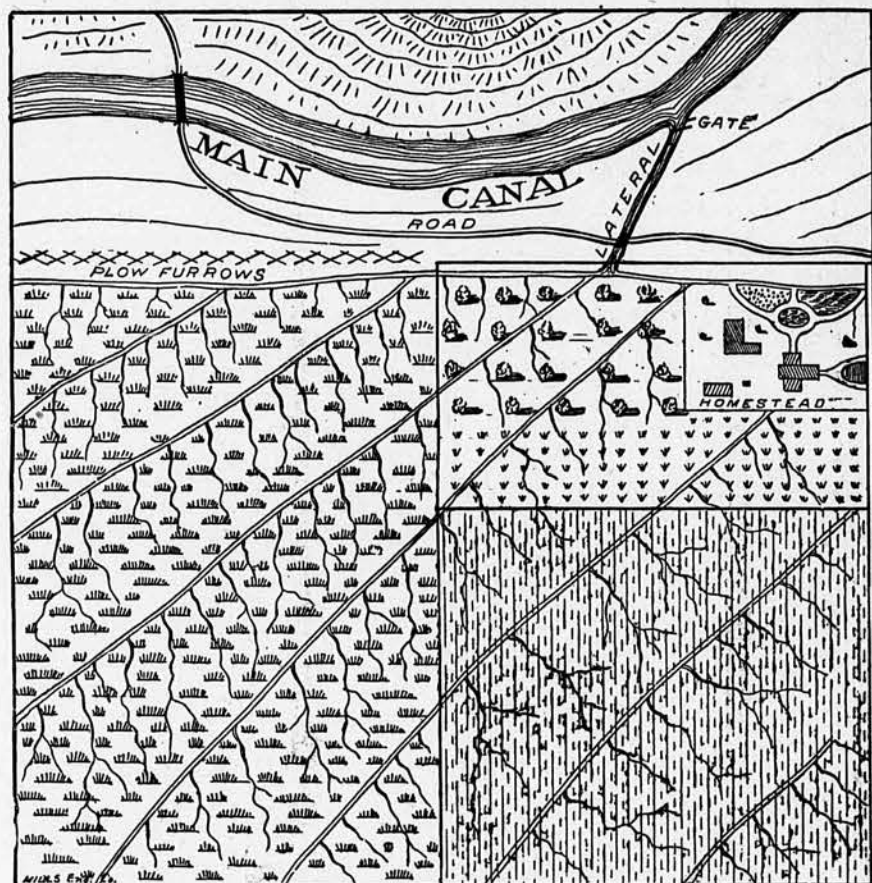
The full realization of the most sanguine expectations for this enterprise, would, if effected, make an inland lake of 30,000 to 40,000 acres, the average depth at high water being about thirty feet. Should the water supply, from both flood and underflow, prove sufficient to meet the demands for irrigation along the canal and provide sufficient surplus to admit of storing annually a usable supply in the lake ten feet deep over and above seepage and evaporation, this reserve will be sufficient to put



Barton County Court House.

cover between the point where it is taken from the river and where emptied into the lake, over 20,000 acres of as fine and fertile land as there is anywhere in the Western country. This land lays almost perfectly for irrigation purposes, sloping gently to the south and east, and the building of this canal will in time enhance its value from the present price of \$10 to \$15 per acre to \$75 and \$100, which will be fully justified by the large increase in the yield of all

have a capacity of 300 cubic feet per second, but it is proposed at a time not far distant to enlarge its capacity to 1,200 cubic feet, and fill the large lake now known as Cheyenne Bottoms and draw the waters from there to the hundreds of thousands of acres of surrounding land for irrigation purposes. To get a supply of water from the sub-surface river the inlet of the canal will be extended up the river at a grade of one foot per mile, the river having a grade



Method of Irrigating a Great Field in Kansas.

main canal. In this way a steady flow the full capacity of the canal is expected throughout the year. The plan is

twelve inches of water on 300,000 to 400,000 acres of land. Should the supply suffice only for a much less annual reserve the dimensions of the reservoir can be made to conform to the supply by means of an embankment reducing the size of the lake.

The proprietors of this enterprise have chosen wisely their location. The annual rainfall of the region is about twenty-five inches, diminishing westward. This furnishes a considerable run-off to go into the flow and underflow of the streams and become available for the ditch. The country is well settled with thrifty farmers who have long desired a means of breaking the dry spells, which are almost certain to reduce the crops. The supply ditch therefore passes through a country which will be greatly benefited, and will gladly use the water for irrigation. Should the projectors find obstacles to prevent the formation of the lake the canal can be diverted around south of the elevated rim of the Cheyenne Bottoms, and, by following contour lines, reach territory needing irrigation sufficiently large to use the entire water supply without impounding the water in the lake.

But this plan of impounding surplus waters against future needs is a correct one, and when fully inaugurated will practically eliminate the elements of uncertainty from farming, fruit-growing, and market gardening in all the country served from the great reservoir.

Pasteurized cream is now in season.



Dam on Little Walnut Creek at Boyd Evers' Place, Part of the Irrigation System of Great Bend.

ENGRAVED FOR
THE IRRIGATION ERA
DENVER

Horticulture.

SPRAYING.

Excerpt from an address by F. C. Sears, M. S., Director Ontario School of Horticulture, formerly Assistant Horticulturist, Kansas State Agricultural College.

The history of spraying is a most remarkable one, considered from almost any point of view. Fifteen years ago we knew scarcely anything in regard to it, but to-day the progressive fruit-raiser can obtain reliable information upon almost any phase of the subject. The first remedies proposed were most unique, and seem to have been suggested by the same train of reasoning which actuated our grandmothers when they selected remedies for their ailing grandchildren, namely, that the more horrible odor of a substance and the more fearful its taste, the more certain it was to prove efficacious. Yet occasionally, in some mixture of a half dozen or more such substances, one would be introduced which was really effective, and in this way these early, spasmodic efforts to prevent the inroads of our insect enemies resulted in some discoveries of actual value. Tobacco was among the first substances to give satisfactory results, its use having been suggested, doubtless, by the experience of some one who had made an unsuccessful attempt to learn to smoke—and thus, one substance after another was added to the list. But these accidental discoveries were made slowly, and their actions were but little understood, so that improvements in methods of application resulted only after years of experience. And if the prevention of the attacks of insects was shrouded in darkness what can we say to describe the state of affairs with reference to fungous diseases, those mysterious visitations which often came so suddenly and always left ruin and consternation behind? What wonder that the poor fruit-raiser felt himself under the ban of Providence and abandoned the field to his enemies. One can imagine that he announced to his fellow sufferers, with even more assurance than does the representation of his type to-day—"Gentlemen, fruit-raising doesn't pay!"

But in time men began to study these matters scientifically, which is only another name for carefully. The structure and life of the insect were studied with a view to attacking it at its weakest point, and as a result we have our present system. Every new pest that has come into prominence has been subjected to the same careful study, and in every case, in the past, some method of treatment has been devised which has proved effective. The difficulty now is, not that we do not know what ought to be done, but that we do not do it.

SAN JOSE SCALE.

It is a curious study to look back over the past and notice the career and final downfall of the different pests that have appeared, each heralded, as is the San Jose scale to-day, as the last straw which was to "break the camel's back," and to wipe the fruit industry from the earth. Yet each, after a longer or shorter time, has been subjugated by the use of some new remedy, or the modification of an old one, or by the increase of its natural enemies; and each one, after the reign of terror caused by its first appearance, has taken its place along with other pests, not indeed, to be forgotten, but to be provided for as we provide for the destruction of weeds in our fields or as we ought to provide. And I am willing to go on record as saying that in my opinion the San Jose scale will be no exception to this rule, but that a remedy will be discovered which will be effectual and yet cheap. I do not wish to be understood as trying to detract from the reputation which Mr. San Jose scale has been able to make for himself, but I do wish to give a little hope to those poor mortals who think that the fruit industry of our own province is at an end because, forsooth, the San Jose scale has appeared in Ontario. I believe that whatever we can do to delay the time when we shall have this new pest to fight ought to be done, for the methods of fighting it are continually improving. And I believe that all plantations set within the last few years should be inspected, to make sure that the scale is not already within the province. Aside from this I believe we can only watch and wait.

The universal adoption of spraying seems to be delayed principally by three classes of fruit-raisers. First, there is the man who hasn't time to spray. Poor, overworked mortal! I very much fear that there is nothing at present than can be done for him. His case has been well summed up by some one who said that "the man who hasn't time to spray hasn't time to make money."

And secondly, there is the man who firmly believes in spraying and often

makes some attempt in that direction, but without any especial result, either in the amount of spraying he really does or in the good which this little is able to accomplish.

PAT'S EXPERIENCE WITH PARIS GREEN.

And lastly, there is the man who thinks that "spraying doesn't do no good, no how." Whenever I see him, or hear him, I always imagine that his knowledge of spraying is about equal to that of the Irish gardener, who came to his employer in great distress of both mind and body. On being asked what was the difficulty, he replied: "Bedad, sorr, I accidentally swallowed a petater bug, and although widin two minutes I took a tayspoonful of Paris green, he's shtill kickin up a divil of a fuss insoid of me. I'm thinkin' your Paris green is no good, sorr." Of course there may be men in other countries, however, who still honestly doubt the beneficial effects of spraying; and I, for one, though I am somewhat of an enthusiast on the subject of spraying, am willing to concede that there may be times—yes, that there undoubtedly are times, when spraying does no good; times when it may even do harm. But these adverse results can almost always be explained after a careful investigation, and we will usually find that they are due to our lack of knowledge on the subject. And if, in some cases, they cannot be explained, is that a sufficient reason for abandoning the practice altogether? For every instance in which spraying has proved a failure there are numberless cases where it has been an entire success; yet some men persist in looking for the failures and utterly ignoring the successes. It is singular how much evidence some people require to convince them of the utility of such a practice as spraying, and yet these same people will pay 75 cents apiece for peach trees, which are warranted to withstand any degree of cold because the sap in them "goes down" in winter, or does not "go down" (either warrant is equally effective in securing their orders), and they will not hesitate a moment to pay \$1 apiece for pear trees that are warranted to be "blight proof," though this warrant consists only in the word of a "fruit tree agent," that class of individuals which, with certain notable exceptions, has perpetrated more frauds on a long-suffering public than has any other, with the possible exception of the lightning-rod dispersers. It certainly is true that "people like to be humbugged."

BETTER BY \$1.50 A BARREL.

But admitting, for the sake of argument, that the practice of spraying still occupies debatable ground, let us see what has been done to show that it is effective in preventing the ravages of our insect and fungous enemies. If we look for evidence among our own neighbors I think it will not be lacking. I have talked with a number of men in this province who have told me that during last season, when so few apples were raised, the men who did succeed in producing a fairly good crop were those who persistently sprayed their trees; and not only did they produce more fruit than their neighbors who did not spray, but it was better fruit, free from the black spot, which so injures the appearance and keeping qualities of our apples, and free from worms. If we go farther from home there is hardly an experimental station in Canada or the United States which has not experimented upon this subject and issued bulletins on the results, showing in almost every case a large increase in the percentage of sound fruit from sprayed trees as compared with that from unsprayed trees. In this connection let me quote from an article in the last number of the Canadian Horticulturist. Speaking of the benefits of spraying it says: "As an illustration of this, where spraying was done from 75 to 90 per cent. of the fruit was clean, while from the trees in same orchards, not sprayed, only 10 to 15 per cent. of the fruit was fit to pack. Spys and other red fruit from sprayed trees commanded \$3.50 per barrel. The best fruit from unsprayed trees would bring but \$2 per barrel." Continuing, it says: "For fear the farmer with a small orchard may think this spraying business does not concern him, one man's experience is given. Mr. George Adams, of Smithville, Ontario, writes: 'I have eleven Spy trees. Eight of them were sprayed, and the result was twenty-four barrels of the finest fruit I ever picked from them. I sold them at \$2.50 per barrel, and four barrels of culls at \$1 per barrel, \$64 in all. These culls were not spotted, but were undersized and wormy. The three Spy trees not sprayed gave three barrels of badly spotted fruit, which sold for \$2 per barrel, and about ten barrels of culls which I sold for \$1.25 for the lot.' That is to say, the sprayed trees brought \$3 each, and the unsprayed trees less than

\$3, a difference of more than \$5 per tree." Such instances might be multiplied, but it is not necessary.

KILLS BUGS, BUT NOT PEOPLE.

And now just a word as to the effect of spraying upon the fruit. There are still some people who feel that substances which are so effective in destroying insects and fungi ought to have some injurious effect on the consumer of the fruit, and who, therefore, feel that they are tempting Providence every time they eat an apple or a bunch of grapes that has been sprayed. For the benefit of such people let me quote from the late Mr. Lodeman, of Cornell University, a recognized authority on spraying. He says: "Fears have been entertained that some substances are dangerous, even when not visible, on account of their effect upon the crop, which was supposed to be poisoned. This subject was well agitated when Paris green and London purple began to be commonly used in the destruction of the potato beetle. My analyses were made, but no arsenic could be found either in the tubers or in the parts above ground, and soon all fears of arsenical poisoning disappeared and potatoes treated with the arsenites were used without question. Another equally groundless objection was raised in regard to apples which had been sprayed for the canker worm or codlin moth. It was said that the bloom found on such apples consisted largely of the arsenic which had been applied to the trees to destroy insects, and that such apples were unfit for use. These reports have led to many analyses of sprayed fruit, and only in rare cases has even a trace of arsenic been found. It is only when very late applications are made, such as are utterly useless, that any of the poison is found upon the fruit, and then the quantity is so minute that it could in no way cause injury to the consumer. But even though all the poison sprayed upon the apples in making necessary treatment would remain there undisturbed, a person would be obliged to eat at one meal eight or ten barrels of fruit in order to consume enough arsenic to cause any injury. As a matter of fact, however, the poison all disappears during the growth of the apple, and these are as wholesome as though no treatment had been given, and even more so."

Similar objections have been raised against grapes sprayed with Bordeaux mixture, and the following paragraph is a clear and concise statement of the facts bearing upon the case: An adult may use about eight grains of copper per day without fear of the results, and grapes properly sprayed would contain not more than eight-hundredths of a grain in four or five pounds of fruit. On this basis an adult may eat from 300 to 500 pounds of sprayed grapes per day without fear of ill effects from the copper.

Equally conclusive figures have been given by the Experimental Station of Michigan to show that there is not the slightest danger from pasturing stock in orchards which have been sprayed with Paris green. I shall not give these figures, because I believe that if anything could be done to convince fruit-raisers that it is a bad practice to pasture their orchards, a long step in the right direction could be taken, and it is possible that fear of evil effects of Paris green may help on the cause. It is probable, however, that if this fear has any effect it will be to prevent spraying and not the pasturing of orchards.

Shawnee Horticulturists.

The Shawnee County Horticultural Society met at the residence of Mr. L. B. Garlinghouse, in Williamsport township. There was a good number in attendance. Dinner was eaten on the lawn. Flowers, consisting of sweet peas, larkspurs, marguerites, geraniums, spiraeas, nightshade, etc., were furnished by Miss Popenoe, Mrs. William Barnes, Mrs. Garlinghouse and other ladies.

Mr. A. B. Smith exhibited a device to aid those who make berry boxes. It consisted of a plate of copper eight by ten inches with a raised rim of wood half an inch high or more, and a pair of flanges half an inch high on the under side in order to raise the plate a little from the table. This sheet is punched regularly with awl-holes at distances of half an inch apart all over the plate. A paper of tacks is next spilled on the plate and gently shaken. In a moment nearly every hole contains a tack hanging by its head, and the surplus tacks are shaken to one corner of the plate. It is then ready for use. Next a magnetic hammer whose head is less than half an inch in diameter is applied to a tack head, lifted, and the tack driven into the berry box. The tacks are thus picked up and driven as fast as a man can operate the hammer. This is a quick and sure way of picking up tacks one at a time, right side up, and a quick



Even a brave man shudders at the thought of being torn and rended in the jaws of a ferocious tiger. In every walk of life, from that of the laborer to that of the professional man, there are thousands at the mercy of a tiger more relentless than any found in all India.

That tiger is the dread disease known as consumption. It slays more men and women yearly than there are rain drops in a summer shower. It steals upon its victim with noiseless tread.

There is a sure and certain protection against this deadly disease, and a sure and speedy cure for it, if it is resorted to in time. It is Dr. Pierce's Golden Medical Discovery. This wonderful medicine acts directly on the lungs through the blood, tearing down old, half-dead tissues, building up new and healthy ones, driving out all impurities and disease germs and expanding the lungs and introducing life-giving oxygen into the circulation. It has wonderful curative powers and allays all inflammation of the mucous membranes of the lungs and bronchial tubes. It makes the appetite keen and hearty, the digestion and assimilation perfect, the liver active, the blood pure and rich with the life-giving elements of the food, and the nerves strong and steady. It is the great blood-maker and flesh-builder. It has the most marvelous sustaining powers of any known medicine. Thousands who were upon the verge of a premature grave have testified to their recovery through its wonderful virtues. Medicines dealers sell it, and have nothing else "just as good."

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Dr. Pierce's book, "The Common Sense Medical Adviser," is a treasure in any family. It contains 1008 pages and 300 illustrations. A copy FREE to every person who will send to the World's Dispensary Medical Association, Buffalo, N. Y., 21 one-cent stamps, to pay the cost of mailing only. For cloth binding, send 31 stamps.

way of doing the business of making berry boxes. There is no patent on this invention and any one is welcome to make one for himself. Seeing the readiness with which the tacks drop into the holes, some one asked whether it was an "income tax."

In pursuance of the program, Mr. A. B. Smith responded to the title, "Success in Horticulture." He spoke at considerable length, showing the advantages of fruit-growing to the health, pleasure, comfort and welfare of the human family. Horticulture embraces the growth of the greatest number of products requisite to the welfare of the human family, and was therefore one of the most important pursuits. Success meant that a man should be able to benefit the human race as well as himself and family financially. His address won the hearty approval of his hearers.

Mr. McQuiston, being called upon, spoke a few words relative to the early efforts of himself and neighbors in planting fruit trees. His remarks were mostly reminiscent.

Judge Wellhouse spoke of his early efforts at planting trees. He disclaimed any attempt to improve society or benefit humanity in planting trees; on the contrary, he admitted that the planting of his trees was from a selfish motive, his object being to plant such trees as would bear fruit that would sell well rather than such trees as would bear delicious fruit that would soon rot.

Mrs. J. F. Cecil read a paper on "Wife's Help in Horticulture." It was full of good hints and ideas.

Mr. Tom McNeal was called upon and gave something of his experience in horticulture in western Kansas and the woman's connection with it.

Mr. H. G. Larimer responded to an invitation with a few words relative to woman's help in horticulture. His remarks, however, were presented from the standpoint of a bachelor. Being asked how he could possibly know so much, he instantly replied that all bachelors as well as married men had mothers.

Mr. Miller responded to an invitation to speak from the point of view of a minister. Horticulture was the first employment of the human race.

Mr. William Barnes spoke a few words on the neglected topics, "Fruit and Vegetable Diet" and "Horticulture on Our Tables." His remarks were to the point. He promised before the time of the next meeting the issue of a new work on "The Apple in Kansas."

Mr. A. L. Brooke spoke of "that much-abused apple," the Ben Davis. He showed that the Ben Davis is still bought in the market in preference to any other apple; that it is a good cook-

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ing apple, and can be had when no other apple can.

