

Agricultural Matters.

NEW AND IMPROVED VARIETIES OF WHEAT.

The great work accomplished and still in progress at the Minnesota Experiment Station in the improvement of the yield and quality of wheat in that State, is worthy of the careful attention of every farmer who thinks or has a desire to be informed of the progress being made in his own line of work. The following excerpts from Minnesota Experiment Station Bulletin No. 62 should be read with greater interest than any tale of fiction:

OUT-CROSSED AND IN-CROSSED VARIETIES.

In 1892, many of the strongest plants in the field crop nursery were artificially cross-pollinated. Out-crosses were thus made between plants of different varieties and in-crosses between plants of the same variety. Each of the 101 seeds thus produced in 1892 was planted by itself in the field crop nursery in 1893, and a number given the resulting plant. Through an accident, about two-thirds of the resulting plants were destroyed. Those remaining were harvested separately, and full notes were recorded of each. Only a part of the out-crosses proved to be true crosses. A Blue Stem variety with hairy chaff had been used for the male parents in all the out-crosses, and all the female parents were smooth-chaffed varieties. Where the resulting plants were marked by the hairy chaff of the male parent, the proof of a true cross has been regarded as certain. Where the chaff remained smooth, not showing the character of hairy chaff from the male parent within two years fecundation has been regarded as having resulted from self-pollination, and the varieties have been discarded from further trial, or if especially promising have been classed with the new varieties by selection alone.

From each cross-bred plant grown in 1893, one hundred or more seeds were planted in 1894. The best plant was chosen in each of a number of cases, and from these one or more hundreds of seeds were planted in 1895. After selecting the best plants with which to continue the breeding, and discarding the poorer ones, the remainder of the plants of each stock were harvested in bulk and planted in a small field plot in 1896. From these plots sufficient seed was produced so that in 1897 a twentieth acre plot of each was grown at University Farm. In 1898, these varieties were again tested at University Farm and at Northwest Farm.

Some of the in-crosses and also some of the out-crosses have made very creditable yields in comparison with our best varieties. These results indicate that useful varieties of wheat may be originated from single carefully selected mother plants one generation from the cross. It by no means follows that it is the wiser course to start at once new varieties, rather than to continue the selection of newly crossed stocks to a single best plant out of one or more hundreds for each of several generations before using a single plant as a mother of a new variety, or to first grow the cross-bred wheats in the field for a few years, and then subject them to extensive nursery selection before increasing into a variety. It must be said, however, that while these new out-crossed wheats are known to be true crosses, they have shown very little tendency to vary or revert to types other than the type of the 1894 mother plant, of the second generation after the cross, from which they originated.

In only one of the in-crossed wheats have we evidence of there being a true cross. Minn. No. 292, Risting's Fife X Risting's Fife, is a much lighter colored wheat than the parent variety, and presumably the changed color is a variation resulting from the cross between two plants of the same variety.

It is not to be expected that even under a most rigid selection of plants in the nursery that all resulting cross-bred varieties will prove valuable when subjected to field trials. That a majority of the six thus far tried give promise of being among our best wheats gives a basis for the hope that by systematic cross-breeding followed by rigid selection varieties may be originated which will prove superior not only to the best parent wheats collected, but superior also to the best wheats originated by selection alone. Experiments mentioned elsewhere demonstrate that greater variation is produced by crossing than occurs in wheat permitted to self-fertilize.

Rigid selection of these cross-bred stocks through a series of years will doubtless result in finding those plants

which are adapted to becoming the progenitors of heavy-yielding varieties of good quality. This selection includes (1) the choice of the best yielding plants bearing good grain in the nursery, (2) the varieties yielding best in the variety field trials, and (3) those proving to have high quality in the milling tests.

NEW WHEATS COMPARED WITH PARENT VARIETIES.

Here are given descriptive and tabulated comparisons of new wheats with the parent varieties. Some of these new varieties proved inferior to their parents. In table XLII [of the bulletin] another variety, designated Minnesota No. 169, which was originated from the same variety as Minnesota No. 161, an inferior variety, but from a different mother plant, is compared with the parent variety.

In columns two and three are given yields at University Farm, Northeast Farm, South Dakota Experiment Station, and at the Iowa Experiment Station, with the average for eight yields. Here the increased yield of the new wheat over its parent is 2.8 bushels per acre. In columns four and five, four yields are given at University Farm only. Here the average shows an increased yield in the new wheat of 5.8 bushels per acre over its parent.

TABLE XLII.—Minnesota No. 169 Compared With its Parent, Haynes's Blue-Stem.

Grown at	Haynes's Blue-Stem—Minn. No. 51.	Minnesota No. 169.	Haynes's Blue-Stem—Minn. No. 51.	Minnesota No. 169.
University Farm, 1895.....	21.6	37.8	21.6	37.8
University Farm, 1896.....	24.6	25.0	24.6	25.0
University Farm, 1897.....	20.4	24.3	20.4	24.3
University Farm, 1898.....	23.3	26.3	23.3	26.3
Northeast Farm, 1898.....	23.0	19.3	.....	.....
South Dakota, 1898.....	20.2	14.1	.....	.....
North Dakota, 1898.....	33.5	38.4	.....	.....
Iowa, 1898.....	8.8	12.5	.....	.....
Averages.....	21.9	24.7	22.5	28.3
Gain.....	.....	2.8	.....	5.8

This is the most promising of all the newly originated wheats. Being a Blue Stem variety, it will doubtless become popular in the southern two-thirds of the State.

In table XLIII, in like manner Minn. No. 149 is compared with No. 66, Power's Fife, the variety from which it was originated. Averaging the eight yields, at the several farms, the increased productivity of the new variety over the parent is shown to be 1.4 bushels per acre, and averaging the four yields at

TABLE XLVII.—Minnesota Nos. 171, 292, and 293 Compared With the Parent Variety, Risting's Fife.

Grown at	Risting's Fife.			
	Foundation stock.	Selected from 1892 mother plant.	In-cross of 1892, 1894 mother plant.	In-cross of 1892, 1894 mother plant.
	Minn. No. 476.	Minn. No. 171.	Minn. No. 292.	Minn. No. 293.
University Farm, 1897.....	20.9	19.8	17.9	18.0
University Farm, 1898.....	26.6	26.3	32.0	21.3
Averages.....	23.8	23.1	25.0	19.7
Gain or loss.....	.....	-.7	+1.2	-4.1

University Farm, the increased yield is 4.2 bushels.

Minn. No. 181 was originated from a mother plant grown in the nursery in 1892. It shows an increased yield of 2 bushels per acre.

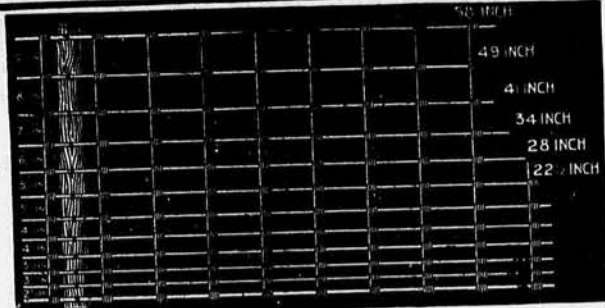
Minn. No. 288 is from a flower pollinated with pollen from a plant of the same variety in 1892. The cross-bred plant was grown in 1893, and from it in 1894, 100 plants were grown. From among these the best plant was chosen as the mother plant of this variety. The average increased yield here is shown to be 1.8 bushels per acre.

In table XLVII, Minn. No. 476, Risting's Fife, is compared with three varieties which have sprung from it. Minn. No. 171 was originated by selecting the best plant of Risting's Fife in the nursery in 1892 for a mother plant. A decreased average yield of seven-tenths of a bushel per acre is here shown.

Minn. No. 292 is the result of an in-cross made in 1892 between two plants of Risting's Fife. The plant resulting from this cross was grown in 1893, and from it 100 plants were grown in 1894. From the best plant of this 100, some 900 plants were grown in 1895, and of these the best 300 were selected and the grain from them planted as a variety in 1896. This variety is doubtless the result of a true in-cross, since the berry is of a much lighter color than the pa-

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rent wheat. The averages show an increased yield of 1.2 bushels per acre.

Minn. No. 293 had its origin in the same manner as 292, excepting that its 1893 cross-bred parent plant originated from crossing two other Risting's Fife plants than those used in producing the parent plant of No. 292. A marked decrease in yield of 4.1 bushels per acre,

while with seven a decrease of yields has resulted. The average increased yield of the six improved wheats is 1.98

TABLE XLIX.—Minnesota No. 163 Compared With the Parent Variety, Glyndon 811.

Grown at	Glyndon 811—Minnesota No. 168.	Minnesota No. 163.
University Farm, 1895.....	42.2	42.7
University Farm, 1896.....	19.0	23.0
University Farm, 1897.....	16.3	19.9
Averages.....	25.8	28.5
Gain.....	.....	+2.7

bushels per acre. The average decreased yield of the poorer new wheats is 1.92 bushels. Minn. No. 293 shows the most marked variation in yield, and that a retrograde variation. Minn. No. 169 shows the most pronounced increase in yield. This table gives the most positive evidence that marked variation occurs, both towards better and towards poorer yields. Where variation occurs improvements may be effected. A comprehensive detailed plan of operations diligently and accurately carried out for a long series of years can not fail to very materially increase the productivity and the quality of wheat or any other crop.

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three yields shows an increase of 2.7 bushels per acre. Arrangements were made with numerous farmers and seedsmen to grow this wheat in 1899 and sell it for seed to the farmers of the State.

Out of the thirteen wheats thus compared six give promise of increased yield,

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The Stock Interest.

THOROUGHbred STOCK SALES.

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

DECEMBER 6-7—Armour, Funkhouser, Sparks, Herefords, Kansas City, Mo.

INOCULATION AGAINST TEXAS FEVER.

For many years Texas fever has been the greatest obstacle in the way of shipping northern pure-bred cattle to the southern ranges. Heretofore the losses in cattle shipped from the North by this malady have rarely been less than 40 per cent, and frequently 70 per cent or more. In the nature of the case southern buyers could not pay satisfactory prices and run the risk of loss from Texas fever. To grade up their herds, they would willingly buy all of the surplus blooded stock of the North every year at good prices, if by any means the ravages of this fever could be reduced.

For a number of years Dr. J. W. Connaway, of the Missouri Experiment Station, and Dr. M. Francis of the Texas Experiment Station, with the help of the Missouri Board of Agriculture, have been working on this problem, with the result that a successful treatment has been found and put into operation. Already over 400 blooded cattle have been inoculated and exposed to Texas fever on the ranches for an entire year, with a loss of less than 8 per cent. During this time a loss of 65 per cent has been reported in one lot sent without inoculation to an adjoining ranch. The climatic conditions and general treatment were similar in the two cases.