Mr. Wellhouse agreed with him and extolled the Ben Davis, "except that it lacks that spicy acidity that some people want. And unless some good apple shall appear combining the good qualities of the Ben Davis with a spicy tartness, the Ben Davis is good for forty years yet." Asked how a farmer can best preserve apples, Judge Wellhouse said a farmer could keep apples in his cellar by keeping the temperature quite low and uniform, a little above freezing, and with only slight ventilation. Much ventilation has a tendency to change the temperature, which should never be allowed to go below freezing nor above 50°, nor near it if possible.

A number of ladies and gentlemen rendered agreeable vocal music.

Messrs. M. E. Henderson, Berryton; G. W. Strawn, Pauline; and H. G. Larimer, Topeka, were elected to membership.

A vote of thanks was extended to Mr. Garlinghouse and to the singers for their very pleasant entertainment.

The next meeting will be held at the Reform School, Thursday, August 4. The following is the program for that meeting: "What I Know of Horticulture," D. H. Hefebower; "A School-ma'am's Dream of Horticultural Life," Miss Belle Marple; "Physiology of Plants," B. B. Smyth; "Horticultural Education in Schools," Dr. H. W. Roby. S.

In the Dairy.

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

Care of Dairy Utensils.

Sarah E. Wilcox says in Country Gentleman that neither scalding nor boiling "ter should come in contact with vessels used to contain sweet or sour milk. All with cold or lukewarm water all traces of the milk have been removed.

Wash one of two glass tumblers, which have held milk, in scalding water, the other in cold water before the hot-water bath; the one washed with scalding water looks dingy and dull, the other clear and sparkling. Upon the surface of the one has been deposited a thin coating of milk, which in the other was removed by the cold bath. The same processes produce like results with tin. The coating deposited by the boiling water may not be perceptible to the eye, as in the case of the tumbler, but it is there as truly as are the bacteria in the air we breathe, in the water we drink, and which the microscope reveals beyond dispute.

Smooth surfaces, absence of grooves and seams, should characterize as far as possible every device of the dairy. Manufacturers of dairy implements should have their attention especially directed to this subject, and all utensils which are imperfect should be rejected by the buyer, none purchased which furnish lurking places for unwholesome germs. Many a churning of butter, to the chagrin of the maker, has been off flavor because skimmer, pans, pails or churns were not immaculate. And this condition resulted neither from lack of knowledge nor due attention, but because implements used were so constructed that the germs or bacteria which act unfavorably upon butter could not be reached and destroyed.

Have not women been often maligned, the product of their dairy adversely criticised, their skill and neatness called in question from miscause, which can only be removed by the dairy people of the country combining and demanding of manufacturers more careful construction of dairy utensils?

The butter bowl is another thing to be carefully guarded. It is doubtful if wood should ever come in contact with cream or butter, but until there is something better the bowl must be used. Bowl and ladle should be vigorously rubbed with salt very often, if not every time they are used, and the butter should stand in the bowl as short a time as possible.

Every tin vessel used for milk, sweet or sour, should be well washed in cold water, then in warm water, then with boiling water. If all tin utensils were treated in this way the use of sal soda would seldom be necessary.

A lecturer at one of the county farm-

ers' institutes recommended scouring pans, pails and cans with salt. Would not this cause the tin rapidly to deteriorate? Washing with strong soapsuds occasionally, before the hot-water bath, suffices to sweeten, and will not in any way injure.

One of Our Mistakes.

I sometimes think it would be more profitable to our fellow workers if we would sometimes relate our failures or mistakes instead of always writing of our successes. Last year we made a mistake which cost us a valuable cow. It was an expensive lesson, and I have thought that perhaps by relating it some one else might be benefited by our lesson.

The cow referred to was a fine, large animal, when in milk a very flush milker, due to be fresh in May. She with the rest of the herd was running on a pasture of rye and oats; each morning the milch cows were fed a feed of oats and bran and occasionally she was allowed to eat with the milkers.

We noticed her bag was filling up and so milked her before she was fresh; she gave a candy-pail full of milk at a milking.

In twenty-four hours after the calf was born the cow was dead from milk fever. As soon as we discovered she was sick we commenced doctoring her, but all we could do was of no use. We are confident now it was liberal feeding caused her death, and henceforth will feed more dry feed to cows expected to be fresh at this time of year when pastures are good, even if we have to keep the cows stabled part of the time.

We believe that one ounce of prevention in a case of this kind is worth ten pounds of cure. Our cow was too far gone before we noticed that she was needing any medicine to cure her.—Mrs. J. F. Edwards, in Farm, Field and Fireside.

Bad Odors in Milk.

It is a well-known fact and one which admits of no dispute, that in order to manufacture a perfect article we must employ perfect material. This is just as true in the manufacture of butter and cheese as in any other article of commerce. Every man of any experience knows that the open and avowed enemy of fine flavor in butter and cheese are bad odors. These may be of great variety but are most likely to be those arising from something the cows have eaten or from surroundings in the dairy barn or dairy house. No matter what the source, it is sure that the best results are only possible by the total eradication or elimination of such odors. No matter whether the milk is to be made up at home, sent to the creamery or cheese factory, sold direct to the consumer, or shipped directly to the city, it should be relieved of all deleterious odors. Every time a dairyman resorts to this practice he adds to his reputation for the production of a pure and wholesome article of food.

The only absolute sure way to rid milk of foul odors is by aerating milk and cooling it. Simple cooling will not suffice; for the cooling of milk without aeration thoroughly locks up and holds the odors. On the other hand, the aeration of milk destroys and sets free the bad odors entirely. The best possible results are obtained by aerating and cooling the milk at one and the same time.—Elgin Dairy Report.

Large War Order for Butter.

The Navy department has ordered 121,000 pounds of the best quality of creamery butter, and a Washington, D. C., merchant received the order. James F. Oyster, Washington, was awarded the contract. He has already sent 15,000 pounds to Mare Island, Cal., and over 6,000 pounds to Key West, and will deliver the remaining 100,000 pounds at the Brooklyn navy yard. The butter is packed in three-pound cans, hermetically sealed, and these in turn are packed in cases holding twenty-four cans each.

Dairy Notes.

The number of centrifugal cream separators in use exceeds 100,000. This represents an expenditure of about \$20,000,000 which the dairymen have been able to invest for one class of machinery within ten years.

If there is not plenty of shade in the pasture lots construct an open shed where the cows can stand a few hours each day. When this has been arranged it is easy to note the difference in the herd and the amount of milk produced.

Aerating of milk is not a new thing, but among the patrons of the creameries a disposition of allowing anything to go has been practiced too long. The man at the weigh can must talk and preach

every day to his patrons about the care of milk for the factory.

In a great many instances I have noticed milkmen and creamery patrons using old battered and rusty cans hardly fit for calf feed. If it does cost a few dollars to purchase new tinware these old cans should be discarded if the product of the dairy is to be delivered in first-class condition.

There has been a great deal of talk and more written about Pasteurization the last few years. Where it is introduced it is giving excellent satisfaction in this as well as other States. During the summer months it is quite a problem to keep milk and cream sweet any length of time without using preventives and by fixing up for this work the milk and cream can be cared for quite economically.

It is generally held that a cow must yield 200 pounds of butter a year before she begins to make any profit for her owner. If one has a cow that makes 125 pounds, another that makes 150, a third that makes 200, a fourth that makes 225 and a fifth that is good for 250, the total is only 950 pounds a year or an average of 190 pounds for each cow. The herd may be losing money. Sell the 125 and 150-pound cows and the remaining three will make a little profit.

In caring for milk either for the city milk trade or the creamery extra caution is needed in warm weather, but at any time of year an aerator is one of the things that is necessary. It will require less time and there is less possibility of having milk with offensive odors that are so common in many places when the milk is aerated and held until the next morning. On most of our farms where there are streams of running water or a good well provide a suitable tank and let the cans remain in the same over night.

The following method has been recommended for keeping butter sweet and firm: Make the butter into rolls and wrap in pieces of muslin. Make your brine in the following manner: Put enough salt in six quarts of water to cause an egg to float in it; add two table-spoonfuls of granulated sugar, and half a table-spoonful of saltpeter. Let the brine come to a boil and when cold strain it over the butter. The brine should more than cover the butter, which should be weighted sufficiently to keep the rolls beneath the surface and exclude the air.

The Sword of General Tarleton.

There has just been placed in the State house at Columbia, S. C., side by side with the swords of Marion and other Revolutionary generals, the sword that was once owned by Tarleton, bitterest and most cruel of Tories in the war of the Revolution. This reminder of the early struggles of the nation is the property of Col. T. E. Dickson, of Columbia, whose ancestor picked it up at the battle of Cowpens after the defeated Tory dropped it in the course of a personal encounter with Col. William Washington.

In appearance this sword might attract small attention unless the observer took the trouble to carefully examine and note the small gaps here and there that tell of fierce conflict, the long scratch on the guard, and the cut in the iron knob at the end of the hilt. All these point to the various encounters that history tells us Tarleton experienced in the days of his fierce and bloody warfare. Every nick and every scratch form signs of battle with the patriots, with Tarleton's own countrymen, against whom he was more bitter than the bitterest British soldier.

The battle of Cowpens, in which the sword was lost by the Tory leader, was one of those decisive contests which gave the patriots much cheer and showed the British the way to defeat.

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Was Never Well

But Hood's Sarsaparilla Has Given Her Permanent Health.

"I was a pale, puny, sickly woman, weighing less than 50 pounds. I was never well. I had female troubles and a bad throat trouble. I came across an advertisement of Hood's Sarsaparilla and had faith in the medicine at once. I began taking it and soon felt better. I kept on until I was cured. I now weigh 103 pounds, and never have any sickness. Hood's Sarsaparilla will not cure. My blood is pure, complexion good and face free from eruptions." MRS. LUNA FARNUM, Box 116, Hills Grove, Rhode Island.

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Is the best—in fact the One True Blood Purifier.

Hood's Pills are tasteless, mild, effective. All druggists. 25c.

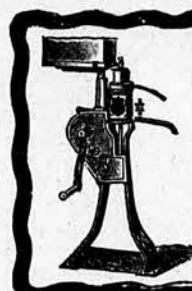
During that contest Col. William Washington, famous as an American leader of cavalry, engaged Tarleton and the band of British troopers he commanded. As the battle waged the two officers pressed their way toward each other, and finally their swords clashed. Perhaps it is more fitting to call them sabers, as the curved blade of Tarleton's weapon shows it to have been more of that class.

Washington was much the better swordsman, and that is why he succeeded by a fierce blow in breaking the Tory's guard and cutting his fingers so severely that the Colonel dropped his weapon and sought safety in flight. This was the event which led the patriot girl to say to Colonel Tarleton on a later date, when he spoke sneeringly of Colonel Washington, a sentence of retort that has come down to us in history. "I am told," said Tarleton to her, "that this Colonel Washington is so ignorant he cannot even write his own name." "However that may be, Colonel Tarleton," the lady answered, "there is no one who knows better than you," glancing at the Tory's scarred right hand, "that Colonel Washington can make his mark."

Tarleton's sword is three feet six inches long, the six inches including the hilt, which has an iron guard. The shank of this hilt is cased in wood that was once covered with leather, but this the decay of years has removed. Colonel Dickson's grandfather, his mother's father, William Scott, secured possession of it as stated, because he happened to see the duel between Washington and Tarleton. Ever since that day the weapon has been preserved as a priceless relic in the family. It has not been given to the State of South Carolina, but is merely deposited in the museum for the purpose of placing in absolute safety such a genuine reminder of the days when the star-spangled banner began to wave.—Chicago Inter Ocean.

How Havana Volunteers Are Inspected.

A reader of Harper's Weekly who was in Havana in 1889 tells of being a spectator at the morning inspection of the Havana Volunteers. He says: "The first morning, I noticed that after the officers had inspected the front rank of one company and had gone to the next, a good many of the men who had first been inspected changed places with their mates in the rear rank, and were inspected again on the return of the officers by the rear. I found this shifting of places happened every morning, and the conclusion was unavoidable that the most presentable Volunteers always lined up first in the front rank, and then swapped places with companions of the rear who were less fit to bear scrutiny."



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The Home Circle.

THE SONG OF THE CAMP.

"Give us a song!" the soldiers cried,
The outer trenches guarding,
When the heated guns of the camps allied
Grew weary of bombarding.

The dark Redan, in silent scoff,
Lay, grim and threatening, under;
And the tawny mound of the Malakoff
No longer belched its thunder.

There was a pause. A guardsman said:
"We storm the forts to-morrow;
Sing while we may, another day
Will bring enough of sorrow."

They lay along the battery's side,
Below the smoking canon;
Brave hearts from Severn and from Clyde,
And from the banks of Shannon.

They sang of love and not of fame;
Forgot was Britain's glory;
Each heart recalled a different name,
But all sang "Annie Laurie."

Voice after voice caught up the song,
Until its tender passion
Rose like an anthem rich and strong—
Their battle-eve confession.

Dear girl, her name he dared not speak,
But, as the song grew louder,
Something upon the soldier's cheek
Washed off the stains of powder.

Beyond the darkening ocean burned
The bloody sunset's embers,
While the Crimean valleys learned
How English love remembers.

And once again a fire of hell
Rained on the Russian quarters
With scream of shot, and burst of shell,
And bellowing of the mortars.

And Irish Nora's eyes are dim
For a singer, dumb and gory,
And English Mary mourns for him
Who sang of "Annie Laurie."

Sleep, soldiers! still in honored rest,
Your truth and valor wearing;
The bravest are the tenderest,
The loving are the daring.

—Bayard Taylor.

THE PHILIPPINE NATIVES.

Dewey's great victory and the consequent conjectures as to the ultimate fate of the Philippine islands have developed an interest in everything appertaining to them. Outside of their strategic importance, perhaps, there is nothing of more interest than their present population, made up, as it is, of heterogeneous elements, of which the curious dwarf people, collectively known as negritos, form by far the most interesting group. The origin of the negritos is enshrouded in the darkness of a distant past. They are, so far as we know, wherever they appear, indigenous to the soil; they are autochthones; like Topsy, they "jes growed." However, from their wide dispersion and general physiological resemblance, it is evident that they must have spread from some one center. They are known to exist, variously modified by climatic and other influences, in India, Malacca, Annam, the Sunda islands, New Guinea, the Andaman islands and the Philippines, and if we adopt the classification of Giglioli, who includes the African dwarfs with them, in Africa. These Africans Hamij classifies under a distinctive collective head as negrillos.

The ancients, contrary to general opinion, were acquainted with both the African and Asiatic dwarfs, many of which have been quite recently rediscovered, and though these accounts are mixed up with considerable fable, they nevertheless indicate a knowledge of some kind, probably not very well defined. One of these legends, which is reproduced by Pliny with some detail and without reservation, gives as an explanation of the annual migration of the storks southward, that they go to combat and devour the pigmies who dwell there; and Aristotle says, "The storks pass from the plains of Scythia to the marsh of upper Egypt, toward the sources of the Nile. This is the district which the pigmies inhabit, whose existence is not a fable. There is really, as men say, a species of men of little stature, and their horses are little also. They pass their lives in caverns." He is non-committal as to the relation of the storks to the pigmies, and is, therefore, fair to presume that he did not believe in the fable. These little negroes, as we know them, appear in isolated groups throughout the territory above referred to, and which from its extent leads to the inference that they were at one time much more numerous, but that owing to physical inferiority they have been overcome and driven to localities either undesirable or inaccessible to their foes. The facts sustain this view, in so far as wherever found, it is just such places that they occupy, and these circumstances also account in great measure for the comparative purity of many of the groups.

Those living in the Philippines, or rather, in the island of Luzon, are known as Aetas, the name being apparently derived from a local one, Aigtas, or Inagtas, which seems to mean black. The average height of the men is 1.397

m. (4 feet 7 inches,) and that of the women 1.336 m. (4 feet 4½ inches). Those living in the mountains are, according to Montano, a trifle taller than those living on the coast, from which the above measurements were made by Marcke. The general average height of all that have been measured from all localities on the island, both men and women, is 1.413 m. (4 feet 7½ inches). The proportion which the head bears to the individual is about seven heads to the total height. It is, therefore, relatively larger than in Europeans, though actually small, as its cranial capacity is only from 69 to 72 cubic inches. The chest and shoulders are large, the arms fleshy without conspicuous muscular protuberances, the legs much less fleshy than the arms, and the heel does not protrude. Their skin, according to travelers, is pronouncedly black, and their hair woolly, with a tendency to grow in tufts, forming curious little round balls, but with the hair and color the marked resemblance to the negro ceases, though it is more evident in the nostrils and lips of the Aetas than it is in the same features of the Mincopes, the negritos of the Andaman islands.

The head of the African negro is long; that is, its fore and aft diameter much exceeds its transverse diameter—it is dolichocephalic—while that of the negrito is broad and short—brachicephalic. Nor do the jaws of the negrito protrude to the same extent as in the negro; prognathism is less pronounced or absent. Moreover, the negrito's skull is so well defined and so distinctive that anthropologists claim that negrito origin or intermixture can readily be detected wherever it occurs, and, arguing from this peculiarity, the claim is made that the negrito element had a more or less considerable part in the formation of the populations of Japan and Bengal.

Notwithstanding their diminutive figures, they are said to show relatively considerable muscular strength, using with ease bows that the strongest English sailors could not string. Their senses of sight, smell and hearing are also said to be very acute. It is related that they will, on the darkest night, spear, with unerring aim, turtles that stick their heads out of the water to breathe, being guided in throwing their spears solely by the feeble noise made by the turtle. They are short-lived, the average duration being twenty-two years, fifty years being extreme old age. Phthisis, unknown before their intercourse with Europeans, is playing sad havoc with them, and bids fair to exterminate the race, as in addition to its fatal effects it also seems to produce sterility.

Rienzi, who collected and summarized their traditions, represents them as having formerly occupied the whole of Luzon, and as having had some sort of a government, with a council of chiefs. Most of the travelers who have visited the island speak of them as living a vagabond life, and subsisting exclusively on wild fruits and the products of fishing and hunting, but Montano visited them in their mountains, where he found them located in a clearing where they raised bananas, rice, sugar cane and yams, and where they had a number of houses, of which that of the chief was quite comfortable.

These conflicting accounts seem to verify the conclusions arrived at by a number of observers of their habits in these islands and elsewhere, who maintain that where they do not settle down, build huts and cultivate the soil, that the fault lies with their persecutors. The family ties seem to be very strong with them, and it is apparently mainly due to their influence that the members of the various isolated groups are held together and total disintegration resisted.

They are faithful in marriage and have but one wife. Father la Gironiere, in giving an account of their courtship and marriage customs, says: "The young man who has made his choice addresses himself to the parents, who never refuse, but send the girl into the forest, where, before day, she conceals herself. The young man must find her. If he does not succeed he must renounce all claim to her." From which it would appear that the whole matter is settled by the girl. The marriage ceremony is very curious. It is performed by the two parties climbing two flexible trees growing near together, which an old man bends toward each other, and when their heads touch they are legally married. Feasts and warlike dances complete the festivities.

Cannibalism has been charged against them, but the most careful observers deny it, and, in fact, claim that the negritos have nowhere been found to be cannibals, unless, perhaps, the practice might exist among the negrito-papwans, a mixed tribe of New Guinea, where they have yielded to the influence of example. Their clothing is decidedly scant, and

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their arms for hunting and war consist of a short lance and a single kind of arrow, which is, however, poisoned and capable of producing a wound which, if not always fatal, is always serious, as Father la Gironiere found out by experience. He was pricked in the thumb by one while digging up a skeleton and was more or less disabled for over a year as a consequence.

The Aetas speak Bisaya, a local Malay dialect, with which they mingle a number of foreign words, which some investigators think may possibly be the remains of the primitive tongue.

Montano reports that he found no signs of religion and la Gironiere confirms this, though he states that they worship, at least temporarily, rocks and tree trunks, in which they find resemblance to some animal. They have a great veneration for the dead, and for some years after burial they deposit betel and tobacco upon their graves, where the bow and arrow used by the deceased are also hung, in the belief that every night he comes forth to go to the chase. —Philadelphia Times.

Mr. Frank R. Stockton's new serial, which will run in Harper's Weekly during the summer months, has been entitled "The Associate Hermits." It is a story of vacation life in the Adirondack woods, and in this subject Mr. Stockton



FRANK R. STOCKTON.

has found an excellent opportunity of giving full play to his characteristic and fanciful humor. The general tone of this tale is the same as that of the author's famous "Rudder Grange," and it will continue through thirteen numbers of the Weekly. It began with the issue of July 2.

For the Guest Room.

A simple but very effective bedspread is made as follows: For the lining use yellow cambric, as near the color of the center of field daisies as possible. Cover with white dotted Swiss muslin; a pattern with rather large dots is the most suitable for the purpose. Fill in the dots with French knots, worked with filo silk, the same shade as the lining. With white thread outline the petals of the daisy, and fill in with white filo silk. Finish the spread with a two-inch hem, which should be feather-stitched with yellow Asiatic outline silk. If desired, the sides can be trimmed with a frill of white lace. A cover for the dressing table or bureau can be made in the same manner as the spread, and is very pretty, as well as serviceable. Finish the edges with feather-stitched hem, trim one side and

both ends with a frill of white lace, and place bows of yellow ribbon in each corner.

A pretty cushion for the dressing table to match the cover is made of white surah silk and yellow silk or satin. Have the cushion square, cut the lining the desired size, make a puff of the white silk to extend across the cushion cornerways, using the yellow silk for the two corner pieces. On one of the corner pieces embroider a spray of daisies, worked in the same manner as those on the bedspread, and on the opposite corner place a large bow of white or yellow satin ribbon. Finish the cushion with a full frill of white lace, like that on the bureau scarf.—E. L. Layson, in the Epitome.

Recipes.

Buttermilk Pie.—Yolks of three eggs, one and one-half cupfuls of sugar, one and one-half cupfuls of buttermilk, two tablespoonfuls of flour, one tablespoonful of butter, one tablespoonful extract of vanilla; bake with an under crust. This is enough for two pies.

Green Tomato Pie.—Pare and slice five or six green tomatoes, have the under crust ready, and put them in it; add the following: One-half teaspoonful of vinegar, one cupful sugar, small amount of butter. Sprinkle over it a little allspice and flour; put on the top crust, and bake in a moderate oven.

Cheese Straws.—Three tablespoonfuls flour, three tablespoonfuls grated cheese, one tablespoonful of butter, one tablespoonful milk, one-half teaspoonful salt, one-fourth teaspoonful pepper, yolk of one egg; mix together dry, and the milk last; cut in strips, and bake. These are pretty tied with yellow ribbon, for any reception or 5 o'clock tea.

Good Ginger Cookies.—One cupful of sugar, one of butter, one of New Orleans molasses, one of milk, two teaspoonfuls of soda, dissolved in milk; one tablespoonful of ginger; or, two cupfuls of sour cream can be used in place of the butter and milk; if the cream is very sour, use a very little more soda. Add sufficient flour to roll out nicely.

Lemon Butter.—One cup of white sugar, three eggs, butter the size of half an egg; the juice and grated rind of one large lemon. After beating all well together, put the mixture into a bright tin basin and set into a pail of boiling water. Stir it constantly until it is thick. This is very nice for filling tarts or a layer cake, and for small cakes, if split or put together with this jelly.

Frosted Eggs on Toast.—Beat the whites of as many eggs as are required for a meal to a stiff froth, adding sufficient salt and pepper to taste; and drop several spoonfuls on slices of toast, previously prepared. In the center of each mound of froth place an unbroken yolk; place in a quick oven for two minutes, or until the white is a dainty brown. Serve immediately, garnished, if possible, with a little parsley.

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The Young Folks.

THE STAR SPANGLED BANNER.

O, say, can you see by the dawn's early light
What so proudly we hail'd at the twilight's gleaming,
Whose broad stripes and bright stars
Through the perilous fight
O'er the ramparts we watch'd were so
Gallantly streaming;
And the rocket's red glare, the bombs
Bursting in air,
Gave proof through the night that our flag
Was still there!
O, say, does that star-spangled banner
Yet wave
O'er the land of the free and the home of
The brave?

On that shore, dimly seen through the mist
Of the deep,
Where the foe's deadly host in dread sil-
ence reposes,
What is that which the breeze o'er the
towering steep,
As it fitfully blows, now conceals, now
discloses?
Now it catches the gleam of the morning's
first beam
In full glory reflected now shines on the
stream.
'Tis the star-spangled banner, O, long may
it wave
O'er the land of the free and the home
of the brave.

And where is that foe which so vauntingly
swore
That the havoc of war and the battle's
confusion
A home and a country should leave us no
more?
Their blood has wash'd out their foul
footsteps' pollution;
No refuge could hide the hireling and slave
From the terror of flight or the gloom of
the grave.
And the star-spangled banner in triumph
doth wave
O'er the land of the free and the home
of the brave.

O, thus be it ever, when freemen shall
stand,
Between their loved homes and war's
desolation;
Blest with vict'ry and peace, may the
heaven-rescued land
Praise the power that hath made and
preserved us a nation.
And the star-spangled banner in triumph
shall wave
O'er the land of the free and the home
of the brave.

—Francis Scott Key, 1815.

Written for Kansas Farmer.

YOUNG FOLKS IN THE OLD COUNTRY.

BY ANNA MARIE NELLIS.

NUMBER 29.

THE ELBE.

Next to the Rhine, the Elbe is the
most visited of the rivers of Europe. It
is truly a very beautiful river, and from
the south of Dresden, flowing north-
ward, it passes through a very charming
portion of southern Germany, which is
called the Saxon Switzerland. Inside of
the city the river does not show itself
to advantage; the steamboat landings
and bathing establishments, together
with business houses, occupy its banks
to the utter obliteration of all natural
beauty.

At 1 o'clock in the afternoon of May
31 our Berlin party went aboard the
steamer "Kaiser Friedrich" for a ride up
the river (south) to enjoy the beautiful
sights we had been told we could see
along its banks. The weather was fine,
the boat clean and pretty, and every-
thing seemed to be just right for a very
pleasant excursion.

We started from the old bridge—the
"Augustus Bruecke"—and the first curi-
osity that attracted our attention was
the smokestacks of the steamer being
lowered to let the boat pass under the
arch of the next bridge; as this bridge
was built of stone, it was somewhat
easier for the smokestack to come down
than for the arch to be lifted up or
swung open; so, in reality, it was not
much of a curiosity after all.

This bowing of the steamer's chim-
neys to various bridges was repeated
several times before we were beyond the
city. We also noticed another curiosity
(to us), and that was the manner in
which the canal boats were propelled
through the city. I call them canal
boats because they appeared like arti-
cles of that kind which I had seen in
America. They were drawn along on
one side of the river by an endless cable,
after the manner of moving cable cars
in the large cities. This we thought a
very great improvement over the man-
ner of navigating similar boats on the
Spree in the vicinity of Berlin, for there
they are pushed along by poles or are
drawn by men in harness after the
manner of mule farming in Arkansas.

But we soon had left the bridges, the
canal boats and the endless cable and
were entering the Saxon Switzerland,
and long before the spires of Dresden
were lost to sight the pretty green for-
ests and grassy lawns had come down
to the very edge of the river to greet
us. Big hills that might be called moun-
tains were on either side, and way up
on jagged points, surrounded with the
most delightful of green forests, could

be seen handsome villas and picturesque
castles.

Our progress up the river was slow,
for our steamer continually crossed and
recrossed to touch at the landings,
which are seldom more than a mile
apart. All along the Elbe in this lo-
cality are scattered numerous little sum-
mer resorts, fitted up with pretty flower
gardens, music, beer and other refresh-
ments so dear to the German heart—and
stomach. After riding nearly two hours
we were but little more than eight
miles from our starting place, but we
had enjoyed every moment, and, if time
had not been a grave consideration with
us, we could have wished to continue
the journey indefinitely, for the scenery
was so charming that the eye was never
tired and we could not become weary of
so much natural beauty. Our destina-
tion was Pillnitz—not a really poetic or
soulful sound, but a most beautiful spot,
notwithstanding the name suggested
proprietary medicine advertisements.

The Kings and Queens of Saxony
have been in the habit of coming to Pill-
nitz every summer to enjoy the cool
breezes, the beautiful flowers, forests
and green sward, all of which were here
in the highest perfection when we
landed at the broad steps right in front
of the palace. This building is not in
itself very imposing nor beautiful, but
setting, as it does, in the midst of such
fine scenery, it presents a very agree-
able and charming appearance.

A long series of buildings, possibly
300 feet in extent and two and three
stories in height, constitute the palace
proper, but back of it rise the little
mountains covered with the most beau-
tiful green trees I ever saw; and around
it were flower beds, banks of roses and
shrubbery in the greatest profusion;
the whole constituting a fairy scene as

seem to be parallel with each other nor
at right angles. The city must have
been laid out by an exceedingly cross-
eyed surveyor. However, we were able
to find our way to the porcelain works
from the steamer in about fifteen min-
utes. We found that the town people
spoke a dialect that was much different
from the German we hear in Berlin, and
I found it difficult to understand them.

The building of the Royal Porcelain
Works is a very large structure of red
brick. We were ushered into the large
display room to wait until the guide re-
turned with permission to escort us
through the establishment. After sign-
ing our names in the visitor's book and
paying one mark (24 cents) apiece we
began our visit. The guide told us the
manufactory was established in 1710,
and the employees number 800 and
nearly all are skilled artisans, each one
in some particular part of china making,
so that not one of the employees knows
the whole process of making the beau-
tiful chinaware.

For instance, a little figure of Cupid
has forty-nine different pieces, and
these are made in different departments,
and finally the parts are united and fin-
ished by a workman who understands
only that part of the trade. Every petal
of a china flower is made separately,
and the rose is finished by others than
those who made the parts. It requires
weeks to make a figured fruit dish. I
cannot describe the various processes,
and if I could it would be too tiresome
to read it. When we saw the great pains
taken and exactness required we did not
wonder at the enormous prices asked for
the beautiful articles we saw there. Small
bon-bon boxes were worth 200
marks; a china mantle piece was priced
at 8,000 marks; vases, dishes and dec-
orations of various kinds all marked

There were the tables and chairs and
buffet, with wine glasses, drinking
horns and beer mugs which were used
on that occasion.

In the old cathedral church are buried
most of the Saxon Kings and Queens
of the fourteenth, fifteenth and six-
teenth centuries. There are many things
about this church which I would like
to tell, but the columns of the Kansas
Farmer are not long enough.

We returned to Berlin with exceed-
ingly pleasant memories of Dresden,
Pillnitz and Meissen.

Where Money Didn't Count.

A lawyer had come all the way from
California to pay a \$10,000 legacy
over to Uncle Jerry Hopefield, who
had lived all his life in a little
town in Ohio, and after breakfast
two or three of us were invited to go
along and witness the transfer. When
we reached the house Uncle Jerry was
tightening up the hoops on the rain
barrel, while his wife had gone to see
a sick neighbor. They had been fully
identified the day before as the proper
parties, and now the lawyer said:

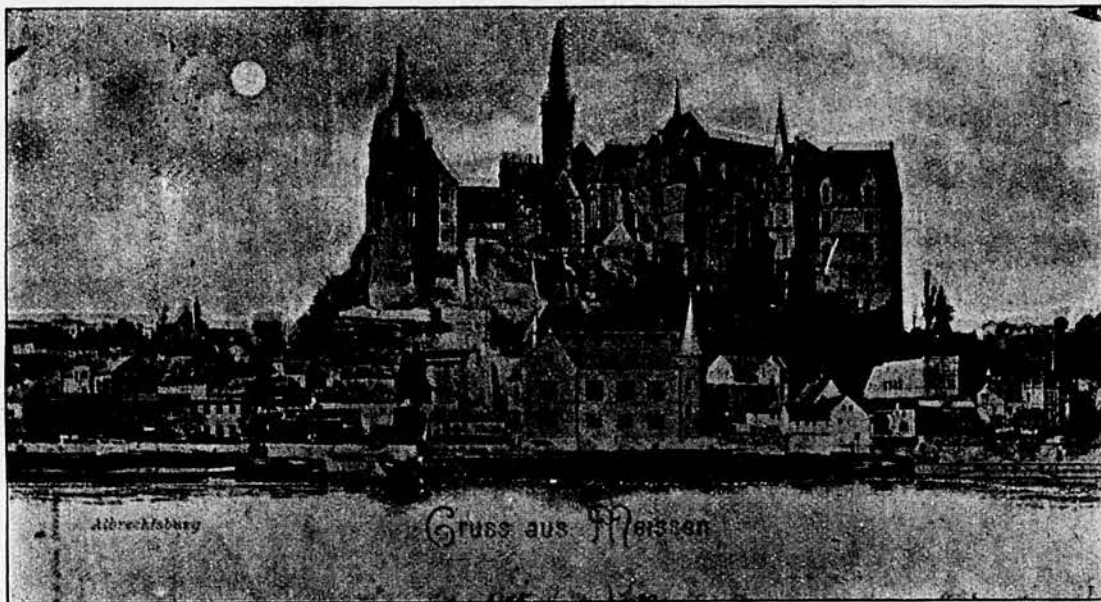
"Well, Uncle Jerry, I want to hand
you that money and get a receipt and be
off this morning."

"I'm kinder busy just now," said the
old man, as he stopped hammering for a
moment.

"Yes, but I have \$10,000 here for you.
I don't believe there's a man in the
world who wouldn't stop work long
enough to sign a receipt for such a for-
tune."

"Mebbe not, but it looks like rain,
and I want to get this bar'l fixed right
away. Can't you come over in about
an hour?"

"Look here, man, but did you ever see



Albert's Castle.

near as I can realize what that is.

The little village near the palace con-
tains about 200 inhabitants, and 199 of
these come out in the street to see the
visitors who land from every steamer.

The palace was being put in order
for the coming of the royal family early
in June; as they were "not at home,"
we did not call on them nor leave our
cards. I hope they will not be offended.

After a delightful half hour ramble
at Pillnitz we started on our return
down the river toward Dresden, and
soon the steamer was bowing politely
with its smokestacks to the several
bridges which demanded this homage
with a "stony stare." At the Albrechts-
burg we changed steamers and went aboard
for Meissen, which is twelve miles fur-
ther down the river. The scenery below
the city for the first three miles is not
at all beautiful from the river, as the
banks from Augustus bridge are occu-
pied by docks for boat landing, and lit-
tle villages with small buildings. The
nearer we approached to Meissen, how-
ever, the prettier the scenery appeared.
The hills on either side are covered with
beautiful green trees and some of the
highest had lovely castles on the high-
est points.

MEISSEN.

This little town is one of the oldest
in Germany; it was centuries old when
Dresden began to exist. It lies on the
left bank of the river Elbe between the
two small streams called Meisse and
Treibisch. It is now principally noted
for its old castle, church and china or
porcelain manufactory. We all have
heard and read about Dresden china;
well, it is made at Meissen, and not at
Dresden.

Meissen was founded by Henry I. (The
Fowler), King of Germany in 930. The
streets are narrow, crooked, and "run"
in almost any direction. No two streets

way up in the clouds.

Those who saw the magnificent dis-
play of Dresden china at the World's
Fair in 1893 can form an estimate of
what we saw at Meissen.

Leaving the factory we made our way
up the hill to the old castle, Albrechts-
burg. The picture sent herewith will
give an idea what its appearance is.
Notice the fourth window from the bot-
tom in the tower; well, I sat in that
window and made my memorandum for
this letter.

That tower was built by the order of
"Henry the Fowler" some time before
the year 1,000, and the church, whose
spire appears beyond the tower, was
built by the order of Henry's son, Otho
I, "Holy Roman Emperor" and also
Emperor of Germany. He was a very
holy man and killed several gentlemen
who didn't wish him to be Emperor;
but they should have known better than
to oppose such a good man. Well, he
built that church, and it has been, in
times gone by, a very fine one. Al-
brechtsburg as it appears now does not
all of it date back to the end of the first
millennium, but in 1471 it was generally
"overhauled," and from 1710 to 1864 the
porcelain works occupied it, and in 1883
it was all "restored" and made fit for
the show place it is. It overlooks the
Elbe and the country in all directions
and presents the finest view I had ex-
perienced up to the date I was there.

Albrechtsburg has not been occupied
as a residence since the beginning of
the seventeenth century. It is owned by
the town of Meissen and the King of
Saxony in partnership, and neither one
can sell it without the consent of the
other, so I did not buy it.

The interior is only beautiful for its
frescoes, and there are no furnishings
except in the banquet hall, where the
Kaiser was entertained two years ago.

"\$10,000 in all your life?" asked the law-
yer, as he opened the satchel and dis-
played a big package of new greenbacks.

"No, I never did," replied Uncle Jerry,
as he pounded away.

"Did you ever have a thousand dollars
of your own?"

"Lands, no!"

"Never had a hundred all at once,
did you?"

"Never. Durn that hoop, but it don't
want to go on!"

"I must ask you to get this business
over as soon as possible," continued the
lawyer, as the old man kept on at his
work.

"But it's going to rain."

"Yes, but here's your money."

"And I've got to get this bar'l fixed."

"It won't take over ten minutes to
fix up our business. Run along and fetch
your wife."

"See here," said Uncle Jerry, as he laid
down his hammer and wiped the back
of his neck, "Mariar has gone over to
Blodgett's to be gone an hour. Before
she went she said I must tinker up this
rain barrel."

"But can't you stop your tinkering to
handle \$10,000 in cold cash!" exclaimed
the lawyer in indignant tones.

"Yes, yes, I kin stop work; but what
about Mariar?"

"Well, what about her?"

"Why, she'd come home expectin' this
bar'l to be all tinkered up, and if she
found it wasn't, them \$10,000 wouldn't
hold her no more'n a tow string would
hold a hoss. She'd just shove me clean
down among the cabbages, and jump
on the bar'l with both feet and squash
it all to squash, and for the next week
I'd hev to walk around on tiptoe and
eat my meals in the woodshed."—Wash-
ington Star.

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ANGLO-AMERICAN ALLIANCE.

The fact that John Bull feels a considerable interest in his relatives on this side has long been manifest. His 10 per cent., 8 per cent., 6 per cent., 4 per cent., or finally, his 3 per cent.—if he could get it—seems very good interest. Since the United States got a navy John has become still more interested in us. Since our navy began knocking Spain's warships to pieces our fat relative has really laid aside all airs of condescension and has become chummy.

When, a few years ago, he reminded us officially that we were only a third-rate naval power, we got it back on him, and more, by calling his attention to the fact that he was only a third-rate bread-producing power and that in case of necessity we could shut up our bins and starve him to terms at short notice. This filled our fat relative with consternation, for of all things, John Bull hates to contemplate an empty stomach. The more he looked into the matter the more he found our assertion true. Would John Bull quarrel with his source of bread and beef? Would he? He did not wait for us to ask this question, but immediately busied himself at declaring his relationship, his admiration, his sympathy. At the first opportunity he made good his professions and is still in waiting to be called upon for moral, diplomatic, financial or armed support.