CAUSE AND NATURE OF TEXAS FEVER.

The cause of Texas fever is a micro-parasite which is found in the blood of southern-raised cattle. The natural method of communication of this germ is by means of the Texas fever tick (*Boophilus bovis*), which abounds in the South. The disease can also be induced artificially in susceptible cattle by hypodermic injection of infected blood taken from southern cattle. When a susceptible animal is infested with ticks or is inoculated with infected blood, the germs thus introduced attack the red blood-corpuscles and destroy them in large numbers. This weakens the vital force of the animal and produces a large amount of broken down waste tissue which must be eliminated from the system. Such a condition demands increased action on the part of the tissues producing the red blood-corpuscles, and larger capacity for carrying off the waste materials through the liver, kidneys, spleen and bowels. If the system of the animal is able to successfully cope with these exigencies, it will thereafter be immune to the disease and able to resist the action of the fever germ.

HOW IMMUNITY MAY BE ATTAINED.

It appears so far as experiments have yet shown, that the only way of producing immunity is through an actual attack of the disease, in as mild a form as possible, from either infestation with ticks or by inoculation with infected blood. It is thought that southern-raised cattle become immune while calves by repeated slight attacks of the fever caused by tick infestation. The Missouri station first made tests with 21 head of young calves by the tick infestation method, extending over three seasons. Several of the animals that had been well infested with ticks at the North were sent South, and proved to be immune. But on account of the necessity of maintaining quarantined pastures for using these ticks at the North, and the trouble of hand-feeding calves from non-immune cows, this method will probably not come into general use. Blood inoculation tests were begun at the same time, and have thus far proven to be more practical.

METHOD OF INOCULATION WITH IMMUNE BLOOD.

The supply animal may be either southern-raised or one immunized artificially. The blood is taken from the jugular vein of the supply animal through a sterile canula, collected in a clean vessel, and immediately defibrinated by stirring with wire or glass whipper until the clot is removed. The blood is then transferred to a hypodermic syringe and injected in proper quantities under the skin at the neck or shoulder of the animals desired to be inoculated. All instruments used in this work are thoroughly sterilized, and the blood is used while fresh.

The dose varies from 1 cubic centimeter to 2½ or 3 cubic centimeters. Severe fever is often produced by a dose of 1 cubic centimeter, so the best plan

is to give a comparatively small dose at first and repeat if necessary.

The best subjects for inoculation are young cattle from 8 to 12 months old, weighing from 500 to 800 pounds. Young calves may also be inoculated while nursing their mothers. But animals recently taken from the cow and not well accustomed to grain diet do not do well. Animals more than 12 months old are much more difficult to immunize, and it is certain that aged bulls and cows can not be immunized as successfully as young stock.

The most suitable time is at seasons when the animal will not suffer from either extreme heat or cold, although this work has been done at all seasons of the year with success. If inoculated in winter, the cattle must be well sheltered. Cattle should be sent South in December or January, to prevent sudden gross infestation with the ticks there.

FEVER RESULTING FROM INOCULATION.

It must always be kept in mind that the inoculation fever is genuine Texas fever, and in some cases death will ensue. Some animals require very careful attention and nursing through the fever resulting from inoculation, and some medical treatment. Unless a fever more or less severe is produced by the inoculation, the animal will probably not become immune. In some cases as many as three inoculations were made. After inoculation there is an incubation period of seven or eight days; then the inoculation fever begins and continues for eight or nine days, although in some cases it may not exceed four days and may be prolonged fifteen days. This is called the primary fever period, and the temperature of the sick animals will usually range from 104° to 106°. Maximum temperatures of 107° to 108° have been noted in a few cases. At the same time the fever rises, the percentage of red corpuscles in the blood begins to decrease, falling from the normal (about 35 or 40 per cent) to 20 per cent, and in severe cases as low as 10 or 15 per cent. At the close of the primary fever period, about the 15th day after inoculation, the temperature falls rapidly, and in severe cases the animal may die from collapse. From the 15th to the 29th or 30th days the animal will gain in strength, and the percentage of red corpuscles in the blood will return almost to the normal. About the 30th day after inoculation a secondary fever period often occurs, lasting seven or eight days. This period is usually not so severe as the primary, but the temperature often shows high elevation, and the destruction of red blood-corpuscles occurs again. At the end of fifty or sixty days the inoculated animals are ready for shipment.

CARE OF CATTLE DURING INOCULATION.

It is necessary that inoculated animals be well nourished during the fever and subsequently, since there is great lowering of the vitality of the animal, due to the destructive action of the micro-parasites on the blood-corpuscles. In these experiments the food has consisted of ground oats, bran, crushed corn, linseed-meal, clover and timothy hay. The effort is made to feed in a manner that will maintain a lax condition of the bowels, since the elimination of the waste products from the liver is mainly through the bowels. It is sometimes necessary to give salts to induce proper actions of the bowels. Other medicines, such as stimulants and tonics, are used as indicated. The animals are kept warm and comfortable, in clean quarters, and in every way carefully nursed. They have grass at the proper season. After sending inoculated animals South, they are watched during the first season to prevent relapse, and care is taken to avoid all conditions that lessen the vitality of the animal, as overheating, undue excitement or too much service.

FURTHER EXPERIMENTS NOW IN PROGRESS.

The Missouri Experiment Station is now inoculating at Columbia about 250 head of cattle, representing the Short-horn, Hereford, Devon and Red Polled breeds. These will be exposed to the fever in the South next summer for a further test of the efficiency of this method of immunizing cattle against this disease. The success of this method has already had the effect of greatly increasing the number of blooded cattle bought in the North by Texas cattlemen, and will add much to the value of all blooded breeding cattle in the North. Through this means a large and important market which has heretofore been practically closed is now opened to the northern breeder. An illustrated bulletin, No. 48, giving full particulars of these experiments is now being issued by the Missouri station, and will be sent free upon application to all parties interested.

Profitable Horse-Raising.

The key-note to profitable horse-raising is properly sounded by Mr. James Ridgeway in a recent communication to the Michigan Farmer, in which he says:

"In order to make this branch of farming pay it is now essential to have some system about it and breed for one or the other of the several popular types. The market demands horses for special purposes, and those which are neither one thing nor another are difficult to sell. The grade of horses has been raised, and one must aim high, but aiming high without a definite purpose in view is bad policy—almost as bad as raising scrub horses. The type of horses that is in the greatest demand just now is the road, carriage or coach horse. There is quite a wide difference in this type, for a heavy coach horse is anything but a light carriage animal. Still there is sufficient likeness in this type or division to guide one in his work. Good road and coach horses bring handsome profits to the breeder, and there is no reason why any such animals should go begging.

The day of the small and light horse has passed, and we are not likely to breed him again very soon. Even in the racer the tendency is to enlarge the type, and produce horses that are heavy and long-limbed. The next type is the draft horse. This animal is well known to farmers, and has been bred in the past to perfection more than any of the others in demand to-day. Some magnificent draft animals have been bred in this country, and we can equal any that are imported from abroad. The stock in this country offers a splendid foundation for future breeding."

Importance of Wide Tires.

GOOD ROADS CIRCULAR, U. S. DEPARTMENT OF AGRICULTURE.

It is frequently claimed that roads in the United States, instead of getting better, are constantly getting worse, and when the reason is asked, the explanation is made that the damage done to existing highways by the use of narrow tires is far greater than the improvement made by the semi-annual effort at fixing the roads. Without entering into a discussion of this claim, there is no denying that a heavily loaded wagon with narrow tires leaves its tracks on the highway, and the depth of these tracks depends upon the character of material of which the road is built, the width of the tires and the weight of the load. Whenever a loaded wagon becomes stuck, it is due to the fact that the road is too soft, and the tires too narrow for the load on the wheels. Water and narrow tires are the two causes which contribute to ruin the best roads. They aid each other in the work of destruction. The rut formed by a passing wagon forms a trough for the rain, which, instead of running off to the side, as it would do on a hard, smooth surface, sinks into the ground. The next wagon, finding the ground softened, digs its wheels deeper into the surface, and so the demoralization and destruction continues. This suggests one of the strongest arguments in favor of the use of wide tires. Wide tires are road-makers, narrow tires are road-destroyers. Wide tires roll and harden the road surface, and by their use every loaded wagon can be turned into an effective road-roller. Every wagon which to-day helps cut up the roads could be utilized for their improvement, for nothing so much tends to the making of good roads as continual rolling of the surface.

Onondaga County, New York, furnishes an interesting illustration of the value of wide tires as road-rollers. The Solvay Process Company, of Geddes, in that county, was accustomed to hauling heavy loads of stone for four and a half miles from the quarry. To test the wide tire theory, it built several wagons having 4-inch tires on the front wheels and 6-inch tires on the rear wheels, and with the rear axles longer than the others, so that the track of the rear wheels would just lap outside of those made by the others. The result of the use of these wagons was to produce a hard, smooth, compact surface, and the road, having been filled so as to raise the middle, or "crown" it, is thoroughly drained at the surface, and always fit for use with the heaviest loads. Loads of 8 tons are frequently hauled over them, and instead of tending to cut up the road, serve to roll it harder and harder. The superintendent reports, too, that the improved condition of the road has reduced the cost of hauling the stone from 80 cents per ton to 60 cents, or 25 per cent.

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Hood's Pills cure liver ills; the non-irritating and only cathartic to take with Hood's Sarsaparilla.

Farmers' Institutes.

Representatives of the Kansas State Agricultural College will attend farmers' institutes as follows:

- December 2, Bridgeport; Haney and Westgate.
- December 4, Carleton; Haney and Westgate.
- December 5, Kipp; Haney and Westgate.
- December 6, Cottonwood Falls; Haney and Westgate.
- December 7 and 8, Newton; Haney and Westgate.
- December 9, Bodarc; Haney and Westgate.
- December 11, Wichita; Haney and Westgate.
- December 12, Cunningham; Haney and Westgate.
- December 13, Perry; Popenoe and Willard.
- December 14 and 15, Indian Creek School House; Cottrell and Clothier.
- December 14, Dighton; Fischer and Boyd.
- December 14 and 15, Wellsville; Howell, Popenoe, Willard.
- December 16, McCracken; Fischer and Boyd.
- December 16, Kincaid; Popenoe and Willard.
- December 18, Hackney; Fischer and Boyd.
- December 19, Arkansas City; Fischer and Boyd.
- December 19 and 20, Oak Grange; Stoner and Otis.
- December 20, South Haven; Fischer and Boyd.
- December 22, Medicine Lodge; Fischer and Boyd.

"I beg yo' pawdon, suh," setting down his glass after the ceremony, "but did I undahstand yo' to say this whisky is chemically pyo'?" "Yes, sir," said the saloon man. "Ah, I was not sutten, suh, whether yo' said that, or stated, suh, that it was pyo'ly chemical."—Indianapolis Journal.