There is published in London, England, an agricultural paper—the *Cable*. It has a titled editor, the Earl of Winchelsea and Nottingham. It has been doubted whether the titled nobility of England would ever perceive anything worth notice, outside of England—unless it were some rich American girl anxious to exchange her wealth for a title. But the Earl of Winchelsea, who is owner of extensive farming lands in England, has awakened to the fact that America and American farmers are entitled to great respect. He says editorially in his last paper:

"Nothing could give a better indication of the amazing activity of the American nation with regard to farming matters than a perusal of the latest year book of the United States Department of Agriculture. This department takes a much wider view of its work and responsibilities than is taken by the English Board of Agriculture. Its main object is to help American farmers to a better knowledge of production and its tendencies at home and abroad. They are thus enabled to intelligently meet the requirements of home and foreign markets for material which may be profitably grown or manufactured on American farms. The department has also organized a comprehensive system of means by which the sciences that relate to agriculture may become familiar as household words among their farmers. At the present time American farmers produce meats of superior quality more cheaply than any other nation owing to the cheapness of their grains and grasses. As a further help in this matter, the State experiment stations are giving feeders information regarding the best means of nutrition, which will probably result in still greater economies in meat production. The United States government is very anxious that the people should not send money to other countries for sugar. It has, accordingly, distributed sugar beet seed among 22,000 farmers, to ascertain in which district the sweetest beets can be grown. In the year book, to which allusion has already been made, great stress is laid on the opportunities for new industries. It is pointed out that last year the United States paid nearly \$80,000,000 (\$400,000,000) for produce, nearly all of which might have been grown and prepared for use at home. The Department of Agriculture does not like this state of things, and intends to do its best to put an end to it. It offers to give seeds to any farmer who will tackle the reduction of the import list, and to send full instructions as to the best methods of production generally. That the farmers of America respond to the activity of their special

department is evident from the extraordinary demand that exists for official agricultural publications. The number of publications issued during the past year is 424, aggregating over 6,500,000 copies. Notwithstanding this enormous output of agricultural literature, we are told that the supply is quite inadequate to meet the increased demand, and that thousands upon thousands of persons, earnestly desirous of procuring the information these publications are designed to convey, have to remain ungratified. No wonder the American farmer is carrying all before him. He is always wanting to learn the latest improvements. By his zeal he helps to keep up the high efficiency of his department. In fact, it seems to be a point of honor between American farmers and their Department of Agriculture as to which side shall show the most conspicuous energy. It would be interesting to know how many publications were issued by the English Board of Agriculture during 1897, and what was their aggregate circulation. How many copies, for instance, are issued every year of the *Board of Agriculture Journal*? We are afraid the English farmer has not hitherto shown himself very appreciative of the efforts of the Board of Agriculture to supply him with literature concerning his profession. But is the fault wholly on his side? The official agricultural publications of this country are presented in a very uninteresting form, and it is, to a great extent, on that account, that farmers display such an utter indifference to them. If, instead of the *Quarterly Journal*, a year book were to be issued on the lines of that issued by the Agricultural Department of the United States, we believe that it would receive a very hearty welcome. The popularity of America's *Agricultural Year Book* is shown by the fact that, of the present sumptuous issue, no fewer than half a million copies have been called for.

It may be premature, but, in view of the many suggestions of an Anglo-American alliance, it may be suggested to the Earl that his country seems to be experiencing a healthful awakening, and the time may come when England's application to become a State in our Union can receive favorable consideration here. This is the only kind of alliance we have ever entered into, and it has proven eminently satisfactory to all who have entered into it.

SYNOPSIS OF GOVERNMENT CROP REPORT FOR JULY.

Preliminary returns to the statistician of the Department of Agriculture on the acreage of corn indicate a reduction of 3 per cent. from the area harvested last year. There is a decrease of 502,000 acres in Illinois, of 303,000 in Iowa, of 661,000 in Missouri, of 722,000 in Kansas, and of 482,000 in Nebraska. Many other States likewise show a reduced acreage, but a majority of the Southern States report an increase ranging from 1 per cent., in the case of North Carolina and Georgia, to 8 per cent. in that of Texas. The average condition, 90.5, although 7.6 points higher than the condition for the corresponding date of last year, is, with the exception of 1892 and 1897, the lowest July condition in ten years, the average for that period being 91.3. Conditions vary widely among the different States, Iowa reporting 100, Nebraska and Ohio 90, Kansas and Illinois 83, and Missouri 78.

The condition of winter wheat, 83.7, is 5.1 points lower than last month, but is still 4.5 points higher than at the corresponding date last year, and 4.3 points higher than the average for the past ten years. The principal State averages are as follows: Pennsylvania, 87; Maryland, 86; Tennessee, 90; Kentucky, 93; Ohio, 89; Michigan, 98; Indiana, 94; Illinois, 66; Missouri, 68; Kansas, 89, and California, 40.

The average condition of spring wheat is 95. This is 3.8 points higher than at the corresponding date last year, and is 6.2 above the average for the past ten years, and is the highest July average, with two exceptions, in thirteen years. The principal State averages are as follows: Minnesota, 91; South Dakota, 89; North Dakota, 92; Iowa, 97; Nebraska, 102; Washington, 102, and Oregon, 105. The average condition of spring and winter wheat combined is 89.4, which is 4.5 points higher than at the corresponding date last year, and 6 points higher than on July 1, 1896. The percentage of the wheat crop of 1897 reported as still on hand on July 1, 1898, is 3.36 per cent.

The average condition of the oat crop—92.8—is 5.2 points lower than last month, but is 5.3 points higher than at the corresponding date last year, 4.9 points higher than the average for the past ten years, and is, with one exception, the highest since 1889.

The average condition of barley is 85.7, which is 6.9 points higher than last month, but is 2.8 points lower than on July 1 of last year and 3.1 below the July average for the past ten years.

The average condition of winter rye is 93.8, compared with 95 on July 1, 1897, and 90.6 the July average for the past ten years. The average condition of spring rye is 96.6, as against 90 on July 1, 1897, and 90.6, the July average for the past ten years.

Returns of assessors furnished to the Kansas State Board of Agriculture from seventy-three counties show 15,500,000

bushels, or nearly 29 per cent., less corn as having been in the hands of their farmers March 1 this year than at the same time in 1897. Jewell county farmers were holding on to 4,179,000 bushels; Republic, 3,754,000; Brown, 3,155,000, and Nemaha 2,894,000 bushels. In the same seventy-three counties there was 84 per cent., or 747,000 bushels, more wheat held on the farms in March this year than the year before.

All our readers will be interested in the combination offer made elsewhere by which they can secure, entirely free of cost, a yearly subscription to *The Columbian*, published at Boston, and an elegant souvenir spoon of Sigsbee and the battleship Maine. We have also made arrangements by which we can give a Dewey, Sampson, Schley, Lee, Miles or Hobson spoon in place of the Sigsbee pattern. Every reader should take advantage of this offer.

The American Hereford Cattle Breeders' Association offers special premiums which may be summarized as follows, for the year 1898: At Trans-Mississippi and International exposition, \$3,000; at Illinois State fair, \$200; at Minnesota State fair, \$200; at St. Louis fair, \$100; at Indiana State fair, \$100; at Ohio State fair, \$100; at Wisconsin State fair, \$100; at Texas State fair, \$100.

Hon. A. L. Brooke, who was last year President of Shawnee County Horticultural Society, has this year been elected President of the American Association of Nurserymen. Mr. Brooke is a rising man, one of whom more will be heard in the future. This is fashionable with Kansas men of good principles and energy.

Plant Breeding.

Written for *Kansas Farmer* by George L. Clothier, Assistant Botanist, Kansas State Agricultural College.

The breeding of animals has been practiced by man for ages, but the breeding of plants is an art of more recent times. The work of plant breeding has been limited principally to florists and horticulturists. The ordinary farmer assumes that there is too much mystery for him to understand about the life processes of plants. He, therefore, contents himself with sowing and reaping, frequently ignoring the Scriptural maxim, "Whatsoever a man soweth that shall he also reap." He sows poor seed and reaps a lean harvest. He oftentimes sows weed seeds, as though he expected them to turn into golden grain. He saves his seed from good and bad individuals alike, and then murmurs when he finds his grain "running out." The great law of heredity, that like begets like, should be impressed upon the mind of every farmer in Kansas.

Plant breeding is the process of improving varieties of plants until they possess the desirable qualities originally found only in the mind of the breeder. It is a process of origination. The methods of bringing a variety up to a high standard are two, namely, selection and crossing. Every farmer can practice selection, but to be able to select with a definite end constantly in view is difficult. To do this successfully, the farmer must have the power to hold his ideals before his mind's eye for years. He must not be turned aside from his ideals by any force of circumstances. The power to select with discrimination requires the talents of the very brightest intellects.

Crossing of plants is generally looked upon by farmers as a process full of mystery. While there are as yet many unexplained mysteries in the results of crossing, the process itself is very simple, and requires nothing higher than ordinary intelligence for its comprehension. The first fact that we must learn in this connection is that plants, like animals, have sex. The union of the product of the male organs with that of the female organs of a flower we call fertilization. As a rule without fertilization there is no fruit. When the contents of the pollen of the male flower has reached the receptive part of the ovule of the female flower, a new plant called the embryo is the result. This new plant may partake of the qualities of both parents or may occasionally exhibit qualities difficult for us to explain. No man can predict just what qualities plants resulting from crosses will have. As soon as the seed has been sown and the new plants begin to grow the breeder, by selection, is enabled to discriminate in favor of his ideals or against those falling short of the standard. It is this necessity of selection that will prove the severest test of the skill of the breeder.

Plant breeding should be practiced upon every farm in our State. If farmers could have sown a rust-proof variety of wheat last fall, millions of bushels

from the eastern third of Kansas would have been added to the food supply of the world. I believe it possible for us to breed up a rust-proof variety of wheat. There is no economy in our sending off to other States or countries for seed wheat. Every newly-introduced variety must adapt itself to our soil and climate before it can do its best. We ought to keep a lookout for plants in our own fields that show desirable characteristics. When we find one that is promising we should be certain to save seed from it and test it by future plantings.

Nature assists the intelligent farmer to overcome what seems to be natural obstacles. Kansas' climate may seem to us destructive to the wheat or the oat plant; but let us not forget that the grains are all grasses, and that no country upon the face of the globe is better adapted to the growth of grasses than Kansas. Remember, also, that the native grasses are the ones that are always successful. We must have "native" grains before we can hope for results commensurate with our possibilities. By this statement I mean that our future varieties of grains must be originated here. I hope to see the time soon come when every school house will be a place for the proclamation of the gospel of science, and where the practical application of the truths of nature will be daily exemplified.

Kansas Fairs in 1898.

Following is a list of fairs to be held in Kansas in 1898, their dates, locations and Secretaries, as reported to the State Board of Agriculture and compiled by Secretary F. D. Coburn:

Allen County Agricultural Society—C. H. Wheaton, Secretary, Iola; September 6-9.
Anderson County Fair Association—C. H. Rice, Secretary, Garnett; August 30-September 2.
Brown County Fair Association—John H. Meyer, Secretary, Hiawatha; September 6-9.
Clay County Fair Association—E. E. Hoopes, Secretary, Clay Center; September 14-16.
Coffey County Fair Association—J. E. Woodford, Secretary, Burlington; September 13-16.
Kaw Valley Fair Association—W. R. Stubbs, Secretary, Lawrence.
Finney County Agricultural Society—D. A. Mims, Secretary, Garden City; September 13-16.
Franklin County Agricultural Society—Chas. H. Ridgway, Secretary, Ottawa; September 20-25.
Greely County Fair Association—J. Newman, Secretary, Tribune; October 12-14.
Jackson County Agricultural and Fair Association—S. B. McGrew, Secretary; Haddon, August 23-September 2.
Jefferson County Agricultural and Mechanical Association—Edwin Snyder, Secretary, Oskaloosa; September 6-9.
Johnson County Co-operative Fair Association—J. M. Warren, Secretary, Edgerton; September 13-16.
Marion County Agricultural Society—F. H. Prescott, Secretary, Peabody; September 6-9.
Frankfort Fair Association—C. W. Brandenburg, Secretary, Frankfort; September 27-30.
Miami County Agricultural and Mechanical Fair Association—W. J. Carpenter, Secretary, Paola; September 27-30.
Montgomery County Agricultural Society—D. W. Kingsley, Secretary, Independence; August 30-September 2.
Southeastern Kansas District Fair Association—D. W. Kingsley, Secretary, Independence; August 9-12. (Fair to be held at Parsons.)
Morris County Exposition Company—E. J. Dill, Secretary, Council Grove; September 27-30.
Neosho County Fair Association—H. Lodge, Secretary, Erie; September 6-9.
Chanute Agricultural Fair, Park and Driving Association—Aug. Barel, Secretary, Chanute; August 16-19.
Ness County Fair Association—N. H. Stidger, Secretary, Ness City; September 1-3.
Osage County Fair Association—W. B. Davis, Secretary, Burlingame; September 6-9.
Riley County Agricultural Society—Jerome Walbridge, Secretary, Riley; September 6-9.
Rooks County Fair Association—David B. Smyth, Secretary, Stockton; September 13-16.
Wichita State Fair Association—H. G. Toler, Secretary, Wichita; September 19-24.
Fredonia Agricultural Association—J. T. Cooper, Secretary, Fredonia; August 23-26.

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WEEKLY WEATHER-CROP BULLETIN.

Weekly Weather-Crop Bulletin of the Kansas Weather Service, for week ending July 11, 1898, prepared by T. B. Jennings, Section Director:

GENERAL CONDITIONS.

The week has been cooler, with fair rains and more sunshine; a good growing week. Light showers fell from Harvey eastward to the Missouri line, from Marshall to Atchison, in Trego and Ness, and Harper and Sumner, with heavier showers over the rest of the State, being heaviest from Clark to Pratt, where over three inches fell during the week.

RESULTS.

EASTERN DIVISION.

A fine week for growing crops and farm work. Corn has improved rapidly; early corn is in silk as far north as Anderson. Wheat threshing is in progress, but the results are below expectation in quality and quantity. Oats harvest is in progress; a poor crop. Flax is nearly ready to cut and gives fair promise. Haying is progressing with an abundant yield of fine quality, both tame and prairie. Alfalfa is nearly ready for the seed harvest. Peaches promise a fair crop; apples scarce.

Allen county.—Much hay put up; flax ready to cut; second crop of alfalfa in bloom; threshing begun.

Anderson.—Early corn in silk, later plantings progressing rapidly; oats and flax harvest begun, with light yields; haying general; fruits of all kinds poor.

Atchison.—Some fields of corn laid by, others not yet plowed first time; corn fields look quite spotted; early varieties of oats in shock and poor quality; farmers about a month behind with work; flax and grass look well; hay a good crop, not much cut yet owing to corn plowing; early potatoes poor.

Bourbon.—Ground packed by flood of 27th, needs rain to loosen it up; crops are doing fairly well, but the outlook is not encouraging; corn cannot make full crop; oats almost a total failure, not filling; pastures and hay never better.

Chase.—Fifty per cent. of corn weedy, 25 per cent. very bad; wheat generally stacked; dry weather very hard on small fruits and cherries; chinch bugs doing much damage.

Chautauque.—Threshing pushed during the week; early corn in silk, rain just in time for earing.

Cherokee.—Good week for all farm work;

Riley.—Temperature 3 degrees below normal, rainfall one inch above, sunshine about 20 per cent. above; corn improving rapidly, though some very weedy yet; wheat about all harvested, results quite varied, from good to worthless; oats very poor; alfalfa nearly ready for second cutting.

Shawnee.—Most of the corn in fine condition but will need rain soon, some corn very poor; oats harvest over, crop a failure; grass all that could be desired; much corn about a month late.

Wabaunsee.—Wheat and oats reported good; corn growing rapidly and looks well, much plowing in corn yet to be done; tame hay in progress; cattle doing well.

Wilson.—The ground has dried rapidly and is very hard on top, rain needed to soften the crust; early potatoes very fine, but the tops are dying; corn is very uneven, from silking down to two inches high; Goose plums in market; early harvest apples ripe, late apples have dropped badly.

Woodson.—Fine week for corn, corn tasseling, some in silk, prospect for large crop continues good, some fields very late; wheat threshing in progress, yield fair, quality fair to poor; oats poor; haying in full progress, a large crop; small acreage of flax, fair prospect.

Wyandotte.—Fine weather for work; clean corn growing rapidly; early potatoes good; wheat mostly stacked; oats very light; blackberries beginning to ripen; apples very scarce.

MIDDLE DIVISION.

Harvest is nearly completed and stacking and threshing in progress, the yield generally being much below anticipations, both in quality and quantity. Oats are turning out poorly, being damaged by rust and lodging. Corn has greatly improved, most of it has been laid by; early corn is tasseling in the northern counties and silking and earing in the southern. Pastures and grass are in fine condition, and stock doing well. Potatoes, peaches and plums are fair crops. Apples a poor crop.

Barber.—Wheat harvest progressing rapidly, but grain not up to expectations, badly shriveled; oats not filled, poor crop; corn doing well; cane and Kaffir in fine condition; no reports of chinch bugs; second crop of alfalfa being cut; a few early peaches on market; apples a complete failure.

Barton.—Harvest is nearly completed, wheat not yielding as well as expected; corn doing well and is tasseling, some fields very weedy yet.

Butler.—Harvest is nearly completed;

lost, oats and barley the same; some wheat spoiling in stack; corn doing well.

Reno.—Fine growing weather; wheat being stacked, threshing begun, some good yields reported; corn growing finely, mostly laid by, some in good condition, much very weedy; early apples ripening, very light crop; late blackberries beginning to ripen; early peaches plentiful; corn tasseling; oats about all cut, acreage small, fair crop.

Republic.—Good week for harvesting; grain mostly cut; rust injured wheat and oats some, ripening them very rapidly; corn tasseling.

Rush.—Excepting local showers, favorable weather for harvesting; oats and barley cut, good quality; much wheat harvested, early wheat better than late, but not as good as estimated earlier.

Russell.—Wheat harvest nearly finished; corn doing well, some being cultivated; potatoes fair.

Saline.—A fine week for growing crops; but rains interfered with stacking and threshing; some threshing done; soft wheat poor quality and quantity, hard wheat a better grade; corn in fine condition.

Sedgwick.—Wheat harvest nearly completed, threshing begun, berry not plump, yield fair; corn growing rapidly, beginning to tassel; good hay harvest.

Smith.—A fine growing week for corn, which is nearly all laid by; wheat harvest well advanced and threshing begun; oats being cut but are light; pastures good, stock doing well; potatoes a short crop; peaches and plums promise fairly; apples a poor crop.

Sumner.—Stacking and threshing in full progress; yield very moderate; corn and sorghum doing well; plowing for wheat begun.

Washington.—Wheat, all cut and threshing begun, yield poor to fair; oats about cut, damaged by rust and lodging; some lodged oats not cut; late cherries ripe; apples not very promising.

WESTERN DIVISION.

Corn, forage crops and grass are in good condition; corn is tasseling and silking in Ness, and the early corn beginning to ear. Wheat harvest is progressing in the southern counties, and beginning in the northern; the wheat is not a good crop. Barley, oats and rye are better, though in some counties barley and oats have been damaged by rust. The second crop of alfalfa is nearly ready to cut and promises a good crop. Grasshoppers are doing some damage in the northwestern counties.

Clark.—Good rains have put all forage crops in fine condition but delayed haying and harvesting; grass and cattle doing finely.

Finney.—First half of week dry and windy, last half cooler with heavy local showers and some hail; forage crops and range doing well; first crop of alfalfa in stack.

Ford.—Wheat is not as good as expected, the grain did not fill well; oats will not do as well as expected; barley and corn are fine; second crop of alfalfa is fine, most of it ready to cut.

Gove.—Oats and barley harvest in progress, both crops damaged some by rust and high winds; corn and grass are doing finely.

Gray.—In midst of barley, and beginning of wheat harvest; forage crops in fine condition; much hot weather.

Meade.—Wheat badly damaged by high, dry winds past week, will not yield over half a crop; corn, alfalfa and potatoes are very fine.

Ness.—Harvest in progress; wheat shriveled, but most will be cut, wheat in better condition in southern part; corn is in tassel and silk, early corn in roasting ear; gardens better; forage crops look fine.

Scott.—Late rains will benefit late wheat some, but early wheat is hardly worth cutting, the straw died while the grain was in the dough; barley and oats will be light; corn, cane and Kaffir corn doing well.

Sherman.—A good week for all crops; wheat ripening; rye being harvested and is well filled; corn growing rapidly; grasshoppers doing some damage to barley and oats.

Thomas.—Harvest has begun; grasshoppers are doing some damage; corn is doing well.

Trego.—The rains will help corn, sorghum and grass, but too late for wheat, which is badly shrunken and down, will be a poor yield.

For a Horn Fly Trap.

Editor Kansas Farmer:—The horn flies are the worst I have ever seen them; think the prolonged wet spell facilitates their breeding. I have been studying the question of trapping them, and will give you an outline of the plan and wish you to study it, and if you think it practicable, make some suggestions through the Farmer so as to get more light on it and perhaps induce some practical man to undertake the scheme of manufacturing the trap to catch them.

My idea is to corral the stock at about 5 or 6 o'clock p. m., when the flies are worrying the cattle the worst, and drive them one at a time through a chute around and over which is constructed a tent, cone-shaped at the top, made of some material that is impervious to light, with a small opening at top protected by a screen to prevent the passage by the flies. The animal would be driven into chute with flies on it, the entrance closed behind, a small opening made at the other end and the animal started through, with some elastic substance around the opening that would close on the animal as soon as head protrudes through the opening, the flies being brushed off and the opening closed automatically behind as the animal passes through. The flies being in darkness, would rise to the light at the top and be trapped. Then put through another, and so on. The flies adhere mostly in day-time to the shoulders and sides along the back in front of hip bones, and it seems to me the trapping of them in this way is perfectly feasible. At night they crawl under their flanks

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and other tender places and chew at the cattle, making sores.

If this scheme would work, I think the horn flies would be practically exterminated in a couple of weeks or less. Kill off the old ones, and no more are left to breed. My family milch cow comes up at night to be milked, covered by thousands of them. I tie her in a shady place, cut a small bunch of iron weeds, and with it whip the flies to death without harming the cow in the least. In five minutes they are nearly all in the condition the Spaniards in Cuba ought to be. The cow goes back to pasture happy, until she collects another supply from the herd.

I am confident a trap constructed as outlined would do the work, and if one were manufactured and offered for sale at a reasonable price it ought to sell like hot cakes as soon as its practicality was demonstrated.

D. P. NORTON.

Council Grove, Kas.

Traps on plans similar to this have been described by persons who have used them. The material used to sweep the flies off is broomcorn brush set so as to project from top, bottom and sides of the exit from chute. The cattle soon learn the advantage of going through the fly-trap and are thereafter eager to reach it. A trap was described a few years ago as composed of a chute sixteen feet long covered so as to make it comparatively dark. A large box was placed above the chute adjacent to the exit. This box had both top and bottom removed, and screen wire was tacked over the top. The flies could be let into a screen wire cage placed over the box or they could be destroyed in the box by sprinkling with suitable poisons. There was no necessity for closing a door behind the animal, for the flies on being dislodged immediately sought the light immediately above. This trap was described as inexpensive and very effective.

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Under the above title the Santa Fe Route has issued a sumptuously printed book devoted to the attractions of the Rocky mountain summer resorts, intended, we understand, for free distribution.

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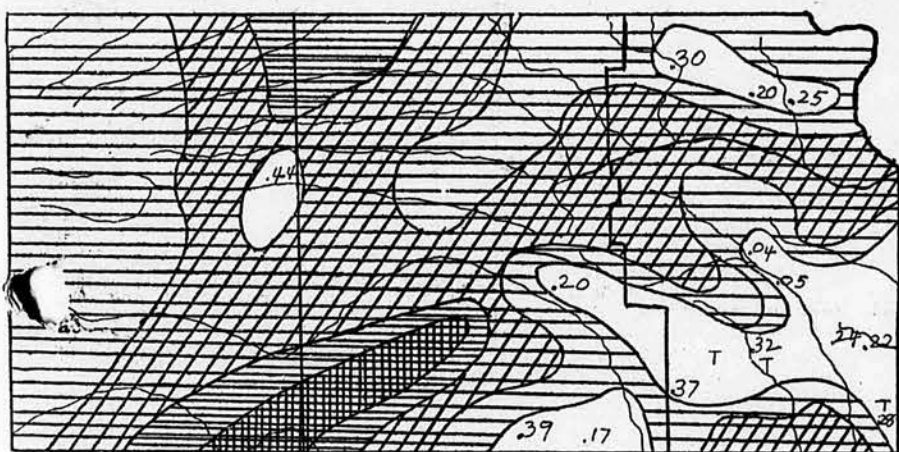
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ACTUAL RAINFALL FOR WEEK ENDING JULY 9, 1898.

wheat stacking well along; corn tasseling, but weedy; oats seem to be full average crop; apple crop light.

Coffey.—Corn growing rapidly but will need rain soon, the ground was packed so by the rain of the 26th it is hard plowing; flax looking well; oats not good; rust and rain nearly ruined the wheat; pastures and meadows very good.

Crawford.—Good week for stacking; all crops doing well.

Elk.—Corn doing well, but needs more rain; prairie grass very good; peaches and grapes a full crop; apples a light crop.

Franklin.—Corn is being cultivated and doing well; tame hay harvest progressing finely, some prairie hay cut, the hay crop is heavy and better than the average crop for some years past; some rust on oats, crop better in central than north part; early flax nearly ready to cut, late flax just beginning to bloom.

Greenwood.—Corn doing well, but will need rain soon; gardens are doing well; apples and peaches on the market.

Jackson.—All wheat fit to cut is in shock; oats being cut, some mowed, badly damaged, but little will be threshed—bugs and rust; corn, where clean, doing very well; haying in progress, heavy crop.

Jefferson.—Fine week; crops doing well; haying well along; everything in good condition.

Johnson.—Harvesting progressing in central and northern part, threshing in southern; fair week for corn, corn mostly laid by; hay good; potatoes fair.

Labette.—Wheat and oats nearly worthless in central part, threshing out of shock in southern; corn doing well but needs rain, chinch bugs hurting some pieces badly; fruit of all kinds nearly a failure.

Leavenworth.—Ground in fine condition for farm work; wheat harvested; oats ripening, rusty; early potatoes good; late corn weedy; clover weedy, timothy fair; pastures fair to good.

Lyon.—Fine weather for corn, hay and pastures; apples and peaches not in good condition; small fruit excellent.

Marshall.—Corn doing finely; wheat harvest over, stacking progressing; oats harvest in progress, a fair crop.

Montgomery.—Good week for corn; showers last few days delayed threshing wheat from shock, some good yields of fair quality reported by threshers, but generally light yields of low grade; oats a very light crop—rust.

Morris.—Fine week for crops; corn growing rapidly, early corn beginning to silk and tassel; wheat and oats all harvested; oats almost a failure.

Osage.—A fine growing week for all crops; haying commenced, a fine crop; apples about a failure; peaches not promising; corn growing finely.

threshing develops a much smaller yield than expected; oats badly damaged by rust, will yield much low grade grain; corn doing well; bugs doing some damage; blackberries, early peaches and apples ripe; apples poorest crop for years.

Cloud.—Corn in excellent condition; oats crop a complete failure; wheat badly damaged during past ten days.

Cowley.—Favorable for stacking and threshing wheat; threshing well under way; corn is making a phenomenal growth, and is earing; oats all cut and are very poorly filled; some plowing for wheat; ground dry and hard.

Dickinson.—Harvest nearly over, threshing begun, showing good yield; oats did not fill, many fields will not be cut; corn growing rapidly and looking well; ground in fine condition.

Edwards.—Harvest progressing, delayed some by local showers; oats down badly, wheat also in some fields; corn growing rapidly, early varieties beginning to tassel; wheat berry badly shrunken, crop much lighter than expected; apples still dropping.

Harper.—Wheat about all harvested, yield and quality below expectation; corn doing well, but many fields taken by weeds; pastures good.

Harvey.—Wheat cutting finished; corn doing well yet, but getting dry.

Kingman.—Very favorable week for corn, conditions greatly improved; harvest about over and threshing begun; some chinch bugs in corn, but no damage reported.

McPherson.—Harvest about over and wheat mostly stacked; threshing begun, yield differs as to locality—low ground turns out poorly, high ground good yield and quality; oats light; corn growing; potatoes fair crop.

Marion.—Local showers have interfered with harvesting, wheat and oats uncured badly damaged; corn improved, but very weedy; pastures and grass in fine condition.

Mitchell.—A fair crop of wheat has been harvested; oats badly injured; corn in good condition, very promising; alfalfa, millet, sorghum and Kaffir, all good; potatoes large and fine; apples a light crop; peaches and plums a moderate crop; grapes abundant.

Ottawa.—Corn doing well, will soon need more rain, early corn beginning to show some tassels; Friday's rain good for corn and pastures; threshing begun, quality of wheat good, yield fair.

Phillips.—Corn, potatoes and fruit doing well; wheat and oats nearly all cut; early wheat will turn out a good plump berry, late wheat not as good as the early; oats light; stock doing finely.

Pratt.—Weather wet and hot; harvesting about half through; much wheat down and

The Stock Interest.

THOROUGH-BRED STOCK SALES.

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

AUGUST 24—Henry Comstock & Sons, Poland China, Cheney, Kas.

THE COW AS QUEEN.

The Texas Farm and Ranch, on presenting a full-page picture representing the other animals of the farm in the act of placing a royal crown upon the brow of the cow, who sits upon a throne, indulges in the following:

"In the entire country there are 17,316,128 milch cows, valued at \$363,616,384, and 31,894,321 other cattle, valued at \$508,928,783. In Texas there are 783,986 milch cows, valued at \$15,100,000, and 5,518,644 other cattle, valued at \$71,520,114. In cows Texas has one-twenty-second in number, and one-twenty-fifth in value of those of the entire country; and in other cattle she has one-sixth the number and one-seventh the value of those of the whole country. Texas has a milch cow for every 2.6 of the people, old and young, black and white, and of other cattle nearly two animals to each person in the State. Of the milk of the cow 3,000,000 Texas people partake daily and are comforted. Of the beef, every inhabitant either does, or could, consume one and one-quarter pounds per day, and our soldiers could eat it freely, and thus nourished could, if thoroughly aroused, whip their weight in wildcats or ten times their weight in Spaniards. The estimates above given of cattle in the United States and Texas are from government statistics, compiled from the tax lists, and are far short of the actual numbers, because in enumerating cattle for the information of the assessor there are always a good many that will not hold still long enough to be counted. This, of course, is the fault of the cattle and not of the cattle-owner. Since the above statistics were compiled the value of cattle of all sorts has increased at least 20 per cent., which accounts for the added gaiety of cattle-raisers of late, and the unusual interest and applause that attend the yarns they spin when they meet at Fort Worth or San Antonio, and, incidentally, for the very perceptible broadening of the smiles with which they are greeted by the self-sacrificing refreshment dealers at all the cattle centers. Therefore, the government cattle statistics are hardly to be considered up to date, either in numbers or values. There are more cattle and they are of greater value than the government thinks.

"Time was in Texas when a cow and calf, if not a legal, was a customary and satisfactory tender, in payment of all sorts of obligations except taxes. Land, negroes, houses, notes, store accounts, bets, etc., were bought and sold and settled in full with cows and calves, at the rate of \$10 per cow and calf, and such transactions were never questioned. At the great race meetings pens were provided for 'holding the stakes,' and herds of cows and calves were driven in the day of the event. All estimates were made and accounts kept in terms of dollars and cents, but the medium of settlement was invariably the cow and calf, or multiples thereof. These cattle were the typical long-horn, which formed the base of most of our improved herds of the present day. They were bred chiefly for horns and hides, and incidentally for beef. All the male and some of the female people were hunters, and every hunter had one or more toot-horns. The dinner-horn always hung on the wall by a rawhide tug. Every hunter also had two or more powder-horns, one at least for rifle and the other for coarser shotgun powder. The demand for horns was always active. The numerous uses of rawhide caused an equally active demand for hides. Saddles were rigged with it. Noses but rawhide ropes were used, and as every horse in use had to be staked out, a great many ropes were required. These were the lariats, a name that has been used by modern greenhorns to designate a rope of any kind. The true lariat cannot be made of hemp, grass or cotton. If not made of rawhide, cut in strips, plaited, greased and stretched, it is not a lariat. If a cow gave milk enough to support a calf until it could eat grass, that was all that was required or expected. The cow was also depended upon to furnish beef for the hungry, but for milk and butter only for a limited period and in small quantities. Beef, bread and sweet potatoes, with buttermilk in its season, composed the diet, which, aided by venison and bear meat, nourished the bodies, invigorated the minds, and nerved the arms of the heroes of the Texas revolution in both battlefield and forum. But times have changed and so have the cows and

so have the people. Now we must have milk and butter 1,095 times a year, and our children must revel in bread and butter between meals and before retiring for the night. As the old-time cow didn't have milk to spare for these purposes, she had to give way to the Jersey, the Alderney and the Holstein; and as mesquite grass has largely failed us, we besought a breed of cows that could furnish us passable beef without the mesquite; therefore, the lank and slab-sided cattle of the olden time had to be worked over into Herefords, Short-horns, Polled Angus and Galloways. In short, now we have the fruitful and the milky, instead of the long-horn. And through the new cow the country prospers and grows richer day by day. And in deference to her character we no longer expostulate with her by means of a club, but caress her and rub her the right way of the hair. She is not only valuable property, but a friend in every time of need. We now have the best cows in the world, and consequently the best milk, best butter, best cheese (when not filled) and best beef in the world. Man is simply the sublimated, refined and exalted essence of the food he eats. His physical strength, stamina and courage; his patriotism, honor and mental vigor; the beauty and virtue of our women, and the sweetness of our babies—the seraphs and cherubs of our earthly tabernacles—are only possible where the food is of the highest character. No nation ever enjoyed a full measure of human liberty unless their generations partook largely of milk, butter and beef. Compare the drowsy men of Belgic spawn and their conestoga fraus, nourished on brown bread, hog's grease and lager beer, with the alert Anglo-Saxon and his radiant wife, whose perfect physiques are built and whose poetic temperament exalted by the perfect diet provided by Providence and extended to us through the instrumentality of the cow.

"In consideration of her distinguished services to humanity, and extending from the cradle to the very precincts of the grave, we submit that this kindly benefactor be crowned queen of the animal kingdom, and best friend of fallen humanity."

"Muscle to Win Must Be Lubricated With Brains."

So says Coburn of Kansas. He is the Secretary of the State Board of Agriculture of that State, and for energy has scarce an equal, certainly no superior, in the country. The State needed the man, and he came, saw and conquered in the above named gentleman. Rumor has it that Coburn aspires to greater honors. Sufficient for us is his record in agriculture. He has the method of collaborating an endless amount of useful information; of using the scissors freely but fairly, and then catching hold of the proper man to give or read papers on subjects of absorbing interest to his vast clientele in the "bleeding" State. Before us lie "The Beef Steer (and His Sister)" and "The Plow, the Cow and Steer." Owing to a rush of business it has been impossible for the writer to digest those valuable books until now. A thorough study of them reveals a mass of information sifted out and put before the farmers of every degree interested in live stock in an entertaining way.

Kansas is a stockman's paradise. Stretching away in great land waves from the Missouri to the Colorado line, it is rich in soil, well watered and fairly sheltered, but subject to quick climatic changes not only in winter but in summer. So far as the last is concerned the whole country is more or less affected in this way and Kansas averages up well among other Western States. It is prolific in grass and hay, fairly certain in small grain, and it seldom misses raising a corn crop of some kind. Yearly it turns off an enormous quantity of beef, and while Coburn touches on other subjects, such as the sheep industry, still in the above book his energies are turned to beef and butter. To any one heavily interested in cattle feeding the "Beef Steer" is a most interesting and instructive work. It contains the results of the scientist's labors, the views of the practical farmer, and from the pictures on its pages there rise up memories of great days in the show ring, when Nichols and McMullen, Roan Boy and Black Prince, Clarence Kirklevington and Rudolph Jr. delighted the audiences that looked on, and make us sigh for such days to come again.

Matters are adjusting themselves. There has been liquidation on the farm and the railroad, the latter suffering most, and with the changed conditions Eastern Kansas with her wealth of corn is going to finish the cattle raised or grazed in her western confines. Further she will go, and become the gateway for finishing not only the surplus

of her own State, but she will hold out her hand in conjunction with Missouri to the great pastoral regions of northern Texas, New Mexico, Arizona and Colorado. She has a mission before her, and if the people in her confines will work more on Coburn's lines and spend less time at the corner grocery or cross-roads they will be happier and the country richer.

In the wealth of valuable articles, supplied by such men as R. M. Allen, Prof. Curtiss and others, there are two very outstanding productions in "The Plow, the Cow and the Steer." One is by Prof. Thomas E. Will upon experiment stations, their work and worth to farmers. We often laugh at experiment stations and sneer at what they tell us, but you have to grope after the truth and often stumble on it, and the vast work and expenditure of brain power in our agricultural colleges and experiment stations are bearing fruit. We can well afford to follow in the same path as Liebig and Lawes. They have blazed a path which we can make into a road; make it slowly and surely. Prof. Henry, of Madison, Wis., has built part of the way and we are glad to see Kansas doing its part. Totally different from Prof. Will's production is an article by Mr. W. W. Guthrie, of Atchison, Kas. This is a mixture of practical agriculture, philosophy and politics, shrewdly thrown together and very valuable in its way. Guthrie remarks wisely and well that "cows bought at \$30 on credit (often) should sell slow at \$10 for cash." Today we might study that proposition carefully. We had a boom in 1882-'84. What about the boom in 1897-'98? Where is the end of \$7 per 100 pounds stockers and \$5 per 100 pounds beef? Where is the end to the expansion of credit to cattlemen during the last eighteen months? Those are questions that will need to solve themselves before we are many moons older. It may not come this year, but history repeats itself, and the gloomy days of 1886-'87 will come, only under another guise.—J. C., Jr., in Live Stock Report.

Sheep Department.

Conducted by J. CLARENCE NORTON, Moran, Kas., to whom all letters should be addressed.

FEEDING LAMBS.