State of Ohio, City of Toledo, Lucas County, ss.

Frank J. Cheney makes oath that he is the senior partner of the firm of F. J. Cheney & Co., doing business in the city of Toledo, county and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of Catarrh that can not be cured by the use of Hall's Catarrh Cure.

FRANK J. CHENEY.

Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1886.

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Mr. J. N. Harshberger, of Lawrence, Kans., is doing considerable business in the way of conducting public sales of improved stock in the West.



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Mr. Harshberger is a courteous and faithful live stock auctioneer who enjoys the confidence of his patrons.

W. P. Goode & Sons' Annual Sale.

The annual Poland-China auction of W. P. Goode & Sons, held the 13th of this month at Olathe, was an improvement in prices paid and spirit of the bidding over the others held in Kansas this fall.

Please mention Kansas Farmer when writing our advertisers.

W. H. Ranson's Sale of Shorthorns.

W. H. Ranson, of Evergreen Ridge Stock Farm, North Wichita, Kans., held his public sale of fine registered Shorthorn cattle Saturday, November 18, at Diver's barn on Douglas avenue.

- Low Lord 128714, calved March 27, 1897, to H. A. Todd, Calumet, Okla.; price \$185. Sedgwick 140899, calved June 1, 1898, to C. W. Barnes, El Reno, Okla.; price \$85.

A Good Shorthorn Sale.

The dispersion sale of the small farm herd of Shorthorns, bred by Peter Sim, Wakarusa, Kans., held at the farm on November 16, 1899, was a notable success and an encouraging event for the Shorthorn breeding fraternity.

BULL SALES.

- Royal Bates 123675, herd bull, 4 years old; bought by Louis Hothan, Carbondale, \$252.50. Cundiff Superior, 6 months old; Jack Darling, Hoyt, \$115.

SALE OF COWS AND HEIFERS.

- Nellie Cundiff 3d, 10 years old; J. W. Troutman, Comiskey, \$95. Nora Cundiff, 18 months old; Frank Brown, Carbondale, \$142.50.

Our patrons, the Kansas City Hay Press Company, recently purchased the patents, patterns, stock, and good will of the "Boss" and Cyrus Robert's corn shellers.

and platform scales, stump-pullers, etc. The firm is popular and reliable and deserves the success achieved. It is a very creditable institution for Kansas City and the West.

Gossip About Stock.

L. A. Webster, of Vermont, the celebrated live stock artist, is making Topeka his headquarters while he is doing some sketching for leading breeders.

If any reader of the Kansas Farmer wants some very choice high-grade Hereford or Shorthorn bulls soon, he can buy to advantage of Hugh A. Hodgins, of Topeka.

James N. Burton, of Abilene, Kans., has a well-earned reputation as a live stock auctioneer, having had a number of years of successful experience in central Kansas.

James Mains, Oskaloosa, Kans., paid the top price of \$102, at the Poland-China sale of Geo. W. Null, of Odessa, Mo., held on the 14th inst.

W. B. Van Horn, breeder of Poland-Chinas, writes: "The pig trade is keeping me busy. I get inquiries every day. I shipped 5 last week to Oklahoma and Kansas farmers and breeders, and have orders for 3 more."

Special attention is called to the advertisement of high-class Poland-Chinas offered at public sale on Wednesday, November 29, 1899, by J. L. Foster, of Independence, Kans., who has a splendid lot of young males, females, and sows with litters.

The annual sale of Poland-China hogs, held November 14, 1899, by Geo. W. Null, Odessa, Mo., was a very satisfactory sale. Twenty-eight boars averaged \$28.40 and 27 gilts averaged \$16, making an average of \$22.33 for 55 pigs.

Mrs. Samuel Jewett & Sons, well known as breeders and growers of sheep, both in Kansas and Missouri, have just completed a deal by which they take possession at once of a 610-acre stock farm in Woodson County, of this State.

The public sale of young stuff sired by J. R. Young's famous Missouri's Black Chief, for which breeders of the best have been watching since the Kansas Farmer's preliminary notice a month ago, is now set for December 8, and a display advertisement on the cover page of this issue makes announcement of the same.

The great Galloway cattle sale of the year will be the auction offering of 30 head of pure-bred cattle, consisting of 18 bulls and 12 cows and heifers, on December 14 and 15, 1899.

Make Cows Pay.



If every cow would give half as much more milk as at present without increasing feed or expense, dairying would pay well. A Little Giant Separator could earn such an increase in product almost every time, and will change a losing business into a paying one.

Send for illustrated Catalogue No. 19. The Sharples Co., Canal & Washington Sts., CHICAGO. P. M. SHARPLES, West Chester, Pa. U. S. A.

It is that other business cares prevent our giving proper attention to thoroughbred cattle. Halter-breaking and fat are important factors in the show ring, as usually conducted, and nowhere else.

The Curttice Herefords are considered the creme de la creme of the breed by competent Hereford breeders who have had the pleasure of looking over this magnificent herd of whitefaces, the property of J. M. Curttice, of Kansas City, who moved from Kentucky two or three years ago and purchased one of the best stock farms in Jackson County, Missouri, located in easy driving distance of Kansas City.

The first public sale of richly bred Hereford cattle to take place at Kansas City will be the combination sale of Gudgeall & Simpson and Cornish & Patten. The independence herd is well known throughout this country, while that of Cornish & Patten, of Osborn, Mo., is bred along about the same lines as that of Gudgeall & Simpson, and possesses merit that ought to be more extensively known, as it doubtless will be after the coming sale.

The importance of Oklahoma as a market for breeding hogs is emphasized by each successive report from breeders who do business with the Kansas Farmer. The sales reported by R. H. Wheeler, of Lawrence, Kans., for the past sixty days begin with the following: To James L. Hughes, Apharo, Okla., a pair of spring pigs; to Dr. J. McLean, Blackwell, Okla., a boar and 2 sows.

One of the noted events in the Hereford history of 1899, will doubtless be the combination public sale of specially selected animals from the noted herds of K. B. Armour, of Kansas City; Jas. A. Funkhouser, of Plattsburg, Mo., and John Sparks, of Reno, Nev.

The Home Circle.

SIGNS INFALLIBLE.

When overcoats on the street appear,
And warm furs the ladies wear,
And days grow shortest of the year,
And insects cease their humming;
When the leaves lie withered, brown and
sear,
We know the winter's coming.

When the old straw rack is laid aside,
And boys and girls sit side by side,
As o'er the snow they swiftly glide
Bells jingling clear;
Proclaim to all the country wide
That winter's here.

When boys' faces wear a broader smile,
In which there's not the least of gulle,
While searching for a last year's file
To sharp their skates;
You may know the ice is hard'ning.
While cross the steel it grates.

White boys and girls sleighride and skate,
As two and two they love to mate,
The old folks sit silent by the grate,
Cozy, snug and warm;
For those whose years are growing late,
Winter's lost its charm.

When Time's frosts on our heads appear,
And crow-feet marks our faces wear,
And life's ills seem more hard to bear
Each passing year;
It needs no seer to make us aware
Death's winter's near.
Waveland, Kans. J. A. BAXTER.

MR. ODDIE'S COURTSHIP.

Mr. Markham Oddie was a model lodger, an old bachelor, and a heart-whole man. That is to say, he was all three until the day—considerably past his 40th birthday—that a special fate took him in hand, and brought him face to face with the younger of two women who had recently come to live in one of the houses opposite. They were evidently mother and daughter; both were comely, and the last named of the two had one of the sweetest faces it had ever been Mr. Oddie's luck to behold. She happened to drop a small parcel while walking along their mutual road, and he hurried after her with it. Immersed in her own thoughts, the woman did not hear him call politely to her, and quite colored up when the packet was presented; but the smile with which she received it went straight through Mr. Oddie's somewhat antiquated waistcoat. All the evening he thought of that smile, as he read, without the least taking it in, "The Globe" "turnover," which that night was entitled "Faded Relatives." When he went to bed he endeavored, with the aid of three candles, to get an impartial view of that region on the top of his head where the hair ought to have been, but now, alas, was not. The bald spot had not troubled him much up to that time; now he regarded it with mistrust. However, Mr. Oddie comforted himself with the reflection that many men at his age were much bald, and that his mustache was what you might call spruce.

Mr. Oddie had led an amiable, punctual, uneventful existence, going to and returning from the city every week day with regularity and dispatch—the kind of person who is never asked for his season ticket. He was comfortably off, and had no one dependent upon him; the few relatives he possessed lived in the shires. Now and then a batch of country cousins came up to town on pleasure bent; Mr. Oddie thereupon exerted himself valiantly to conduct them to Mme. Tussaud's, the Tower, the British Museum, and other places of wild excitement. Afterward he looked a little pale and wan for two or three days, and put up his feet after dinner.

Mr. Oddie had remained a bachelor all these years possibly because nobody had set to work to marry him. It was not that he objected to women; on the contrary, he admired the fair sex, as a whole, quite unreservedly, and had the nicest of dear, old-fashioned notions about them. But he had never given his heart to any one particular woman, and his landlady looked upon him as a fixture.

The returning of that apparently innocent-looking parcel marked an epoch. Life was never the same again to the little old bachelor. He had not watched Miss Hexham's gentle face and well-developed but graceful figure for ten days before he became convinced that it was not good for a corn-dealer to live alone. "It hardened him," said Mr. Oddie to himself, and he stirred his coffee with self-reproaching sternness.

"A man wanted softening influences about him"—here he hurled a piece of fried ham to the cat—"he needed a gentle hand to guide and restrain him." Mr. Oddie at this point discovered that he had forgotten to wind his watch up the night before.

The truth was, he was in love, and with a young woman with whom he had never exchanged a syllable. He learned

her name from his landlady, an austere person, whose mind was set upon a curious form of religion, and who did not take much thought about frivolous worldly matters. Without objecting to her lodger personally, Mrs. Roper nevertheless entertained no vain hopes that he would be saved at the Last Day. The elect, who were to be caught up on the wings of a great bird, and carried away into the desert for time, times, and a half, would be uncommonly few, according to Mrs. Roper's belief. Two hundred from Liverpool, 80 or thereabouts from Northampton, her native place, and a matter of 9,000 or 10,000 from London, the Great Babylon. The number of the saints would indeed be restricted.

Questioned discreetly by her lodger, this worthy but depressing person could tell him little regarding the two ladies who were now the objects of such tender interest to him. They were a Mrs. and Miss Hexham, so she had heard, and Mrs. Hexham was either deaf or dumb, or it might be both, for her daughter talked on her fingers to her, and she answered back in the same way.

"As sharp as lightning they do it, I'm told," remarked Mrs. Roper, heaving a deep sigh. "'Tis wonderful, but will it do 'em any good when the Last Trumpet sounds; that's what I want to know. Will you like a few peas, billed with a sprig of mint, with your dinner to-night, sir?"