I again present a valuable paper from Thomas Shaw, giving the results of three years' feeding of lambs. It is highly important that this paper be kept on file, as Kansas has not only all the advantages of the country where these experiments occurred, but is really a superior country for winter feeding. It is to be hoped that these letters will prove of great value to feeders in Kansas. In the meantime several other letters are delayed, but will appear shortly.

AVERAGE RESULTS FROM FEEDING LAMBS FOR THREE YEARS.

The following summary gives some of the more important average results obtained from feeding lambs for three successive winters at our University experiment farm.

Average time covered by the preparatory feeding, seven days.

Average time covered by the experiment proper, ninety-one days.

Average duration of the feeding period, ninety-eight days.

VALUES.

Average value per 100 pounds on the basis of cost when the feeding began, \$3.45.

Average value per 100 pounds, shrunk weight, when the lambs were sold, \$4.88.

Difference per 100 pounds between cost price and selling price, \$1.43.

INCREASE IN VALUE.

Average value of each lamb when the feeding period began, \$2.65.

Average value of each lamb at the close of the feeding period, \$5.03.

Average value of each lamb at the close of the feeding period, with shrink, \$4.87.

Average increase in value of each lamb during the feeding period, \$2.38.

WEIGHTS.

Average weight of one lamb when the experiment began, 72.2 pounds.

Average weight of one lamb when the experiment proper closed; that is to say, from feeding for ninety-one days, 105.8 pounds.

INCREASE IN WEIGHT.

Average increase in weight of one lamb from feeding for ninety-one days, 33.6 pounds.

Average increase in weight per month of thirty days, 9.4 pounds.

Highest average increase in weight per month from all the lambs in one experiment, 12.0 pounds.

Lowest average increase per month from all the lambs in a single experiment, 7.1 pounds.

FOOD CONSUMED.

Average of grain consumed per day by one lamb, 2.07 pounds.

Average of hay consumed per day by one lamb, .85 pound.

Average of food consumed per day by one lamb, 2.92 pounds.

COST OF INCREASE.

Average cost of making 100 pounds of increase in weight during the experiment proper, \$3.59.

The lowest cost of making 100 pounds of increase by the lambs of any one lot, \$2.92.

Average increase in value per 100 pounds of the added weight, over the cost of producing it, by feeding for ninety-one days, \$1.29.

PROFIT.

Average profit on one lamb during the experiment proper (ninety-one days), shrink weight not included, \$1.08.

Average profit on one lamb during the experiment proper (ninety-one days), shrink weight considered, 96 cents.

Average net profit per lamb during the entire period of feeding, 86 cents.

CONCLUSIONS.

The following are some of the more important conclusions that may be drawn from the three years' experiments:

1. That both range lambs and home-grown lambs are well adapted for feeding.

2. That the value of the increase made from feeding lambs in our State is more than the cost of the food used in making it.

3. That the coarse cereals which Minnesota produces are well adapted to the fattening of lambs when suitably blended.

4. That when lambs are being fattened, considerably superior gains will be obtained when the grain food contains at least 10 per cent. of oil cake.

5. That oil cake, barley and oats suitably blended, with or without bran, make an excellent food for fattening lambs.

6. That while good gains may be secured by feeding oats and oil cake suitably blended, the dearthness of the mixture makes it too costly to furnish the highest profit.

7. That excellent gains can be secured when fattening lambs in our climate in the absence of field roots or ensilage.

8. That under the conditions which have prevailed during the past few years, an average of about \$1 per head could be secured from feeding lambs judiciously for about 100 days.

OBSERVATIONS.

1. From the behavior of the lambs that were kept longer than 100 days, the conclusion is fair that the feeding period should not ordinarily be extended beyond 120 days. After ninety or 100 days feeding the gains are not so good, and there is more trouble in keeping the system in tone. Better average results will probably be obtained from feeding lambs for less than 100 days than for a longer period.

2. From these experiments the conclusion is legitimate that in order to insure a good profit from feeding lambs the aim should be to secure a difference of at least 1 cent per pound between the buying and selling price, and if the difference reaches 1½ cents per pound an excellent profit will be insured. The lighter the lambs when bought the larger the margin of difference should be between the buying and selling price. And, of course, the more costly the price of the foods used, the greater the necessity that exists for having a good margin between the buying and selling price per pound.

3. Under average conditions the advance in value from feeding a lamb for 100 days should be about equal to the price paid for it when ready for feeding. In these experiments the increase was a little less than that, but the lambs fed in 1895-'96 were bought at a price unusually high and sold at a price unusually low.

4. In rearing or in choosing lambs for feeding, the aim should be to secure them of such weights that they will not exceed 100 pounds when finished. The markets show a decided preference for a well-finished lamb rather than under 100 pounds. Because of this the lambs grown on the range are of very suitable weights for being fattened.

5. That gains so good were secured in these experiments can be obtained in the absence of field roots is greatly encouraging to the industry. It may be that still better gains can be secured by feeding roots also, but in our cold winter climate it is comforting to know that feeding can be prosecuted successfully in their absence.

6. The gains made in proportion to the food consumed speak well of the suitability of Minnesota conditions in fattening lambs. When an average of 9.4 pounds per month of increase can

be made from feeding 2.92 pounds of food per day, the feeder thus employed is assuredly engaged in a profitable business. The brightness, the purity and the steady character of our winter climate is doubtless measurably responsible for such excellent results.

7. No feature of the results obtained arrested the attention of the writer so forcibly as the possibility of making a profit on the increase in weight made during the feeding period. It is so different from the previous experience when feeding in Ontario. Where foods are relatively dear such profits cannot be realized from ordinary feeding. It cannot be so realized in Britain, nor in Ontario, nor yet in New England or the Eastern States. In these experiments each 100 pounds of increase made was worth \$1.29 more than it cost. It was made possible by the cheapness of the food fed. I would that farmers fully realized the advantage which cheap food gives them in feeding over the Eastern farmer.

8. The average profit was nearly but not quite \$1 per lamb in these experiments. The profit is much lowered by the experiment of 1895-96. In that experiment the selling price was but 18 cents per hundred over the cost price of the lambs. Such a result will follow but seldom. It is fair, therefore, to claim that as things have been in recent years, \$1 per head of profit might be looked for. It should be remembered, however, that the profit made is not the most valuable feature of an experiment. The profit is greatly affected by the nature of the buying and selling. The fact may not be generally known, that it is more difficult for a State to buy cheaply than for an individual to do so. In these experiments the most valuable lessons taught are such as relate to the suitability of foods for feeding, the cost of production, the relative gains made, and the profit, if any, on such gains.

9. In view of all the facts brought out by these experiments, and of the further fact that lambs abound on the Western ranges, the conclusion is certainly legitimate that a magnificent opportunity has come to our farmers to engage in the fattening of winter lambs.

THOS. SHAW.

University of Minnesota.

How Many Sheep to the Acre?

Editor Kansas Farmer:—Not getting satisfactory answer to my inquiry how many sheep can be pastured per acre on fenced prairie grass, I wrote Secretary Coburn, knowing that he would either give me an answer or obtain one for me covering the ground. Secretary Coburn referred my letter to Hon. E. D. King, of Burlington, Coffey county, and I inclose his answer, which I think the Kansas Farmer would do well to publish, as I think it gives important information on an important question to Kansas Farmers.

A. E. HARMON.

Bloomington, Ill.

Burlington, Kas., June 13, 1898.

Friend Coburn:—You can say to your correspondent in Illinois that I have kept 500 sheep on a quarter section of good prairie grass, such as I presume they have in Sedgewick county, and I have kept for several years 1,200 head on a half section of prairie grass, but for the last six years I have kept the latter for hay, and it is the remark of every one that they never saw so heavy prairie hay and so absolutely free from weeds. I pasture now mostly on clover and timothy mixed and keep six to eight head per acre. I have a pasture of white clover and Kentucky blue grass that has been down thirteen years that carries yearly ten to twelve sheep per acre, and is now carrying ten rams per acre and is way ahead of them.

All these tame grasses do splendidly on any land in eastern third of Kansas that will grow good corn. I have seeded 300 acres this spring to clover and timothy and have a splendid stand. One large field seeded two years ago with oats will cut now over two tons per acre.

E. D. KING.

The Old Men and Women Do Bless Him.

Thousands of people come or send every year to Dr. Bye for his Balmy Oil to cure them of cancer, and other malignant diseases. Out of this number a great many very old people, whose ages range from 70 to 100 years, on account of distance and infirmities of age, they send for home treatment. A free book is sent, telling what they say of the treatment. Address Dr. D. M. Bye, Box 25, Indianapolis, Ind. [If not afflicted, cut this out and send it to some suffering one.]

The electric fans now operated in Santa Fe Route dining cars are desirable and seasonable accessories to an already unsurpassed service.

The Apiary.

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

HONEY RESOURCES OF THE FUTURE.

The following paper was prepared by S. E. Miller, of Bluffton, Mo., and read for him before the twenty-fifth annual meeting of the North American Beekeepers' Association:

"As civilization advances, the forest falls before the woodman's ax, and much of the unused land that produces flowers is turned under by the farmer's plow, while barbed wire is making the old-fashioned rail fence of our fathers a relic of the past; hence the fence corners where grew white clover and other honey-producing plants are no longer there.

"As land becomes more valuable it is more thoroughly tilled and less of it is allowed to lie idle, and in a number of other ways land that once supported a multitude of nectar-yielding plants and trees is turned to the production of corn, wheat and other crops that yield little, if any, nectar. Every basswood tree that is felled within a certain radius of our apiaries must mean that our bees have access to a certain number of pounds less of nectar than they had while the tree was standing. Every white clover field that is turned under within the same radius means that our bees are curtailed to a certain extent.

"Considering this, what will be our resources in the future? What is to take the place of the flora that has been so bountifully disseminated by a loving Creator, when that flora has fallen before the hand of civilization? True, we might pack up our bees, and move to a new and unoccupied field, but even this cannot last always. The sage bush of the wild West is being rooted up to give place to orchards and vineyards. Even if it were always practical to secure good pasture by frequently moving, this course is not suited to the taste of a bee-keeper, for if I mistake not he is one who loves to have a home and loves that home more than any other spot on earth. What, then, can we grow to take the place of these native plants, so that we may be reasonably sure of having something from which our bees can gather nectar in sufficient quantities to give us a crop of honey that will pay for our time, labor and money expended, and leave us at least a small profit?

"I for one believe that we cannot urge too forcibly the prudence of taking care of that which we have. Often land that is too uneven to admit of cultivation may be devoted to pastures, and here is where we may spare such trees as basswood, maple and others that produce nectar and pollen. No doubt many beekeepers are owners of tracts of woodland, and when clearing up the land for pasture, if all nice basswood trees are left standing they will be no hindrance to the grass that grows beneath them but often a benefit, by keeping the ground cool and moist beneath them, while the ground where no trees are standing will be hot and dry and the grass parched.

"The maples, while they do not produce any of the surplus honey, contribute in an indirect way toward it, as they produce an abundance of pollen and (according to my observations) some nectar just at a time when most needed. These two, then, should be spared whenever practical, for if we speak of the sugar maple alone it is a producer of another sweet that in the opinion or on the palate of many surpasses even honey, and in this way may be an additional source of revenue to the owner of the land; besides, both the maple and basswood are elegant and noble shade trees. What I have said about these two applies to my own part of the country. To what trees the above suggestions will apply in other parts of the country each one must know for himself. Before leaving this point I might add that those beekeepers living in or near a town would do well to exert themselves in inducing the town people to plant basswood trees in preference to other kinds, and I believe one could well afford to furnish the trees at his own expense if he intends to continue in the bee business for a number of years. To what extent the planting of basswood trees is practical on the treeless wastes of the far West I am not prepared to say, as I do not know whether they will live and thrive there; but to those who live there it may be well worth considering.

"In every way possible we should use our influence to prevent the destruction of basswood trees. Often a neighbor might, by a little solicitation, be prevented from destroying such trees, even on his own land.

"I cannot leave the subject without

speaking of the clovers, for upon this class of plants a vast number—perhaps a great majority—of the bee-keepers of the United States must depend for their surplus, and as time passes we must each year become more dependent upon these. Clover is a crop that should be grown upon every farm in the land that is adapted to it. I venture the assertion that 90 per cent. of the farms that are adapted to it would be highly benefited by a thorough rotation of clover, corn, wheat and the other farm crops. What kind of clover, then, shall we grow? Of the alfalfa it is not necessary for one to speak, for it has already proved itself to stand in the front rank among the honey-making plants of our country. In that part of the country to which it is adapted, no doubt, it stands at the head among cultivated crops, and the bee-keeper can hardly hope to find a crop that is profitable aside from the nectar it yields which will furnish a greater amount of valuable pasture for his bees.

"But in the majority of States to which alfalfa seems to be ill adapted, we must look for another plant in which we can induce the farmers to become interested. This we have in alsike clover. This clover seems well suited to all lands where the common red clover thrives, and is at present about as profitable a crop, and, in some cases, even more profitable. My own experience is that it does not make as much hay per acre as the red does, but it is of enough finer quality to make up for the difference in bulk. Here it seems to stand drought and pasturing better than red clover, holds it own against weeds and will stand and produce good crops for a year or two longer than red clover. It produces about as much seed per acre and the seed is always higher per bushel than that of red clover. In this, then, we have a profitable farm crop that is well suited to a large portion of the country. As to the amount of nectar it will yield no one can more than conjecture, but from what observations I have taken I would place it ahead of the native white clover, taken acre for acre.

"I have only mentioned the name of red clover, so far, and need scarcely say more. That it often furnishes an abundance of nectar we are all aware, but that the bees can seldom procure it we are also aware, notwithstanding the claims that some make that their bees can get the nectar from red clover. Bees do certainly work on it at times, but I think seldom enough is gotten to amount to a surplus. Honey from alfalfa clover can now be purchased by the ton. How soon the same may be said of alsike clover honey no one knows. But it is quite evident that the honey of the future will be gathered mainly from some one of the many species of clover—the king of honey-producing plants."

There is more catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease, and, therefore, requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, Ohio, is the only constitutional cure on the market. It is taken internally in doses from ten drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address, F. J. CHENEY & CO., Toledo, O. Sold by Druggists, 75c.

The latest revenue raising scheme is to tax all farms or lots on which the owners permit poisonous vines to grow.

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We Have Bicycles for 1898 at \$19.95, \$19.75 and \$22.50. Such values as were never offered before.

THIS SPECIAL WHERE AT \$19.75 is a wonder of value, strictly high-grade and equal to any bicycle you can buy anywhere at \$40.00 to \$50.00. Strictly up-to-date. Covered by binding guarantee. Has all the good points and late improvements of all high-grade bicycles with the defects of none. Our SPECIAL Bicycle at \$19.75 is made by one of the largest, oldest, best known and most reliable bicycle makers in America. The identical same bicycle as is sold everywhere under their special name and name plate at \$40.00 to \$50.00, never less. The name of the maker is a household word among bicycle riders. You will recognize the bicycle the moment you see it as the same high-grade bicycle sold everywhere at \$40.00 and upwards. In offering 2,000 at the unheard of price of \$19.75, we are pledged not to use the maker's name or nameplate.

DESCRIPTION. OUR SPECIAL 1898 Bicycle now offered at \$19.75 is made from the very best material throughout, only first-class mechanics are employed and the finish is such as can be found only in the highest grade wheels. FRAME is 24 inches deep, true diamond, (Ladies' is 22 inches, curve shape with two center braces) 1 1/2-inch highest grade imported German seamless tubing. FORK CROWN, drop forged, highly polished and finished and nickel-plated. HANDLE-BARS, very latest and best wood or nickel, up or down curve or ram's horn. WHEELS, highest grade, 28-inch. SPOKES, highest grade, 14-16 swaged. HUBS, latest large tubular, turned from bar steel. RIMS, highest grade non-warpable wood. TIRES, our own special guaranteed strictly high-grade single tube pneumatic, complete with pump and repair kit. CRANKS, highest grade forging, 6 1/2-inch throw, highly nickel-plated. PEDALS, hand-some and best rat trap. BEARINGS, highest grade tool steel, highly finished. SPROCKETS, finest forgings, heavily nickel-plated, detachable. SADDLE, strictly high-grade, padded. Weight, 25 lbs. Full ball bearing with ball retainers throughout. Finished in the highest possible enamel in blue, black or maroon, and shipped complete with tool bag, pump, wrench, oiler and repair kit.

OUR GUARANTEE. We issue a written binding, one year guarantee, during which time if material, WE WILL REPLACE IT FREE OF CHARGE. With care the bicycle will last 10 years.

SEND US ONE DOLLAR State whether Ladies' or Gents', kind of handle bars and color of finish and we will send you the bicycle by express C. O. D. subject to examination, you can examine it at the express office and if you find it equal to any bicycle you can buy elsewhere for \$40.00 to \$50.00, and such a bargain as you never saw before, pay the express agent the balance, \$18.75, and express charges. OUR FREE BICYCLE CATALOGUE shows a complete line of bicycles at \$12.95, \$19.75, \$22.50, etc. Also a full line of bicycle sundries, bicycle clothing, etc. SEND FOR IT.

AS TO OUR RELIABILITY. We refer to the publishers of this paper, our customers everywhere, Metropolitan Nat'l Bank, Nat'l Bank of Republic, Bank of Commerce, Chicago; German Exchange Bank, New York; any business house or resident of Chicago. We occupy entire one of the largest business blocks in Chicago, employ 700 people, and we guarantee to save you \$20.00 to \$30.00 on a high-grade bicycle. Order-to-day. Don't delay. Only 2,000 to be sold at \$19.75.

SEARS, ROEBUCK & CO., (Inc.) Fulton, Des Moines and Wayne Sts., CHICAGO. (SEARS, ROEBUCK & Co. are thoroughly reliable and for \$19.75 this is surely a wonder bicycle.—EDITOR.)



X RAYS SULKY PLOW.





HIGH LIFT.

Patented Stop

which carries the plowbottom when in the ground, thus saving bottom friction and making

Light Draft.

Powerful Lifting Spring

Small boy can handle it

Goes through Anything.

Plows gumbo or hard land when other plows will not work.



THREE YEARS of unparalleled success. Send postal for one of our X RAYS BUTTONS to wear in the lapel of your coat. Address, DAVID BRADLEY MFG. CO. 139 E. Broadway, BRADLEY, ILL.

The Veterinarian.

We cordially invite our readers to consult us when they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the Kansas Farmer. Give age, color and sex of animal, stating symptoms accurately, of how long standing, and what treatment, if any, has been resorted to. All replies through this column are free. In order to receive a prompt reply, all letters for this department should give the inquirer's postoffice, should be signed with his full name, and should be addressed direct to our Veterinary Editor, Dr. Paul Fischer, Professor of Veterinary Science, Kansas State Agricultural College, Manhattan, Kas.

CATARRH.—We have two calves, aged about two months. They have a bad cough. It seems to be from their lungs. They are running with their dams. They lay around most of the time. Part of the time have their mouths open and heads down when walking. Any exercise sets them to coughing. Water runs out of their eyes and slubber out of their mouths. They cough up considerable phlegm.

Galt, Kas. J. L. S.

Answer.—Give each calf one of the following powders, dissolved or shaken up in a half pint of sweet milk, as a drench. Repeat the drench three times daily: Take antipyrin, 4 ounces; powdered althaea root, 6 ounces; mix and divide into forty equal powders.