Clearly there was not much information to be got out of Mrs. Roper, a woman not given to ordinary gossip. Just then, too, she and her fellow-believers were busy settling the exact number of the elect likely to "go up" from Manchester; her thoughts therefore, were fully occupied.

Mr. Oddie's courtship was a very decorous affair. In Spain, despite his years, he would doubtless have adopted the role of an "iron-eater," as the youth who goes courting under his lady love's balcony is styled. But in sober, unromantic England the suitor does not eat iron, or serenade the queen of his heart on the guitar. He has to be properly introduced, and the little corn-dealer, knowing this respectable custom, would have given anything for an introduction which would have allowed him to call and establish friendly relations. The months passed, and still he could not get that thin but necessary end of the wedge in. In a village he would certainly have managed to become acquainted with the Hexhams in a week, but London people pride themselves upon having nothing whatever to do with their neighbors living in the same street. The mother and daughter seemed to have very few friends, and never went out, probably on account of Mrs. Hexham's affliction. It was hard upon the daughter, Mr. Oddie thought, but he admired her all the more for her self-sacrifice. She was an angel if ever there was one.

Miss Hexham became aware of his devotion; of that Mr. Oddie was convinced. When they met—and he took care that they did meet pretty often—he ventured to raise his hat, and smiles were exchanged. But there the affair halted, to the poor little man's frequent despair. He could get no "forrarder." Once, when he attempted to speak, Miss Hexham turned the color of a red rose, and promptly hurried away.

"I have never been properly introduced, that is why," was Mr. Oddie's anguished reflection. "She must have been exquisitely brought up; the very pink of propriety."

He grew quite thin and lost his appetite, which made Mrs. Roper regard him with concern, for he was a jewel of a lodger, and she did not want to lose him. She suggested a tonic, but Mr. Oddie knew that no tonic would help him—at least no medicine so called. He wanted a draught of the magic elixir of love to cure his complaint.

"Something will have to be done," cried the poor man, desperately, on the day that he went to the city without a tie, and an unfeeling acquaintance jeered at him and inquired if his liver were out of order. His liver! Perish the thought! It was his heart. He did not know that the first-mentioned organ was considered by the ancients to be the seat of the affections. Mr. Oddie would have consulted a friend had he owned one who would have sympathized with love's elderly dream and not laughed at it. But he decided at length that, like Hezekiah, he would ask for a sign from Heaven. He would send the object of his affection a bouquet, an anonymous bouquet of the choicest; she would surely guess from whom it came. If she placed it in the window, he would write to Mrs. Hexham, explain himself and his intentions and request permission to call.

Mr. Oddie took a holiday the day the

bouquet was sent off from Covent Garden; to sit still in his office was a thing impossible. He went for a long walk, but where his neat little legs took him he was never able to say.

The next day the agony increased; there was no sign. Mr. Oddie fell plump into the depths of despair, and was convinced that he had offended his lady love. He had not been properly introduced; the phrase became a perfect nightmare to him.

But the second day there was the bouquet in the window in all its glory, and, moreover, Miss Hexham was bending over it, inhaling its perfume. Mr. Oddie could see her wavy chestnut hair and white forehead. She was a beautiful woman, not too young for a man—ahem!—in his prime. The wonder was that such a treasure had not been snapped up before.

Markham Oddie wrote to Mrs. Hexham; it took him hours and hours to compose the letter, and it was the most delicious, old-fashioned epistle ever penned in a practical century. No nice woman could have read it without being touched. Two whole days elapsed before a little note came in reply:

"Mrs. Hexham presents her compliments to Mr. Markham Oddie, and would be pleased to see him, if he could make it convenient to call this evening between 8 and 9 o'clock."

The note was a formal one, but when the agitated little old bachelor was shown into the sitting-room at Holmwood, Mrs. Hexham, who was alone, received him with a very kindly smile. Her eyes looked as if she had been crying.

"Please take a seat," she said. "It has been very close all day, has it not?" "Terribly," answered the visitor. "Do you feel the heat much?"

"Yes, I am afraid I do," was the reply, and Mr. Oddie suddenly recollected that his future mother-in-law was said to be deaf and dumb. This lady was certainly neither.

"My daughter," said Mrs. Hexham, after a pause, "desired me to tell you how very, very grateful she is to you for your letter and the flowers. She has gone away for a short time to stay with friends. She—she thought it best."

Mr. Oddie sat there, unable to utter a word. "She had gone away, because she thought it best." That meant that there was no hope for him.

Mrs. Hexham's eyes filled with tears as she looked at him. "Oh," she cried, "I am so sorry—so very sorry! You are such a good, kind-hearted man, I am sure. Of course, you did not know, or you would not have thought of it." "Thought of what?" asked Mr. Oddie, heavily.

"Of marrying my poor Agatha. You did not know that she is deaf and dumb?"

Mr. Oddie stared at the speaker in blank amazement; it was fully a minute before he grasped the significance of what she was saying. It was the daughter, not the mother, who was "afflicted," as Mrs. Roper would have phrased it. Never once had this possibility entered Mr. Oddie's head. He was silent, and Mrs. Hexham continued:

"My poor girl is very sensitive, and your kindness went to her heart, I can assure you. I was to be sure and say that she would always keep the most grateful remembrance of you."

Mr. Oddie pulled himself together, and rose to his feet. At this moment there was something almost noble about his rather tubby little figure.

"Madam," he said firmly, "your daughter is an angel, and I love her. Will you have the goodness to give me her address—that is, if you will sanction my asking her to do me the honor to be my wife?"

Mrs. Hexham wiped her eyes and began to smile in an April-like fashion.

"It seems rather unconventional," she said; "but it is not exactly an ordinary case, is it? And I am sure you are a good man. Mr. Sedley, the vicar, was talking about you only the other day, and saying how charitable you were. Agatha has the sweetest disposition, and she is so quick you can hardly realize that she is not like other people. Indeed, I think you would be very happy together."

"I think we three would be very happy together," answered Mr. Oddie, emphasizing the "three." He took the widow's hand and kissed it with old-fashioned gallantry.

"Now," he said, "you must tell me where Miss Agatha is, and let me go and try my luck."

It is unnecessary to mention at what unearthly hour Mr. Oddie required his breakfast the next morning, or to state that he hardly ate a mouthful of it. Mrs. Roper began to wonder whether her lodger were under conviction of sin,



and mournfully to hope that the brand might be snatched from the burning, even at the eleventh hour.

In the afternoon of the same day Mrs. Hexham might have been seen reading a telegram, with a beaming face. It was not a long one, for it contained only five words: "Love from Agatha and Markham."—The Sketch.

Washing Woolen Blankets.

The theory now is that blankets must be washed instead of dry cleaned to be healthy. To have your blankets soft as new, make a soapy suds in a half-tub of warm water by using one-half cup of Gold Dust Washing Powder, and soak a blanket in it for half an hour; then simply move it around, and rub soiled spots; rinse in warm water, same temperature as the one in which you wash it, and hang up in a warm place or sunshiny out-door air, and see what a soft white blanket you will have.

"Well," said the woman with the umbrella, "I hope you'll look where you are going the next time." "Well, madam," said the man, "I'll try very hard with the one eye I have left."—Cleveland Leader.

"Some well meanin' folks," said Uncle Eben, "is so skait foh fear dey won't gib de devil 'is due dat dey clean ovuh-looks de fact dat some well-behaved human folks has claims to attention."—Washington Star.

Caller (to little Bobby)—"Bobby, what makes your eyes so bright?"

Bobby (after a little thought)—"I 'spects it's 'cause I ain't had 'em very long."

She—"What did papa say?" He—"I asked his consent to our marriage by telephone, and he replied: 'I don't know who you are, but it's all right.'"—Boston Transcript.

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The Young Folks.

LITTLE DAUGHTER DOROTHY.

For Kansas Farmer.
There's a dear little girl, the sweetest of
misses,
And she's nobody's sweetheart, nobody's
but mine;
For she climbs on my knee and reaches
me kisses
That are softer than blossoms and
sweeter than wine!

And her eyes, like the stars in the gray
morning sky,
Send joy to my soul as the sun sends
me light:
Ne'er a kiss she denies me, and always
have I
Her sweetest good morning and fondest
good night!

All the days of this life that are waiting
for me
I'll guard her and pay her my tribute
of love;
And when time shall have pass'd into eter-
nity,
I'll worship my God with my sweetheart
above!
Bendena, Kans. PATRICK L. GRAY.

THE ACHENSEE.

BY ANNA MARIE NELLIS.

NUMBER 76.

A few days rest at Jenbach was duly appreciated by our party, as we had been constantly engaged in city inspection for two weeks. We were now located away from the noise of wheels, and from city smoke. The little town has about 100 houses, and very many of these are dwellings of Tyrolean peasants or small farmers, who till an acre, or possibly two or three acres, if they are very rich and can afford such luxury. There seems to be no regular streets and the houses appear to be located "anywhere."

The Tyrolean peasant usually lives in a house constructed on the plan of that one occupied by the Irish lady, who lived in Ireland with the pig in the parlor. However, the Tyrolean are quite particular as to their associates, and will not permit the pig, nor the cow, nor the chickens in the parlor; but compel them to remain on the ground floor, while the family live upstairs above the cow-stable. If they should not have any "upstairs," then they insist that the animals and poultry shall occupy the left side of the "down-stairs" and they the right.

But the people are the most honest of any class I ever saw. They will argue with one a half-hour to prove that, in giving change, they have accidentally received a quarter of a cent too much. Their manner of dress was a continual pleasant amusement to me, and I enjoyed talking with the old women and the little children, who would tell me the name of each pig, chicken or goose in the house. The smallest child that can walk was dressed in the exact pattern of the suit worn by the parents—smaller pattern, of course, and each little girl was a miniature old woman.

Our house, however, was up on the mountain side, and has many modern improvements, as it was built for summer boarders. From our windows we had a most gorgeous view of many Alpine peaks. The one opposite my window is named "The Bride," for until mid-day its top is surrounded by a white mist, which is supposed to resemble a bride's veil. We heard the constant rush of the waterfall in the mountain stream which flows past the front of the house.

All the cottages on the mountain side above the little village are built like Swiss country homes and are called chalets. For two days we enjoyed mountain climbing, near our temporary home, rising early each morning to get the fine views of the sunrise. The important peaks we could see are named Brandjoch, Frauhitt, Seegrubenspitzen, Hafelekar, and Romerjoch. Possibly not so pleasing in sound as "Pike's Peak," "Gray's Peak," or Burnett's Mound, near Topeka, but still I was interested in learning their names.

On the third day a large party of Americans, including our Kansas folks, made an excursion on foot to the beautiful Achensee, the very handsomest and most charming lake in the Tyrol. We could have gone by cog-wheel cars, but that would not seem like climbing the Alps as that job should be done. Then, too, there are so many interesting points that one would wish to inspect, and a ride on the cars would prevent such enjoyment. There are pretty mountain chalets and "gasthofs" at every turn of the path, and each one invites a rest and gives opportunity to enjoy the mountain scenery.

The many crucifixes and "Madonnas" by the wayside show the religious char-

acter of the people, and offer the weary one a place for prayer while resting. I fear our worldly Americans failed to avail themselves of these many opportunities for serious meditation. When we had gone two miles from our hotel, we had ascended nearly 1,400 feet, and we came to a tiny chapel, just large enough to accommodate eight people at prayer, and we found four devout ones kneeling before the altar, which was only large enough to contain a small figure of the "Virgin and Child." Back of the altar was a small grotto, from which a clear spring of water flows down beside the chapel. There were three green glass windows, very small, and beside them on the wall were several stuffed birds, squirrels and other small mountain animals, which gave a variety to the room not often seen in a religious house of worship. This little spot is called Kirchenwirth, and is an objective point for many Catholic pilgrims, who come here to pray at the tomb of Saint Nothburga, who died in 1313, and was buried somewhere back in the grotto behind the altar.

A half-mile further on we approached a very handsome chateau, the home of a titled Austrian family, in summer-time. We did not have the pleasure of acquaintance with the people sojourning there, so we did not stop; but we did certainly admire the pretty place and the fine views to be had from it. This was the highest point we reached, and from this summer palace our path was slightly downward to the Achensee, two miles further on.

Four hours from Jenbach we reached the city of Seespitz (Point of the Lake), which consists of a "gasthof," garden and wood-shed. We dined at the gasthof in Seespitz, and then walked to Pertisau, which was the most important point for which we started in the morning.

The Achensee is five and one-half miles long and a half-mile wide, and is considered one of the very prettiest little lakes in all the Alpine region. Its water is neither blue nor green, but seems to reflect several colors, or strata of colors, from the bank outward and downward; so that, standing on the banks, one may see it as though several streams of water were quietly piled, side by side, the colors constantly changing as the waves reflect the sunlight. I thought it the very prettiest body of water I ever saw, but so I thought of the Danube at Regensburg.

Pertisau was our principal destination, because here Madame Careno, the great pianist, resides in summer-time, and we were to visit her for a couple of hours. Before we reached her chateau, she overtook us, having been out riding with her daughter Teresita, who is a beauty, like her mother, who is admired in all the large cities of America and Europe. Her home is a little chalet, surrounded by big trees. It is furnished simply, but has two Grand pianos, so we enjoyed delightful music with which Madame favored us on the shores of the beautiful Achensee.

The next day was Sunday, and we attended service at the little church in Jenbach, which is near our house. I asked our "frau" how old the church was, and she said it wasn't very old, as it was built in 1350. She seemed quite surprised when I told her that was over 100 years before we and America were discovered. Her idea seemed to be that Americans in America were like the Tyrolean in Tyrol, in that they always had been there.

The little church has its graveyard all around it, and the service we attended was a "recessional for the dead," the first I ever saw. The priest headed the procession and his assistants, carrying the sacrament, followed, and then all the congregation. We journeyed in and out among the graves, and after the "father" had blessed them all we filed into the church for morning mass.

In the afternoon an excursion party was formed to visit "Schloss Tratzberg," near Jenbach. This castle was built by Count Enzenberg, hundreds of years ago, and has 365 windows, one for each day in the year, leap year excepted. The Count was a very lazy man, so the story goes, and he had his bed-room constructed near the chapel, with an open hallway leading into the altar, so that he could lie in bed and hear mass without getting up. In this way he thought to be "carried to the skies on flowery beds of ease." But the "evil one" was constantly watching for him, and one time when the priest "wasn't looking," he threw the Count out of the window, who fell on the rocks, hundreds of feet below, and was no 'count after that—he was killed. There are three stains on the rocks, said to be of the Count's blood, which are shown as indicating where he fell out. The Castle

of Tratzberg has a fine, commanding view of the Inn valley. It is high above the village of Jenbach, and has a towering mountain for a background.

THE BRENNER.

When my friend Julius Caesar crossed the Rubicon he continued his way northward into Germany over the Brenner Pass; at least I think he did. He did not go by steam car, nor yet in wagon, for there was no path by which wheels could cross the Alps until nearly 1,800 years after. The Brenner is the lowest point in the Alpine chain of mountains where a road has been made possible from Northern Europe into Italy. For possibly more than twenty centuries, only on foot or horseback could people travel north or south over the rugged backbone of Europe; and during that time many thousands of warlike ones plodded over the Brenner path, for the delightful purpose of killing someone north or south of the range. We started to cross the Alps, but not on foot nor horseback.

In 1867 a railway was built over the pass, which performs as many curves, and hangs in the air in places, like the Union Pacific does in Colorado above Georgetown, where the world-famous "loop" was built. From Innsbruck to Botzen we passed through 22 tunnels, the first one of which was a half-mile long, while another, the Muehlbach, is nearly two-thirds of a mile long. When our train reached the Valserbach we had a fine view of an Alpine glacier, called the Tux glacier, and soon we are at the highest point reached by train on this route, the top of Brenner Pass; and here the train stops for a few moments to afford a view of two different streams—the one flowing northward into the Danube and thence to the Black Sea, the other southward into the Adriatic.

The Pass is only 4,490 feet high. In the Rocky mountains we would not consider that very much "for high." The Marshall Pass, if set beside the Brenner Pass, would overtop it by a little over one mile. But we had risen 2,500 feet in traveling a distance of 25 miles from Innsbruck. From Brenner we descended gradually, following the course of the Elsak river to Botzen, our next stopping place.

We were now on the southern slope

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of the Alps, and although still in Tyrol, a part of Austria, we found a country whose people were more Italian than German. Botzen has nearly 12,000 people, and a large majority of them speak the Italian language. Although we saw many of the peculiar costumes noticed in Innsbruck, we found that, generally, the manner of dress was different, and similar to what we afterward saw in Padua and other Italian cities. The streams run southward, and the business of the people is southward. But while their interests seem more Italian than Austrian, still the people are loyal to the northern government. We noticed the vine-covered foothills of the nearby mountains, and other signs of Italian vegetation and climatic variation were seen on all sides.

We were to devote only the time "between trains" to the interesting city. We went to the pretty park in the center of the city, and while enjoying a cool shade, we saw a fine monument to my old friend, whose acquaintance I had made in Innsbruck, Mr. Walther von der Vogelweide. He has been dead a long time, nearly 800 years, but he wrote several pounds of poetry (about the Philippines, and the soldiers' return, I suppose), and the Tyrolean have erected several monuments to him in various places.

We visited the interesting old church, built in 1519, with a tower 205 feet high; ate a good dinner at the hotel, named Walther von der Vogelweide, and at 2 p. m. we are again going southward, past the old city of Trient (where the "Council of Trent" was held hundreds of years ago), and shortly afterward we are really and truly in Italy.

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Annual cards in the *Breeders' Directory*, consisting of four lines or less, for \$15.00 per year, including a copy of *KANSAS FARMER* free.
Electros must have metal base.
Objectionable advertisements or orders from unreliable advertisers, when such is known to be the case will not be accepted at any price.
To insure prompt publication of an advertisement, send cash with the order; however, monthly or quarterly payments may be arranged by parties who are well known to the publishers, or when acceptable references are given.
All advertising intended for the current week should reach this office not later than Monday.
Every advertiser will receive a copy of the paper free during the publication of the advertisement.
Address all orders—
KANSAS FARMER CO., Topeka, Kans.

OUT IN THE WHEAT BELT.

Taking passage on the westbound fast mail Santa Fe train one morning last week, the writer proceeded to the center of the wheat belt of Kansas. The fields "arrayed in living green" present a prospect of "bread for the eater" never surpassed if ever equaled in Kansas. In Barton County there is evidence that the grasshopper had not lost his appetite at the time the wheat came up. The conductor is authority for the statement that the tooth of the hopper was vigilantly applied as far out as the western border of the wheat belt. But the diligence of the farmer was equal to the occasion and where the hoppers had destroyed a part of a field it had been promptly resown; the abundant moisture and the long continued mild weather had brought this late-sown wheat forward so as to afford assurance of a fine crop.

Western Kansas has not a sure thing on the corn crop. This year, however, nothing more is to be desired except that the stalks had grown strong enough to stand up under the weight of ears. One farmer, Mr. Amost Johnson, of Dartmouth, was caught in the act of husking 80 bushels to the acre, but most of the stalks had broken down. This same farmer harvested several thousand bushels of wheat and hundreds of bushels of apples, besides a fine crop of beef steers. His fish pond furnishes a fine variety of this kind of game for the table, besides a good measure of sport in angling for the artful dodgers.

Mr. Johnson has been an experimenter with forest trees. It was strange to see oak trees so far out in the short-grass country. But Mr. Johnson has them with the leaves clinging as tenaciously as in an Ohio forest. One white oak which was an acorn thirteen years ago now measures 13 1/4 inches in circumference at the base, 9 1/2 inches at 4 feet and 9 inches at 6 feet from the ground. A bur oak measured 9 1/2, 6 1/2 and 6 1/2 inches. These and several other oaks are thrifty and seem to be aspiring to become timber some day. Walnut is indigenous and of course does well. A 13-year-old measured 13 1/2, 11 1/2 and 10 1/2 inches and was estimated to be 22 feet high.

Barton County has one scheme which is peculiarly her own. The Cheyenne Bottom is a natural basin, about 40,000 acres in extent. The bottom of this basin is about on a level with the nearby valley land, from which it is separated by a comparatively high ridge. The fall of the Arkansas Valley is about 7 feet to the mile. A Colorado capitalist and irrigation expert saw in this situation an opportunity for a big enterprise. He would lead the waters of the Arkansas, from a point 16 miles above, through a ditch which, while having sufficient fall to insure suitable flow, would, on reaching the reservoir, be at the top of the ridge. This would discharge the water into the proposed lake with a fall of 30 feet. The ditch was constructed and the water was turned in. It flowed exactly as desired and spread itself over the bottom of the great basin. Most of the land in the basin is a dreadful gumbo and almost worthless. But there are some farms around the edges where good land is found. To avoid flooding these the head

gate was shut down. It is understood that the right to flood the entire basin will be acquired, by condemnation proceedings or otherwise. It is then proposed to fill the reservoir to such depth that 10 feet may be drawn off for use by irrigators. This will put 12 inches of water upon each of 400,000 acres of land. It is safe to say that when a regular supply of water shall be thus assured every acre for which it shall become available will be worth at least \$100.