GARGET.—I have a half Jersey cow, 3 years old, which has had two calves, and I milked her the first time within three weeks of calving. Her calf was born about the middle of last January, and about two months ago her bag got hard in the right hind quarter. Next day the milk was lumpy and stringy and ever since it has been changing from the right hind teat to the left front one. She will be all right for a few days, then all of a sudden she becomes so again. She is in good flesh—not fat—has good appetite. Teats do not seem to be sore. Milk is lumpy, bloody and watery from the affected parts. Milk from other teats is all right. I do not think she is in calf just now. Junction City, Kas. L. E. M.

Answer.—Treat your cow according to directions given under "Bloody Milk," in the Veterinary column of the Farmer of June 16. These are both cases of garget or mammitis.

CONJUNCTIVITIS.—I have two three-year-old cows. One has gone blind in both eyes and one has lost sight of one eye and the other is weak. They commenced by water running from their eyes and keeping them closed. Then a scum of white matter came over their eyes. I have used burnt alum. I have used also sugar of lead 1 drachm, 2 drachms tincture of opium, mixed with one pint of soft water, and washed the eyes twice a day, but I can't see that it does much good. There are a good many affected in this way in my part of the country. I shall be very much obliged to you for advice through Kansas Farmer. W. D. Okolona, Miss. (late of Kansas).

Answer.—Your cows have inflammation of the conjunctiva, or conjunctivitis. Procure from your druggist a one-tenth per cent, aqueous solution of bichloride of mercury and apply a few drops of the solution between the eye and eye-lid, using a dropper for the purpose. Repeat the application three times daily. If this does not improve them, write again.

I have a gray horse, 6 years old. I think he has kidney trouble. He never draws the penis but lets the water run out of the sheath, and it appears hard for him to make water. I keep sheath clean but it does no good. I have never given him any medicine. He has been in that shape for several months. He eats well but is growing poor. C. S. Wilmot, Kas.

Answer.—Various conditions of the penis or sheath may give rise to the condition you describe, but without a personal examination I could hardly advise any definite treatment. Are you quite sure that the sheath has been carefully cleaned with lukewarm water? If not, then see to it that this is done. Don't use any soap, but use pure water, and remove every particle of collected smegma. Sometimes this condition is due to a contracted condition of the opening of the sheath, and then a surgical operation would be necessary. I would advise you to call in a good veterinarian if you have one in your neighborhood. The kidneys have nothing to do with this disorder.

DISCHARGING TUMOR ON JAW.—I have a cow, 3 years old, that has a large lump on her upper jaw, located about half way between the eye and the opening of the nostril. It was first noticed about the first of January, and was then about the size of a hen's egg. But it has gradually increased in size until it is now about as large as a man's fist. About the 1st of March it broke on the

Horse Owners! Use GOMBAULT'S Caustic Balsam

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

outside and there was a slight discharge of blood and matter for a few days, but the opening soon closed. About three weeks ago it apparently broke on the inside, as there has been a slight discharge of matter from her nose since, but the lump remains about the same size. It is quite hard and sore to the touch. The cow seems to feel well and is gaining in flesh. E. E. O. Colby, Kas.

Answer.—Give your animal a daily drench made by dissolving one and one-half drachms of potassium iodide in a pint of water. Keep this treatment up for eight or ten days, and then report result to me. Note particularly whether or not the swelling referred to changes in size, and note the increase or decrease of the nasal discharge. When writing please refer to this number of the Farmer.

WORMS.—Your prescription for pin worms for my horses, in Kansas Farmer of June 2, does not seem to do any good. I treated the horse as directed, with the exception that I did not have a syringe. I got the bottom out of a quart bottle, plugged it up while it was filled, and inserted, then, raising the bottom, it emptied very readily, I thought. The mare has not been treated yet; the symptoms are about the same. I bought one-half gallon of what the merchant said was raw linseed oil. I must have spilled some, as I did not get much for the last dose, and I took some from another jug that I had. Possibly that was not raw oil. It was a little lighter in color. The horse must have had an attack night before last (July 9), as his flanks were sweaty and the sweat seems to have streamed down his legs. He laid down after I got him from the pasture and laid down on his side, but did not show great signs of pain. J. A. V. Jerome, Kas.

Answer.—Dissolve three drachms of tartar emetic in a pint of water and then add this to the drinking water of your horse. Observe whether any worms are passed after this. If not, write again. What you describe as having occurred on July 9 was an attack of colic, which was probably due to the presence of pin-worms. It is very probable that your horse is permanently infected with this brood and some day one of the attacks will end fatally. A lengthy article on this subject was published in this column some months ago.

Rival the Upas.

Serge Balaguine, a Russian explorer of Brazil, states that a few degrees below the equator he discovered a forest of flowers that prevented him from approaching them. With every deference to M. Balaguine, that forest seems to have been discovered before. Two years ago there appeared in a San Francisco paper an account provided by a bulb hunter returning from the same region who declared that after noticing in the forest an odor, vague and sweet at first, but which increased as he advanced, ultimately he reached a clearing and there, straight ahead, was a wilderness of orchids. Trees were loaded with them, underbrush was covered with them, they trailed on the ground, mounted in beckoning contortions, dangled from branches, fell in sheets and elongated and expanded as far as the eye could reach. A breeze passed and they swayed with it, moving with a life of their own, dancing in the glare of the equatorial sun, and as they danced exhaling an odor that protected them more shepherly than a wall. In vain did that hunter endeavor to approach. There was a wall of perfumed chloroform through which he could see, but through which, try as he might, he could not pass. It held him back more effectually than bayonets, and it was torture for him to see those flowers and to feel that before he could reach them he must die, suffocated by the very splendors of which he was in search, poisoned by floral jewels such as no one perhaps had seen before. At the time the place was known as the village of demon flowers.—Collier's Weekly.

IN ACTION.

When the blue-black waves are tipped with white, and the balmy trade winds blow
When the palm-crowned coast in the offing lies, with sands like the driven snow,
When the mighty hulls of the battleships—the nation's strength and pride—
And the ghost-like little torpedo boats are lying side by side;

When all is still save the screaming gulls, as they circle high o'erhead,
When naught is heard on the steel-bound decks save the watcher's measured tread,
When far to windward a tiny cloud floats up from the grim old fort,
Then the piercing scream of a shrapnel shot, and the ten-ton gun's report.

Then armored decks are alive with life, and the calls to quarters blow;
Then the gun crews stand beside their guns and the stokers sweat below;
Then the jingling bells in the engine room clamor and call for speed,
And the thousand tons of hardened steel shake like a wind-tossed reed.

Now the guns of the fort are belching flame, and the shot and shell fall fast,
Now three are down by the forward gun, and six in the fighting mast;
Now the ships rush on in majesty while the gunners hold their breath
And pray to their God to spare them still from the harbor's hidden death.

Now a string of fluttering signal flags from the bridge of the flagship fly,
Now the Gatlings, rapids and twelve-inch guns with a crashing peal reply;
Now the smoke hangs low o'er the shot-torn wave, dark death lurks in the air,
And never a word by the guns is said, while they spit and boom and flare.

The fleet steams up in battle array, and the broadsides crash and roar,
While the rumble and rip from the enemy's guns reply from the smoke-hung shore;
The once white decks run red with blood, while the surgeons work below,
And fort and fleet, with shot and shell, pay back each blow for blow.

At last a flag of truce is raised, and gleams through the drifting smoke,
And the havoc and wreck of a gun is seen where a ten-inch shrapnel broke;
At last the guns of the fleet are still, and now from far and near
Are heard the shouts of a victor's crew as they answer cheer with cheer.

The shrill call of the bo's'n's mate the crew from quarters pipes,
And the dead are stretched on the quarter deck, wrapped in the Stars and Stripes;
While the setting sun sinks in the west, a blazing ball of fire,
Lighting the scene of a battle fought, and the carnage of man's desire.

—Springfield Republican.

War Must Soon End.

One of the very latest developments in scientific research is the fact that by means of a "radiator" the so-called X-rays can be made to penetrate the armored magazines of war vessels and to ignite their contents. Such being the case, not a vessel carrying ammunition but can be blown up the moment it comes within range of this wonderful penetrating yet intangible force. Ordnance of all kinds, including small arms, can thus be discharged whenever this subtle influence is flashed upon them. It is not safe for one to carry a revolver or a cartridge about his person—not even a match or anything else that a spark can ignite. Inflammable substances like celluloid, alcohol or high-proof spirits of any kind would be set on fire when touched by this radiated power.

Now, what does this teach? Why, simply this: These new engines of war are so terrible that peace must come from sheer dread of their awfulness. One might as well be struck by lightning as be touched by this latest death dealer, if they had any explosives about them. Peace, then, as we have said, must come, and whether we like it or not, our differences must be settled in some other way than by war. We will then turn this lately discovered force to better use than killing one another. We will "beat our swords into plow shares."

Speaking of plows, it might seem strange to some to think of applying the X-rays to agricultural pursuits, which are supposed to be ways of peace and pleasantness; but, when properly applied, this wonderful force is just as potent for good as for evil, and its use on the farm is not altogether new. In fact, for over three years the X Rays Sulky and XX Rays Gang Plows have been used to turn up the soil on thousands of farms, and although they "go through anything," they are entirely harmless except to competitors. Instead of injuring the user by bringing forth explosions of his wrath, they act as a pleasant surprise to him and to his team, as well, because of their perfect work and light draft.

The X Rays Sulky has patented points peculiarly its own, and it draws fifty to seventy-five pounds lighter than any other plow doing the same work. Our fourteen-inch gang, cutting twenty-eight inches, draws as light as any other twelve-inch gang, saving one day's work each week it is used. (See advertisement of our X Rays Sulky on another page of this paper.)

Anyone wishing an illustration and full particulars, together with a nice looking

Money talks! We guarantee that

Tuttle's Elixir

will cure anything that a liniment can cure—\$100 reward for you if it doesn't. Reference, publisher of this paper. Send for circulars and full particulars to DR. S. A. TUTTLE, 27 Beverly St., Boston.

lapel button, free, should send to David Bradley Manufacturing Co., Bradley, Kansas Co., Ill., for them, giving the address as stated in the advertisement.

Bisulphide of carbon burns like gunpowder, and is sure death to any living thing with lungs. It is heavier than air, and is, therefore, good for vermin that burrow, like insects in grain.

Mind your own business—don't mine it.

Ticks! Lice! Fleas! Screw Worm!
CANOLINE (antiseptic and disinfectant) prevents all contagious diseases by destroying all bacilli, microbes, disease germs, foul odors and gases. It will kill ticks, lice, fleas, screw worms, bed bugs, ants, all insects and vermin; cure scab, foot-rot, sores, galls, bites and stings; keep off flies, gnats and mosquitoes. It is non-poisonous. Cheapest and best on earth. One bottle will make twenty or more ready for use. Twenty-five and 50 cents per bottle; or in gallon lots by all dealers; or the Cannon Chemical Co., St. Louis, Mo. Take no substitute.

The major part of the corn kernel is starch.

THE STRAY LIST.

FOR WEEK ENDING JUNE 30 1898.

Linn County—C. O. Hoag, Clerk.
HORSE—Taken up by Hiram Speaks, in Potosi May 28, 1898, one light gray horse, 17 hands high, brands, lump on breast size of hen's egg; valued at \$15.

Cherokee County—S. W. Swinney, Clerk.
MARE—Taken up by John W. Newton, in Cherokee tp. (P. O. Weir City), June 13, 1898, one bay mare, 15 hands high, dapple spotted in front; valued at \$50.

FOR WEEK ENDING JULY 7, 1898.

Clay County—J. G. Cowell, Clerk.
COLT—Taken up by C. S. Malcolm, in Chapman tp. (P. O. Longford), on June 7, 1898, one colt with two white hind feet and white star in forehead, aged about 1 year; valued at \$20.

FOR WEEK ENDING JULY 14, 1898.

Ellis County—Jacob Blessing, Clerk.
MARE—Taken up by Frank Staut, Hays City, June 15, 1898, one sorrel mare, 3 years old, spot in forehead, left front foot and left hind foot white; valued at \$15.

Rawlins County—Frank Johnson, Clerk.
MARE—Taken up by George W. Gordon, in Cella tp. (P. O. Beardsley), on June 20, 1898, one bay mare, weight about 900 pounds; valued at \$15.

Marshall County—James Montgomery, Clerk.
STEER—Taken up by Claus Nelson, in Marysville tp., June 9, 1898, one one-year-old red steer with white face, no other marks or brands; valued at \$15.

Jackson County—J. W. Atwater, Clerk.
MARE—Taken up by W. F. Oden, Holton, June 15, 1898, one gray mare, about 8 or 10 years old; valued at \$10.

MULE—By same, one sorrel mare mule, about 3 years old; valued at \$15.

MULE—By same, one mouse-colored stud mule, 2 years old; valued at \$15.

None of said stock have any marks or brands.

Allen County—C. A. Frank, Clerk.
MARE—Taken up by L. T. Donoho in Elsmore tp. (P. O. Elsmore), one bay mare, weight 1,000 pounds, about 10 years old, badly worn out; valued at \$10.

MARE—By same, one bay mare, weight 1,000 pounds, about 10 years old, white on right hind foot; valued at about \$15.

Elegant Sewing Machines
Buy direct Get the best. At factory prices. Warranted 10 years; all attachments for fancy work. No money in advance.
FREE 30 day trial. The Elegant *Alvins*, \$19.50 to \$24.50; regular price, \$30 to \$40. The Handsome, Durable *Argyles*, \$16.50 to \$19.50; regular price, \$20 to \$25. The *Singer* Models, \$3.25. Send for large catalogue before you buy, and save money. Address
P. ELY MFG. CO., 391 State St., Chicago, Ill.

BLACK LEG PREVENTED BY PASTEUR "VACCINE."

Write for particulars, prices and testimonials of thousands of American stockmen who have successfully "vaccinated" their stock during the past three years in Dakota, Nebraska, Wyoming, Colorado, Kansas, Texas, etc.
PASTEUR VACCINE CO., 52 Fifth Avenue, CHICAGO.

MARKET REPORTS.

Kansas City Live Stock.

KANSAS CITY, July 11.—Cattle—Receipts since Saturday, 6,828; calves, 1,256; shipped Saturday, 858 cattle; 1 calf. The market was steady to 10c lower. The following are representative sales:

SHIPPING AND DRESSED BEEF STEERS.			
No.	Ave. Price.	No.	Ave. Price.
69.....	1,271 \$5.00	42.....	1,270 \$4.75
19.....	1,116 4.70	31.....	1,131 4.65
89.....	1,012 4.60	11.....	1,085 4.55
1.....	1,200 4.25	2.....	1,285 4.00

WESTERN STEERS.			
40.....	1,190 \$4.60	126.....	1,202 \$4.50
12.....	946 4.35	52 Tex.....	1,032 4.00
2.....	770 4.00	32.....	706 3.80

NATIVE COWS.			
2.....	1,100 \$3.65	5.....	952 \$3.40
1.....	1,150 3.35	1.....	960 3.25
3.....	923 3.25	2.....	1,030 3.15
1.....	1,030 2.75	1.....	900 2.65

NATIVE FEEDERS.			
23.....	1,125 \$4.65	1.....	1,210 \$4.40
9.....	1,072 4.15		

NATIVE STOCKERS.			
63 yrl.....	653 \$4.70	19.....	746 \$4.55
12.....	834 4.20	1.....	720 4.00
6 Hol.....	833 3.50	1 Jer.....	640 3.25
1 Je. r.....	580 3.25		

Hogs—Receipts since Saturday, 5,609; shipped Saturday, 1,082. The market was 5c lower. The following are representative sales:

49...306 \$3.90	70...280 \$3.87½	65...278 \$3.87½
64...227 3.85	84...294 3.85	65...277 3.85
82...227 3.82½	84...254 3.80	75...223 3.80
54...262 3.80	69...255 3.80	63...272 3.80
66...252 3.77½	68...287 3.77½	50...237 3.77½
59...237 3.75	65...232 3.75	65...268 3.75
78...250 3.75	67...275 3.75	3...166 3.75
51...207 3.72½	84...207 3.72½	79...203 3.72½
86...235 3.70	76...231 3.70	90...204 3.70
80...196 3.67½	71...208 3.67½	80...205 3.67½
81...206 3.65	79...215 3.65	50...181 3.65
94...199 3.62½	59...197 3.62½	63...179 3.62½
112...167 3.60	64...159 3.60	68...203 3.60
25...185 3.60	28...155 3.55	78...207 3.55
3...320 3.50	28...134 3.50	11...129 3.50
13...131 3.45	34...134 3.45	26...123 3.45
52...221 3.35	23...108 3.35	1...210 3.25
2...175 3.00	1...280 3.00	4...165 2.50

Sheep—Receipts since Saturday, 3,667; shipped Saturday, 961. The market was steady to 20c lower. The following are representative sales:

75 spg. lbs...	66 \$6.00	30 spg. lbs...	57 \$5.75
30 spg. lbs...	67 5.75	118 sw.....	65 5.40
1 nat. sh...	110 4.75	23 nat. sh...	133 4.55
948 Ariz...	105 4.30	89 sw. stk...	68 3.25

St. Louis Live Stock.

ST. LOUIS, July 11.—Cattle—Receipts, 3,008; market steady; native shipping steers, \$4.50@5.20; light steers to dressed beef grades, \$4.00@5.00; stockers and feeders, \$3.00@4.30; cows and heifers, \$2.00@4.65; Texas and Indian steers, \$3.50@4.25; cows and heifers, \$2.50@3.65.

Hogs—Receipts, 3,500; market 5c lower; packers, \$3.70@3.80; yorkers, \$3.65@3.70; butchers, \$3.75@3.90.

Sheep—Receipts, 1,800; market steady; native, \$3.40@4.65; lambs, \$4.00@5.50.

Chicago Live Stock.

CHICAGO, July 11.—Cattle—Receipts, 17,000; market steady; beefs, \$4.10@5.35; cows and heifers, \$2.35@4.75; Texas steers, \$3.50@4.45; stockers and feeders, \$3.20@4.75.

Hogs—Receipts, 48,000; market 5 to 10c lower; light, \$3.62½@3.85; mixed, \$3.70@3.90; heavy, \$3.70@3.95; rough, \$3.70@3.80.

Sheep—Receipts, 17,000; market steady; native, \$3.25@5.00; western, \$4.00@4.65; lambs, \$4.00@6.15.

Chicago Grain and Provisions.

	July 11.	Opened	High'st	Low'st	Closing
Wht-July....	77½	77½	78	76½	76½
Sept.....	68½	68½	67½	68	68
Dec.....	68½	68½	67½	67½	67½
Corn-July....	32	32	31½	31½	31½
Sept.....	32½	32½	32½	32½	32½
Dec.....	32½	32½	32½	32½	32½
Oats-July....	22	22	22½	22½	22½
Sept.....	20	20½	19½	19½	19½
May.....	23	23½	22½	22½	22½
Pork-July....	9 90	10 05	9 90	9 77½	9 77½
Sept.....	9 90	10 05	9 90	9 92½	9 92½
Lard-July....	5 50	5 55	5 50	5 42½	5 42½
Sept.....	5 50	5 55	5 50	5 52½	5 52½
Ribs-July....	5 55	5 60	5 52½	5 52½	5 52½
Sept.....	5 55	5 60	5 52½	5 52½	5 52½

Kansas City Grain.