The uncertainty of the flow of water in the Arkansas River has been regarded as fatal to the success of this great enterprise. It is conceded that there is plenty of water in the underflow. Indeed the underground Arkansas River is a slow-moving but immense stream, whose surface is about 10 feet below the land surface of the valley. But the problem of cheaply raising this water into a ditch has seemed too hard for the engineers. It has been generally understood that some genius was to solve this problem some time and in this expectation people are not to be disappointed if the plans of the Barton County people shall succeed.

It is proposed to make this water pump itself. At the head of the canal it is to be lifted through a height of 10 feet. When it reaches the reservoir, 16 miles away, it will fall 30 feet. The power that will be generated by this fall will be nearly three times as great as will be required to raise an equal amount of water into the canal at its head. The plan is to make the water as it shall fall into the reservoir drive water wheels; these in turn will drive dynamos. The electricity produced will be wired to the head of the canal, where it will propel electric motors which will drive great pumps. Once started by flood water or by other power this work will continue with no expense save for attendance and repairs. This is a perpetual motion scheme with which the most exacting scientist can find no fault. The margin between power required and power furnished is probably sufficient to pump enough additional water to irrigate all accessible land along the canal.

This great enterprise should and doubtless will be a profitable one. The land for which the water will be available is exceptionally fertile and is well settled by thrifty farmers who will gladly avail themselves of the opportunity to double the average yield of their crops and replace uncertainty with certainty. Experiments in the use of water along the canal have resulted most satisfactorily. One man reported a yield of 38 bushels per acre of irrigated wheat of the finest quality, while unirrigated wheat on adjoining land yielded only half as much and of inferior quality.

The people of the wheat belt are in a most cheerful state of mind. They are improving their farms with new buildings and fences; they are talking about new railroads and the price of lands is advancing.

A PORTENTOUS VISIT.

Emperor William, of Germany, has gone to England to visit his grandmother, the Queen of that country and Empress of India. The German people appear to be rather displeased with this seemingly sudden change to an attitude of extreme friendliness towards a country with which they were recently not sure of avoiding war. Perhaps the friendly relations of Great Britain and the United States, the strained relations of Germany and France, and the element of reserve on the part of Russia towards Germany has made the studious young Emperor feel that the sympathy of his kinfolks at this time will be unusually agreeable. While Wilhelm is one of the numerous grandsons of Queen Victoria, the relationship between his subjects and hers is the reverse of that of the sovereigns. The Germans are the grand parents of the English and the grand parents, and the parents' great grand parents of the Americans. "Blood is thicker than water." When alliances, at least virtual alliances, are forming—when the conquest of the world is being arranged by nations of European blood, it is natural that the people of one kindred shall array themselves together. The conviction that the Anglo-Saxon is going soon to conquer the world—the fact that the dominant element in Germany is of the same blood as the dominant element in England and the United States—the example set by England in her friendly overtures to her direct offspring, the United States—the example of Emperor Wilhelm in his manifestations of friendship to the English sovereign, can not but powerfully affect the German people in awakening them to the universal rearrangement of the world's alliances. Whether it ought or ought not to be it is growing clearer

almost every day that the Germanic peoples and the Slavonic peoples are soon to divide the dominion of the earth—possibly to contend for this dominion when other powers shall have been eliminated.

THE ALFALFA QUESTION AND SOME POINTS ON POTATOES.

The alfalfa problem, which has puzzled many an experienced farmer in the lower Kansas Valley, seems to have been worked out satisfactorily by at least one, whose method the *KANSAS FARMER* here gives for the guidance of those who wish to "do likewise." This method, though it may be practiced elsewhere, was originated in the vicinity of Rossville, by Mr. D. M. Howard, whose lead in farm matters is frequently followed, not only by neighbors but by a wider circle of acquaintances as well.

The difficulties of Kansas Valley sand and crab-grass were not overcome by Mr. Howard in a single bound, but required several years of expensive experimenting. Last year and this he has succeeded, and gives the following as what he believes to be the right way:

Sow the ground to millet—or a similar crop—which will leave the land free from weeds and can be gotten off before the middle of August. As soon as the crop is off disk the ground thoroughly, but not deeply, and harrow fine. Sow broadcast twenty-three pounds to the acre of good seed and harrow in. Unless a rain follows at once to settle the ground it should be firmed with a board drag. Mr. Howard has tried spring, summer, and fall sowing under various conditions and considers the month from August 15 to September 15 the best time in his locality, the attack of grasshoppers being the only serious obstacle yet to meet. Pasturing lightly after a good stand has been secured lessens the danger of winter-killing on loose, sandy ground, a danger which Mr. Howard also guards against by disking instead of plowing, so as to leave the ground below the surface as firm as possible.

The same push that started Mr. Howard to using registered Kentucky bulls twenty-five years ago and sent him to herds of Cruickshanks in later years has kept him seeking improvement in many other departments of his farm. One of these is potato-growing. Mr. Howard says he went to the New Orleans exposition for the points on mulching potatoes, but, as might be expected, it was a Kansan who furnished him the information after he got there. The method—practical only on a limited scale on account of difficulty in getting straw—is much the same as practiced in hilly and gravelly locations. Potatoes are planted in shallow furrows and covered barely an inch with soil. The mulching—preferably wheat or oat straw—is spread before the seed has time to sprout, twenty to twenty-eight loads being used per acre. Over 400 bushels per acre have been harvested from such a field, and Mr. Howard's yield this year was 350 bushels.

The meteoric shower which was to have occurred on almost any morning of last week failed to be more than a sprinkle. The writer was up at 3 o'clock on the morning of November 15 to take an early train. While dressing he saw one bright meteor dart forth from the center of the sickle. While going to the station two sparks were seen to fly from the same source. While waiting about 20 minutes for the arrival of the fast mail five were seen to dart from the same center. The last of these went directly west, was very bright and left a long train of bright blue fire in its path. These eight were undoubtedly Leonids. The astronomers have reviewed their calculations and have concluded that next November is the time to look for the great shower. So mote it be.

Vice-President Hobart died last Tuesday morning.

Government Crop Circular for November, 1899.

The following estimates, based upon the November reports, are merely preliminary and are subject to revision in the final report:

CORN.

The returns indicate an average yield of 25.2 bushels per acre, as compared with the preliminary estimate of 24.8 bushels in November last, of 23.7 bushels in November, 1897, and 24 bushels, the mean of the preliminary estimates of the last ten years. While the corn crop of 1899 promises to be one of the four largest corn crops ever raised, its excess above the average is by no means equally distributed among the corn-growing States. Of the six States whose

crops will each exceed 100,000,000 bushels, Indiana, Illinois, Kansas, and Nebraska report a yield in excess of their ten-year averages, Missouri falls 3 bushels per acre below such average, while Iowa reports about an average yield. The reports from twelve Southern States indicate a production of 85,000,000 bushels less than last year, and just as an exceptionally large production in these States last year appreciably increased the average for the country as a whole, so the present decline has perceptibly reduced it. The average as to quality is 87.2 per cent, as compared with 82.7 per cent last year, and 86.3 per cent in November, 1897. It is estimated that 5.9 per cent of the corn crop of 1898 was still in the hands of farmers on November 1, 1899, as compared with 7.25 per cent of the crop of 1897 in farmers' hands on November 1, 1898.

WHEAT.

The usual report on the wheat crop will probably be made on December 10, by which time the Department will be in possession of the results of the special investigation now being made in the principal wheat States.

BUCKWHEAT.

The indicated average yield of buckwheat is 17.2 bushels per acre, as compared with an average of 17.3 bushels per acre in November last, of 20.7 bushels in November, 1897, and with 16.5 bushels, the mean of the preliminary averages of the last ten years. The averages in New York and Pennsylvania, the two States of principal production, are 15 and 20 bushels per acre, respectively, as compared with 16.8 and 17.3 bushels, respectively, in 1898. The average as to quality is 88.4 per cent, as compared with 85.2 per cent in November last and 94.3 per cent in November, 1897.

COTTON.

The fact that the preliminary official estimate of the cotton crop has several times turned out to be an underestimate has been due in every instance to a failure to keep pace with the rapid expansion of the productive area. When, therefore, the very large crop of last year made it manifest that the acreage had increased beyond both official and almost all commercial estimates, it was determined to institute a special and very thorough investigation into the entire cotton situation this year. The productive area last year is found to have been nearly 25,000,000 acres, and that for the present year to be about 23,500,000 acres, with a probability that the final returns will show the present acreage to have been below rather than above the amount stated. The investigation discloses one of the smallest average yields per acre in many years, and in estimating the crop at a maximum of 9,500,000 bales, a substantial and most ample allowance is made for any tendency to take a too pessimistic view of the situation, the actual indications at the present moment pointing to a crop of less than 9,000,000 bales. By the Secretary's order the statistician has had control of the preparation of the United States cotton exhibit for the Paris Exposition, and his duties in that connection have afforded him additional facilities for ascertaining the actual condition of the crop in every part of the country. The evidence that has come to him in that capacity is in every way confirmatory of the most unfavorable official reports.

TOBACCO.

No average yield per acre for the entire country can be established, but in none of the principal tobacco-growing States is there any marked departure from the ten-year average. The tobacco crops of Connecticut, Massachusetts, Virginia, North Carolina, Ohio, Indiana, Kentucky, and Wisconsin appear to be slightly above the ten-year average, while those of New York, Pennsylvania, Tennessee, and Missouri are slightly below.

POTATOES.

The indicated average yield per acre of potatoes is 88.7 bushels per acre, as compared with 75.2 bushels last year, 64.6 bushels in 1897, and 75.2 bushels, the mean of the preliminary averages of the last ten years. The average per cent of quality is 91.4 as compared with 84.7 in November last and 81.3 in November, 1897.

SWEET POTATOES.

The average yield per acre of sweet potatoes is not only considerably below that of last year in almost every important sweet-potato-producing State, but is also below the ten-year average. The quality also compares more or less unfavorably with the ten-year average.

HAY.

The indicated average yield of hay

is 1.35 tons per acre, as compared with 1.55 tons last year, 1.42 tons in 1897, and 1.27 tons, the mean of the preliminary averages of the last ten years. There is a decided decrease in the rate of yield throughout the Eastern, East-Central, Southern, Southwestern, and Rocky Mountain States; in fact, it is only in Kansas, Nebraska, South Dakota, North Dakota, and the Pacific States that the yield per acre exceeds that of last year. Except in the States where the production is above the average, the quality also compares somewhat unfavorably with the average of a series of years.

SUGAR-CANE.

The production of sugar-cane, according to present indications, will be fully one-fourth less than last year. In Louisiana, the State of principal production, the falling off is 30 per cent, and in the other sugar-cane-growing States there is a reduction of from 15 to 30 per cent.

FRUIT.

The production of apples, grapes, and pears is expressed in percentages of a full crop and has been foreshadowed in prior reports.

INSURANCE ON LIVE STOCK.

EDITOR KANSAS FARMER:—I am a constant reader of your valuable paper, and am pleased to note the open manner in which the agricultural interests are discussed, and feel free to request the insertion of this note, in which is asked a development of the subject of "live stock killed by lightning." During the past season the stock reported killed by lightning has been alarming. Is there any plan suggested within the reach of the average farmer for protection? The rates charged by insurance companies are seemingly extortionate, or next door to it, and farmers can afford to carry their own insurance cheaper—at least that is the experience of most farmers in my own circumstances. Iowa has State and county mutuals which insure this class of property at a nominal cost to the insured, not to exceed one-half what stock companies charge. Why Kansas can not do what Iowa has done is not clear to me. Soldier, Kans., October, 1899. E. C.

This communication was referred for answer to the secretary of the Farmers' Alliance Insurance Company, of McPherson, Kans., who has developed the subject quite clearly, using his own company as an illustration. His discussion follows:

The brother from Soldier calls up a line of thought, which, if properly answered by those who can and should give information on the subject, can be made of immense benefit and interest to the readers of your valuable paper, which stands first, as I believe, for the interest of farmers of Kansas, and is ready to take up any subject for the interest and pecuniary benefit of its army of readers. I therefore feel fully warranted in answering the above inquiry and declaration in as brief a manner as possible.

Answering the query, in which is asked a "Development of the subject of live stock insurance, and why Kansas can not furnish as cheap an indemnity as Iowa's," I have to say: We can and do do it every day for Kansas farmers, and the following is one of fourteen mutual companies doing business in Kansas, which insures at actual cost to the insurer. In naming the company which meets the requirements, I do so, not in a boastful, but rather in a suggestive spirit, and if I shall have been able to add any information to the readers of the KANSAS FARMER, I shall consider the effort made as fully repaid.

The Farmers' Alliance Insurance Co., of McPherson, Kans., is 11 years old, during which time it has grown from a little township affair in 1888 until to-day it does business in almost every township of 88 counties in the State, and has issued during its lifetime over 27,000 policies, aggregating about \$18,000,000 in farm risks, and it ranks to-day as the second largest coöperative mutual fire, lightning, and wind-storm insurance company, doing a strictly farm risk business in the United States.

It is managed by a board of 15 directors from different parts of the State, 5 of whom are elected annually, directly by the patrons of the company.

The premium on the insurance is based on the hazard and kind of property insured, and is calculated on actuary tables used by the oldest mutuals in the United States, and is not widely different from standard stock companies.

The money to defray expenses and pay losses is raised by assessment, practically the same as in beneficiary life insurance companies, never more than the sum actually and necessarily required

to meet the demands on the company, being called in.

A note is taken for the premium at the time the application is written and one-fifth of the premium note is collected in cash, which is credited on the note. This sum is to start the insurance and pay agent's commission, reserve fund, and the secretary for issuing the policy, and from time to time during the life of the insurance, if necessary, the board of directors order so much of an assessment to be called in, as may be required to pay losses and expenses; thus leaving in the hands of the thousands of patrons the money until it is required. The statutes of our State throw around the association such protection as makes it impossible for it to fail.

The stability of the company is centered in a permanent reserve fund provided by law, consisting in a sum equal to 10 per cent of all premiums received. This fund and the premium notes make the sheet-anchor of the indemnity furnished. This fund is loaned on first farm mortgages in the name of the company.

The phenomenal growth of the company is due to two facts: First, the great saving in insurance premiums to its patrons, who appreciate the liberal terms offered, and feeling that they are at home and are going to be treated on an equality with every other member, they concentrate their influence in pushing a good thing along. The second great factor in the wonderful growth of the company, and its permanence, is due to our agents or solicitors. They are as fine a lot of men as walk on the soil of Kansas, whose energy, determination, and push are invincible, and only second to the faith which they have in coöperative mutual insurance, which deals justly and promptly with its patrons, in all cases of damage or loss.

While our brother from Soldier may never have heard of our company before we invite him to investigate our plan, and if he does not like it it will cost him nothing. We think Kansas can produce insurance as cheaply as any State in the Union, not excepting the State of Iowa, which has accomplished great things in coöperation and has astonished not only the East but also the West by her wonderful strides in farm mutual insurance. We understand that she has the proud distinction of possessing 170 county farm mutuals, with risks aggregating \$23,000,000.

Let Kansas wake up. Her citizens are the best on earth, and they should therefore have the best of everything, and plenty of it. Therefore let the word go round that there is plenty of room for the right kind of coöperative insurance in Kansas.

Answering the brother from Soldier, in reference to the question, "Is there a plan for insuring live stock against fire and lightning, that is not extortionate?" I wish to say, in a general way live stock insurance is considered by competent insurance authorities to be the most hazardous class insured as farm property. In consequence, some of our best mutual companies have eliminated from their policies the insurance of live stock, except while stabled.

The element of hazard in live stock insurance does not always end with fire, lightning, or wind-storm, but frequently reaches out and secures aids from dry murrain, blackleg, bloat, heel-fly, and such kindred enemies, which destroy animal life without always leaving a definite statement of the cause of death behind. Consequently when the carcass of the animal is found, lightning, being of a daredevil, reckless disposition, is charged with the crime. Be this as it may, one thing is certain, and that is that the company must pay the loss, or as consequence in refusing to pay, it will engender the animosity of the patron, who may, and often is, firmly of the belief that his animal was killed on schedule time and under the contract of insurance. Of course, rather than multiply words, the proofs are made out as best they can be under the circumstances, and the loss is paid.

The intention of the insurance companies was to make a rate against lightning, and which did not contemplate taking in the entire category of ailments peculiar to animal life, and any one of which might cause death.

There is a mutual company, I understand, which insures against all the disease contingency, but it does not insure against fire or lightning, and its rate is fully three times higher than is that of any reputed mutual company, and it may be that our friend may have come in contact with these rates, covering the entire list of ailments.

Many of the fancy stock-breeders find it most desirable to insure their fine stock, cattle or swine, in such companies, for they consider the premium paid for such insurance a mere baga-

telle as compared to the loss of valuable registered stock. But the ordinary farmer had best carry his own risks, when it comes to the regular farm stock, against disease.

Our company insures not to exceed \$200 on any one animal, and from this sum as low as you wish to go. The principle of our insurance is mutual. Every man gets what he pays for.

The company treats live stock the same as it does buildings—every head is considered a separate and distinct risk. It is unfair that a man, having 100 head of cattle, should insure only 25 head of them—no particular cattle being designated—and when lightning kills a few of course the ones killed are those insured. The injustice of this plan comes in by comparison.

Jones, who lives across the road also has 25 head of cattle, on which he carries insurance to their full value, and pays premium thereon. In addition thereto, he and his neighbors are obliged to pay premium on 75 head of cattle belonging to Smith on which there was no insurance, the owner having insured only 25 head. Both men having insured 25 head of cattle, from first appearances it would seem fair, but not so.

Compare the exposure. Jones places his stock in a pasture, and the insurance covers just 25 distinct risks, while the other man has 100 head and only has 25 head insured, but he furnishes 100 separate and distinct risks. He exposes the liability of the men who pay the assessments four times more than does Jones. Is it not fair then for him to pay on the number of cattle that he owns?

The question of live stock insurance has been an important subject during the last few years with many of the larger companies, for the reason that the losses have been something enormous, considering the premium paid. Our plan has been considered by several of the stronger neighboring State companies, and has met with great favor. The object of making the change from the one-half-value plan to the present plan, was to equalize the cost between the man who had his farm property but no live stock insured, and the man who had only a limited amount of stock insurance together with his farm property, and the man who had no farm property but live stock insured. This we believe we have succeeded in doing to a great extent to the satisfaction of nearly all our patrons.

The plan is simple and just, and is not calculated to require a lawyer to figure it out. It is so plain that any farmer can calculate its operation in a minute.

A. has 100 head of cattle on which he places \$2,000 insurance, at an average price of \$20 per head. This sum he receives in case of loss regardless of the value of animal. It may be on a calf a few weeks old. Some one asks, are you not entering into a degree of reckless speculation, by paying a man \$20 for a \$5 calf? No, not at all. He has paid premium on \$20, and is entitled to it, regardless of value. We are strong believers in the "valued policy law," so rigidly enforced by our worthy State superintendent of insurance.

Why should we not pay the amount the assured pays premium upon—be it a house or cattle? It matters not, as long as the loss has been a total one.

We also have a sliding adjustment, that measures the increase or the decrease of the herd or number. We will again call up the man with the 100 head, and say he has another loss, and at the time he owned only 50 of the original herd. His loss this time is a \$25 steer, but the adjustment keeps his interest constantly in view, just the same as it does the interests of those who pay the assessment (the company). That being the case we reason that as he has reduced his exposure by 50 per cent and is still paying on the 100 head, that we owe him 50 per cent more on the stock killed than we did when he insured, and on this basis he receives \$40 instead of \$20.

The regulation aimed at, and which so far has operated perfectly, is justice, if it is possible to make it by rules and regulations. The sliding scale operates in the opposite direction, in case the patron should increase his herd without taking out additional insurance. The company is at this time carrying 150,000 head of live stock, and up to October 1 has paid for 136 head killed by lightning.

"Deeds are Fruits, words are but leaves." The many wonderful cures effected by Hood's Sarsaparilla are the fruits by which it should be judged. These prove it to be the great remedy for all blood diseases.

Hood's Pills cure all liver ills, non-irritating.

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Bobby (after a little thought)—"I 'spects it's 'cause I ain't had 'em very long."

Guard your kidneys; the health of the body depends on those small but important organs. They extract uric acid from the blood, which if allowed to remain in the system would cause dropsy and Bright's disease. Prickly Ash Bitters is a successful kidney tonic, it heals and strengthens the kidneys, regulates the liver, stimulates the stomach and digestion, cleanses the bowels. It will prevent or cure Bright's disease.

New Through Pullman Service Between Denver and St. Louis.

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

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

THE ROCK ISLAND Playing Cards are the slickest you ever handled. One pack will be sent by mail on receipt of 15 cents in stamps. A money order or draft for 50 cents or same in stamps will secure 4 packs, and they will be sent by express, charges prepaid. Address, JOHN SEBASTIAN, G. P. A., C. R. I. & P., Chicago.

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Horticulture.

FIFTY YEARS OF AMERICAN GRAPES.

Brief Summary of T. V. Munson's Work with American Grapes.

BY T. V. MUNSON, IN AMERICAN GARDENING.

It is very embarrassing to have to say so much of my own work, as I now venture, but I believe that I have done work in the development of American grapes, which, if omitted from a treatise of this kind, would render it incomplete. Therefore I hope my readers will bear with me and will excuse what might to some appear as egotism on my part. I will depend upon what has been published by numerous persons, among them several horticulturists of Experiment Stations who have carefully tested a good many of my productions, for my apology. I believe it is my duty to give to the public some further knowledge of my work so that others can utilize it with that of my co-workers to carry forward a broad and complete development of American grapes. Like Rogers and Bull and Jäger, I, too, will soon be numbered among those who have ceased their labors.