KANSAS CITY, July 11.—Wheat—Receipts here to-day were 44 cars; a week ago, a holiday; a year ago, 123 cars. Sales by sample on track, Hard, No. 1, new, nominally 76¢@77¢; No. 2 hard, old, nominally 82¢, new, 74¢@76¢; No. 3 hard, 70¢@76¢; No. 4 hard, 65¢@71¢; rejected hard, 63¢@63½¢. Soft, No. 1 red, new, nominally 77¢; No. 2 red, old, 90¢, new, 75¢@76¢; No. 3 red, 72½¢@74¢; No. 4 red, 65¢@66¢; rejected red, nominally 65¢; no grade, 62¢@63¢. Spring, No. 2, nominally 72¢@73¢; No. 3 spring, 70¢; rejected spring, nominally 63¢@65¢.

Corn—Receipts here to-day were 68 cars; a week ago, a holiday; a year ago, 34 cars. Sales by sample on track: Mixed, No. 2, 30½¢@31¼¢; No. 3 mixed, 30¢@30½¢; No. 4 mixed, 29¢@30¢; no grade, 28¢@27¢. White, No. 2, 32½¢; No. 3 white, 30½¢@31¢; No. 4 white, nominally 27¢@30¢.

Oats—Receipts here to-day were 12 cars; a week ago, a holiday; a year ago, 9 cars. Sales by sample on track: Mixed, No. 2, 25½¢; No. 3 mixed, nominally 24¢@24½¢; No. 4 mixed, nominally 23¢. White, No. 2, 26¢@27¢; No. 3 white, 25¢; No. 4 white, nominally 25¢.

Rye—No. 2, nominally 40¢; No. 3, nominally 37¢; No. 4, nominally 36¢.

Hay—Receipts here to-day were 24 cars; a week ago, a holiday; a year ago, 38 cars. Quotations are: Choice prairie, old, \$7.00, new, \$8.00; No. 1, old, \$6.00, new, \$5.50@6.00; choice timothy, old, \$8.50, new, \$7.00; No. 1, old, \$7.50, new, \$6.50.

Kansas City Produce.

KANSAS CITY, July 11.—Eggs—Strictly fresh, 9½¢ per doz.
Butter—Extra fancy separator, 14½¢; firsts, 12¢; dairy, 12¢; store packed, 9½¢.
Poultry—Hens, 6½¢; broilers, 13¢ per lb.; roosters, 15¢ each; ducks, 50¢; young ducks, 80¢; geese, 40¢; goslings, 80¢; hen turkeys, 70¢; young toms, 60¢; old toms, 60¢; pigeons, 75¢ per dozen.

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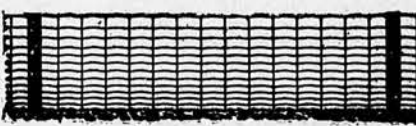
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The Poultry Yard

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CHICKS IN SUMMER.

Editor Kansas Farmer:—Last week I gave your readers some "Seasonable Hints" on the care of adult fowls. This week I will consider the subject of the care and treatment of young chicks in summer, that being the season we now have to deal with, and few, if any, perhaps, of your readers have to deal with young chicks in winter, although with proper facilities and experience they can be made quite profitable, notwithstanding the fact that they are out of their natural season and the mortality usually much greater from this fact, hence requiring more constant care, if possible, than in warm weather. Yet there are some things to contend against in hot summer weather that do not obtain in winter or cool weather.

TWO CLASSES.

They may be reasonably divided into two classes, as to methods of hatching and brooding: the natural, or those hatched and brooded by hens, and those hatched in incubators and afterward raised in brooders, known as the artificial. And as the care and treatment will vary somewhat according to the class, and as your readers are no doubt more interested just now in naturally or hen-hatched broods, it also being somewhat out of season for the artificial method, we will consider at the present only the natural method.

All I wrote last week in regard to shade, water, food and lice will apply here equally as well as to adult fowls. In fact, if anything, more care in these respects is needed than with the older ones.

When the time arrives to commence the process of incubation, two or more hens should be set at the same time, and when the chicks are ready to leave the nest give the result of two settings to one hen, or of three settings to two hens. This would probably give each hen from fifteen to twenty-five chicks (according to the hatch), which she is amply able to care for, if a good mother, and saves much care and trouble in looking after them.

Upon the advent of the hatching season, every poultryman or woman should provide themselves with an ample number of coops to accommodate all the broods. These need not be expensive affairs nor complicated; in fact, the simpler the better, the great point being to have them tight enough to keep out vermin of all kinds, such as rats, cats, skunks, weasels, etc., and so they will be absolutely dry, and if early in the season, so they will be warm and yet afford plenty of ventilation. Chicks cannot stand the least dampness, and hence must be kept dry. Damp coops are fatal to them, and causes as much or more trouble than any other one thing. Of the two evils, I would choose to have the chicks somewhat too cool, rather than damp. The coop should be made with a movable bottom—if double, all the better—and let the upper thickness of the bottom fit inside of the coop, so no water, no matter how severe the storm, can beat in and run under the sides and into the coop. At some future time I will try to illustrate what I consider the ideal coop.

These movable bottoms will facilitate quite materially the process of cleaning, for to reach the highest measure of success, as I said last week, the most perfect cleanliness must prevail in all departments.

Having now the hatch completed, and the hens with their broods placed in good, roomy and comfortable coops, do not rush the feed into them by the scoopful. Give the hens a good feed of corn or other nourishing food to break their fast of perhaps two or three days, but give the chicks nothing, neither food nor water, for thirty to thirty-six hours from the time of hatching; if forty-eight hours, it will not hurt them. Give them time to digest the yolk of the egg which they absorb just before leaving the shell. For the first feed I consider stale bread or broken crackers soaked in milk or water till moist—but not sloppy—with a dash of coarse, sharp sand or fine grit mixed in, one of the best foods for first use that can be had. Many think that a raw egg added improves it, but we have never had much success in using eggs for food, either raw or hard boiled, though a great many claim to use them with satisfaction and success.

If the hens have been properly cared for during the period of incubation, they ought to have come from the nest free from lice; but to be on the safe side and to "make assurance doubly sure," before placing the hen and her brood in

the coop prepared for them, dust them thoroughly with insect powder, and know that it is fresh.

The hen should be kept confined for two or three days, so she will hover her flock, thus giving them the warmth so essential and also a chance to gain growth and strength before liberation.

It would be well to still keep the hen in the coop a few days longer, feeding her well, of course, and let the chicks have the run of the yard or a small space in front of the coop in which to exercise. Let the little fellows run; it will do them good; only see that they cannot stray so far away as to get lost and thus oftentimes perish from cold or other causes. Keep them in plain view of the coop and in hearing of the mother's voice; they will know it and heed it much sooner than many would suppose. For the first few days the food I have indicated above should be given every two or three hours, at least five times a day. After this time the food may be varied somewhat, giving more dry food, such as millet seed, of which they are very fond, and an excellent ration, by the way—cracked wheat, broken rice, etc., in fact, most any grain or seeds that they can swallow, to keep up a variety; only be sure that whatever is given them to eat or drink is pure and sweet. No musty or moldy grain or sour, sloppy food can be used with impunity. Diarrhea or bowel trouble is the almost inevitable result.

This subject will be continued next week, when we may also consider some of the diseases and troubles the chick is heir to, and some of the remedies therefor.

C. B. TUTTLE.

Excelsior Fruit and Poultry Farm, Topeka, Kas.

The Barred Plymouth Rock.

The Plymouth Rock is a remarkable fowl. Those who originated it "built better than they knew." They could not have foreseen how it would live down all opposition, spread over the whole country and invade foreign lands, winning fresh laurels wherever it went. They knew in those early days that this cross-bred fowl had excellent qualities, that it had size, vigor, hardiness and prolificacy to recommend it; but they could not have known its possibilities for beauty when it had reached the thoroughbred stage, nor the immense popularity it would enjoy. It is hardly too much to say that it is in this country—booms not being considered—the most popular fowl that exists, and that in England it is a strong rival of the Dorking for first place. At some of the leading English shows, as can be learned from their published reports, the Plymouth Rock, in the number of entries, leads all breeds. It has a Specialty Club devoted to its advancement, in connection with the Andalusian and Leghorn, if this writer remembers correctly. The English poultry papers devote considerable space to descriptions of and discussions about the Plymouth Rock, and our American book upon the Plymouth Rock, revised by an English breeder, has been republished in that country. It is undoubtedly regarded abroad as the most distinctly American of the American breeds, and has done more than any other single breed to make the reputation of American fanciers as skillful breeders.

It will hardly seem out of place for this writer to speak a good word for the pea-combed variety of this excellent fowl, inasmuch as it is generally known that he considers the pea-comb as a marked improvement over the single for purely practical purposes. And yet, lest it should seem like an attempt to advertise this variety, he is reluctant to express his convictions upon this subject. It will, perhaps, suffice to say that in all respects, except the character of the comb and wattles, the Pea-comb Barred Plymouth Rock is the counterpart of the single-combed variety, from which it has "sported;" that in size, color, and other qualities the two varieties are alike; and that the only advantage claimed is that the pea-comb, being very small, is practically proof against frost. A discussion of the Barred Plymouth Rock would be incomplete which ignored the fact of this variety.

The early Plymouth Rocks were somewhat uncertain in breeding. Coal black pullets were not uncommon, and even now can be produced by the mating of any dark males and females. In England these black chickens are saved, and occasionally advertised as Black Plymouth Rocks, and both cockerels and pullets have been so produced. We have seen in foreign publications these black pullets advised to be used for the production of exhibition males, but no American breeder would think for a moment of so using them. If he unfortunately produced any such, they would be speedily marketed.

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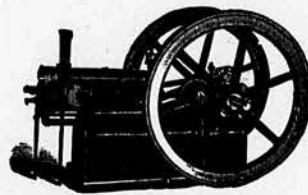
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The mating of Barred Plymouth Rocks, for exhibition purposes, is quite an art in the country, two matings, one for cockerels and one for pullets, usually being made. For the production of cockerels a rather dark, deeply barred male is mated to dark but well barred females. For pullets the mating is of exhibition females to males that are very light in color, but showing faint bars to the skin. This mating has sometimes been carried so far that the male and female lines have been kept as distinct as if they were two entirely different varieties.

While success has unquestionably followed this system, and fowls of the desired colors have been produced, it still seems to be a mistaken policy. The Plymouth Rock ought to be so bred that from a single mating exhibition birds of both sexes can be produced, and if any reliance can be placed upon the statements of some prominent breeders, there are strains of Plymouth Rocks in which a single mating will produce exhibition males and females. If this is possible, and our experience leads us to believe that it is, it is certainly the best method to follow. No fowl is fully entitled to the name of thoroughbred until both sexes of the desired color and characteristics can be bred from a single mating. It is true that in other varieties double matings are frequently used, especially in Dark Brahmas and Partridge Cochins, but this fact does not weaken the statement that the name thoroughbred ought to carry with it the certainty of the production of exhibition specimens of both sexes from the same mating.

The Plymouth Rock exhibits in a marked degree what can be accomplished by persistent effort in breeding. From muddy colored, uncertainly barred fowls, which it would require a great stretch of the imagination to consider beautiful, have been produced fowls of

exquisite barring and lovely shade that are by all persons regarded as extremely beautiful. A fowl whose chief and at the start almost sole recommendation was its utility, has been transformed into one that is as beautiful as it is useful. This difficult union of qualities, despite the trouble that their preservation entails, makes the Barred Plymouth Rock a perennial favorite. Other breeds have their booms, rising like a rocket and falling like a stick, but the Plymouth Rock perseveres in its steady course, winning greater and greater popularity with each succeeding year. It has never had a boom in its history, and yet it has now the greatest popularity. Its favor has been won by merit, and by merit it retains what it has won. And this is the secret of all permanent popularity—without merit a boom is useless. A fowl may have a boom, and it may have enough merit to stand the boom, but if it lacks merit its history will be like that of a

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meteor—it flashes brilliantly across the sky and perishes by the effort that made its light. But the Plymouth Rock has been like a sunshine at its dawning, but steadily growing brighter as it climbs toward the zenith. Judging by its continued growth in popularity it has not yet reached the zenith. And when it does, it is quite probable that the figure will no longer apply, for there is little likelihood of its becoming a setting sun.—H. S. Babcock, in Live Stock Gazette.

James Nimon, of Parker Earle strawberry fame, is said to have a new one, the Dewey, that is worthy of its name-sake.

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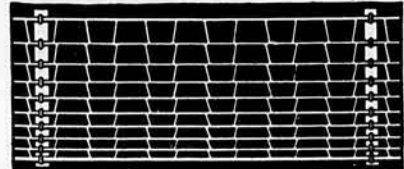
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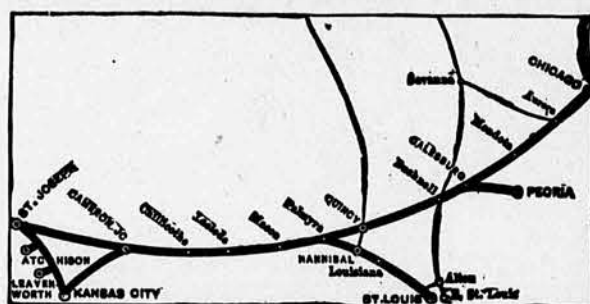
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WANTED.—Coach stallion, bay or black, weighing 1,200 or over. J. C. Robison, Towanda, Butler Co., Kas.

SHORT-HORNS FOR SALE.—Forty-six cows and 8 heifers, Crulckshank, Young Marys, Rose of Sharon and others; an extra lot. Nearly all were sired by that grand Crulckshank, Royal Prince 100646. Six bulls ready for service, sired by Young Mary bull, Glendon 116871. Parties met by appointment. Theodore Saxon, St. Marys, Pottawatomie Co., Kas.

FOR SALE.—Solid light fawn registered Jersey bull, 19 months old, Pedro Coomassie breeding. Edward Hunzicker, Colony, Kas.

WANTED.—Ten or fifteen head of good thoroughbred Hereford cows and heifers; not particular about fancy breeding. Walter Latimer, 504 New York Life Building, Kansas City, Mo.

LARGE STOCK FARM WANTED NEAR ROCK ISLAND road in Kansas. D. P. Norton, Council Grove, Kas.

SOWS FOR SALE.—By all the great boars. Write for what you want. I will price right; going to sell. F. W. Baker, Council Grove, Kas.

CELESTIAL PLANTS.—White Plume. 25 cents per 100. \$2 per 1,000. J. H. Shaw, market gardener, Florence, Kas.

PIGS.—Out of Victor Free Trade 38825, sired by Kiever's First Model 18245, \$20. F. W. Baker, Council Grove, Kas.

BERKSHIRES.—Choice bred sows by Imported Lord B Comely, and boars ready for service. Wm. B. Sutton & Son, Russell, Kas.

BERDEEN-ANGUS BULLS.—Three individuals of serviceable ages; registered. Wm. B. Sutton & Son, Russell, Kas.

FOR SALE.—Five first-class registered Clydesdale stallions. H. W. McAfee, Topeka, Kas.

MACLEAN FARMERS' SUPPLY CO., Kansas City, Mo. (Between Union Depot and Stock Yards.) Sell machinery and other supplies to farmers direct, saving the consumer middlemen's profits. Send now for 1898 Spring Price List.

WANTED.—NOW—Agents to sell Sash Locks and Door Holders. Sample Sash Lock free for 3-cent stamp. Immense; better than weights; burglar proof; \$10 a day. Write quick. Address: BROHARD & CO., Dept. 108, Philadelphia, Pa.

DAIRY WAGON FOR SALE.—Good two-horse covered dairy wagon, custom made. A. E. Jones, Topeka, Kas.

PIGS.—Out of a Hadley Jr. sow and sired by Kiever's First Model 18245 at \$20. F. W. Baker, Council Grove, Kas.

CLOSING-OUT SALE.—Of Light and Dark Brahmas, Buff and Partridge Cochins, and a few B. P. Rocks and S. C. B. Leghorn cockerels at \$1 each until gone. Some of these are show birds. Stamp for written reply. Address Sunny Side Poultry Yards, Walton, Harvey Co., Kas.

WE MAKE A GOOD FARMER'S SPRING WAGON.—Two lay-backs and let-down end-gate, for \$55. Warranted. We will ship on approval to respectable parties. Kinley & Lannan, 424-426 Jackson street, Topeka, Kas.

YEARLING SHORT-HORN AND GALLOWAY BULLS.—Registered and high grades, of Bates and Crulckshank stock, at bedrock prices, either by carload or singly, time or cash. J. W. Troutman, Comiskey, Kas. (Northern Lyon county, Mo. Pacific R. R.)

FOR SALE.—A few October pigs of 1897 farrow, and some bred sows to Kansas Boy and Success I know. Also B. P. Rock eggs, \$1 per setting. H. Davison & Son, Waverly, Kas.

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

WRITE TO ALEX RICHTER.—Hollywood, Kas. how to sub-irrigate a garden, etc., and cost of same. Send him the size or dimensions of your garden, and he will give full information.

FOR SALE OR EXCHANGE.—Two Galloway bulls Address W. Guy McCandless, Cottonwood Falls, Kas.

640 ACRES ARKANSAS LAND.—Two miles from station, to trade on Kansas farm. Will pay balance or assume incumbrance. E. W. Melville, Eudora, Kas.

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SHORT-HORN BULLS.—Crulckshank-topped, for sale. Choice animals of special breeding. Address Peter Sim, Wakarusa, Shawnee Co., Kas.

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WE SELL DIRECT TO THE FARMER AT ONE-HALF DEALERS' PRICES. New Disc Harrow, Grain Drill Throwing the earth all one way. Revolutionizes the method of seeding, as the twine binder did the harvest. Disc 6 1/2 in. and 9 in. apart. Send for circular. **DEATH TO HIGH PRICES.** 14-in. Bulky Plows, \$25. 16-in. S. B. Plows, \$35. Rolling Coulters, Extra, \$15. 6-ft. Lever Harrow, \$7.50. Mowers, \$25.40. Riding Gang Plows, \$35. 12-ft. Disc Harrow, \$18. Hay Rakes, \$11.65. Wagons, Buggies, Harness, Sewing Machines, Cane and Older Mills, Hay Tools and 1000 other things at one-half dealers' prices. Catalogue free. Hapgood Plow Co., Box 2, Alton, Ill. NOTICE—This ad. will appear until Aug. 18, '98. Mention Kansas Farmer.

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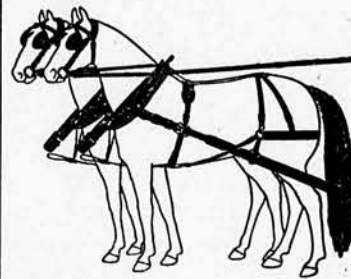
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Three-fourth inch Bridles throughout, heavy leather team collars, varnished iron bound hames, 1 1/2 doubled and stitched traces with 3/4 ft. chain at end, flat leather pads, 3/4 inch back straps, 3/4 inch hip straps, 3/4 in. by 13 ft. leather lines. Our prices with hip straps, Complete, per set \$11.10. If desired without collars, deduct 1.50. Remember we are the largest Harness and Carriage House in the Northwest. Send for our new Illustrated Catalogue.

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25 head in herd. Herd boars, King Hadley 167668, and Turley's Chief Tecumseh d 179788. Forty-six head of fall pigs that would be considered "the best" in any herd in United States. Write for particulars. Prices right and stock guaranteed. **J. M. TURLEY, Statesbury, Vernon Co., Mo.**

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Official Receipts for 1897	1,921,962	3,350,796	1,134,236
Sold in Kansas City 1897	1,847,673	3,348,556	1,048,233

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