THE FIRST STEP.

In the fall of 1873, when grapes were ripening, I visited my old professor in chemistry, Dr. Robert Peter, of Kentucky University, living near Lexington, Ky. He had a large vineyard containing most of the American grapes then in cultivation and made most of the crop into wine. He showed me through the vineyard, discussing the merits and weaknesses of the numerous varieties. The passion then seized me for experimentation among grapes, as I saw, what seemed to me, great opportunities for improvement by combinations. At my request the doctor gave me clusters of what kinds I cared to take, from which I saved the seeds and took them with me to Lincoln, Neb., where I planted them in the spring of 1874; but the adverse season allowed me not to raise a single vine from the seeds. My passion for the grape was not broken. I hunted out all the wild vines (*V. vulpina*) growing along the streams near Lincoln, where we had made our home, but droughts, blizzards, and grasshoppers destroyed nearly everything we grew, and in 1876 we came to Denison, Tex., where we have since lived.

Here I found the woods full of wild grapes belonging to no fewer than seven or eight species. Here were the Post-Oak grapes, the large fruited southwestern form of the *aestivalis*, but sufficiently distinct that the botanist Buckley gave them the specific name of *V. lincecumii*. They grew in profusion all over sandy, timbered uplands; many of them had large, fine clusters and berries, and were often of excellent quality. The vines were wonderfully healthy, vigorous, and prolific. Mustang grapevines, *V. candidans*, grew in the creek and river bottoms and along ravines of the black limestone lands to the tops of the highest trees, laden with large shining black berries in small clusters. I had found my paradise.

I took up the study of the grape genus under the guidance of Dr. George Engelmann, the leading authority in grape botany at that time. He recognized 13 species in the United States. I had determined to begin at the bottom and lay for myself deep and broad viticultural foundations. I found the botanical work a necessity in that case. I soon found there were species not classified by Engelmann and errors in classifying some that he had named. Then I determined to undertake a complete study of the genus *Vitis*—grapes—in America, with a view to making a complete and correct classification as far as my abilities, means, and time would permit.

PLANTS A VINEYARD AND REVIEWS THE GENUS.

I planted in a vineyard of several acres all the leading varieties of the North and South and began searching the woods for the best wild varieties. Each summer, for about fifteen years, during the grape season I spent many days riding horseback along the cow paths through the woods of all this section of the Red River belt, both in Texas and the Indian Territory, tasting tens of

thousands of different varieties, saving seeds of a few of the best, and marking their vines to be later transplanted into the vineyard for experimental purposes. I soon extended my travels in various directions over Texas, to the extent of thousands of miles. In the meantime I was establishing and carrying on a general nursery business. I soon found that the old northern varieties were poorly adapted to the South. I became acquainted with the work of Hermann Jäger, visited him in 1883, studied his vines and exchanged with him. In 1880 I had begun planting hybridized seeds, the first fruits of which appeared in 1883. I continued to travel and search, in person and by correspondence, in all sections of the country, for botanical and good variety specimens. Altogether I traveled extensively in no less than 30 States and Territories and into southern Canada, hunting wild grapes and other native fruit, visiting vineyards, collecting the best from every source, corresponding with hundreds of leading vineyardists, originators, and botanists. I visited and studied the leading grape herbariums in the United States, and made one of my own more complete than any other at the time in this country, and found that America had some 26 good species, instead of 13, as given by Dr. Engelmann. In the year 1887 I began the arrangement of my classification into species, from which Prof. P. Viala, of France, when in this country, on a mission from the French Government to investigate American grapes, took copious notes and embodied them in his large work on American grapes, "Une Mission Viticole en Amerique." Since then I have continued to add numerous facts and amendments to my classification and have, in a few instances, published outline skeletons of it, one of which was Bulletin 3, Division of Pomology, Department of Agriculture, entitled "The Classification and Generic Synopsis of the Wild Grapes of North America," published in 1890. I have made some amendments and additions to this classification since then. It has generally been adopted in this country.

THE BEST SPECIES AND THEIR ADAPT- ABILITIES.

With all the native species and leading varieties growing before me, I had most excellent opportunity of studying their comparative vigor, hardiness, healthiness, fruit characteristics, etc.; suggesting the most congenial and desirable combinations. Instead of confining my work to the *labrusca* and its hybrids with *vinifera*, as most northern experimenters have done, I realized that, to make our viticulture the broadest, the best, and the most enduring for all sections, we must select and breed especially for each section. To get all the desirable flavors and adaptabilities in vine and fruit it is necessary to use about 12 or 13 species besides *vinifera*—not all in one region, but to supply all sections, to each its best material. I would name such specific base of American viticulture as follows:

1. *Aestivalis*, illustrated in the Norton.
2. *Berlandieri*, illustrated in Millardet and others.
3. *Bourquiniana*, illustrated in the Herbemont, LeNoir, etc.
4. *Champini*, illustrated in DeGrasset, Barnes, etc., collected in woods of southwest Texas by T. V. Munson.
5. *Doaniana*, illustrated in Salt Creek, Ponroy, etc., collected in north-west Texas by T. V. Munson.
6. *Labrusca*, illustrated in Concord, Ives, Dracont, etc.
7. *Lincecumii*, illustrated in Jäger's 43, Munson's Big Bunch, Early Purple, Lucky, etc.
8. *Longii*, illustrated in Solonis, Hutchinson, etc.
9. *Monticola*, illustrated in Munson's Prolific.
10. *Vulpina* (*riparia*), illustrated in combination with *labrusca* in Clinton and Taylor.
11. *Rupestris*, illustrated in Jäger 60 and Munson's Buckshot, and Mammoth Male.
12. *Rotundifolia*, illustrated in Scuppernong, Thomas, James, etc.
13. *Simpsoni*, illustrated in Alachua, collected from Alachua, Fla., and Manatee, from Manatee, Fla.
14. *Vinifera*, illustrated in Black Hamburg, Muscat, Malaga, etc., to be used in hybrid combinations.

Now let us see how we can practically distribute these by knowledge of their special adaptabilities, for producing valuable varieties for fruit, in great variety, and a long succession.

For sandy soils and northern regions use *labrusca* and *riparia* as a base with *vinifera*, *lincecumii*, *rupestris*, *aestivalis*, *doaniana*, and *champini*. These all will endure 15° or more below zero,

**Woman's Best Friend
Dirt's Worst Enemy**



vulpina (*riparia*), of the far Northwest, as much as 40° and 50° below.

For limestone soils in the North, *rupestris* and *doaniana* will be found valuable, along with the hardier *vinifera* varieties and their hybrids.

In the Gulf States, all the 13 species can be employed and all but *rotundifolia* and *simpsoni* as far North as the Ohio River.

Those best adapted to sandy uplands in the South are *aestivalis*, *bourquiniana*, *lincecumii*, *simpsoni*, and their hybrids; to limy soils *champini*, *doaniana*, *monticola*, *berlandieri* and *rupestris*.

For graft stocks for *vinifera* varieties, to resist *phylloxera* in limestone soils in southern regions, the best are *Berlandieri*, *monticola*, *champini*, *doaniana*, *rupestris*, and hybrid combinations with each other. *Berlandieri* and *monticola* are difficult to grow from cuttings, but the most successful in very limy soils. The other three grow very readily from cuttings, hence a combination of *berlandieri* and *monticola* with them make a model graft stock for very limy soils. All, excepting *rupestris*, succeed well in dry, sandy uplands. For graft stocks in the North, in limy soils, use *rupestris*; for sandy soils, *vulpina*. Resistant graft stocks from America re-established the *vinifera* vineyards of France, hence belong to progress with American grapes. But, eventually, the grafting of grapes will probably cease, as the tendency now is, even in France, to get direct producers upon their own roots by making hybrids with the proper species for the different localities and soils, so much so that a journal, "The Revue des Hybrides Franco-Américains Producteurs Directs," is published for the purpose of stimulating this work. It has long seemed to me that we must have varieties of this character, and also that will resist the mildews and rots, so that we shall need neither to graft nor spray. There is native material that will accomplish this with proper handling and development, giving all needed varieties for market, table, and wine.

(To be continued.)

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Italian Bees.

Full colonies shipped any time during summer and safe arrival guaranteed. It will pay you to try my stock of Italian bees in the Latest Improved Hives Nothing will double in value quicker. A. H. DUFF, Larned, Kans

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TOPEKA, KANSAS.



In the Dairy.

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

THE BROWN SWISS CATTLE.

In response to an inquiry from one of our readers, we give herewith a short history and description of the Brown Swiss cattle. We have had no experience with this breed at the college, and the information here given is from various published accounts. If any of our readers have had any experience with this class of cattle we shall be glad to hear from them.

Origin.—The Brown Swiss cattle have been graded up from the common stock of Switzerland, and particularly from the Canton of Schytz. Their improvement has been the result of careful selection and slight in-breeding.

Importation to America.—In 1869 H. M. Clarke, of Belmont, Mass., imported a herd of seven cows and one bull. These were kept pure, and in twelve years increased to a number of nearly 200. Several importations were made in 1882 and 1883, and a number have followed since.

Description.—In color these cattle are chestnut bronze, and, like the Jerseys, have a mealy ring around the muzzle. The hoofs, tongue, nose, and switch of tail are always black. They have straight, broad backs, heavy legs and necks that give a general appearance of coarseness, but when examined closely they are found to be fine-boned for their size, and have a fine, silky coat with rich, elastic skin. The cows possess well-marked escutcheons, good udders, and yield good quantities of milk that tests 3½ per cent to 4 per cent butter fat. The milk of the Brown Swiss has a marked sweet flavor which makes it very desirable for family use. As to size, they may be classed as medium, the bulls weighing 1,700 to 2,100 pounds, and the cows from 1,100 to 1,300 pounds. The calves are large, some weighing 110 pounds when dropped. The cattle are active, good rustlers, thrifty, mature early, and are said to be especially adapted for dairying in the Western States. Excellent results are reported in grading up herds of common cows with the Brown Swiss bulls. As a breed they are easily kept and fatten readily when not in milk.

Performances.—In their native country many of the Brown Swiss cattle are fed on grass or hay only, the year through. Under these circumstances a fair average yield is 10 quarts of milk per day for the milking year. With good farm care they will give from 20 to 25 quarts per day. Two-thirds of the cows of this breed are said to average 6,800 pounds of milk per annum, that yields 325 pounds of butter. The best cows give from 10,000 to 11,000 pounds of milk, or 500 pounds of butter, in the same length of time. The cow Brienzi 168, shown at the Fat Stock Show in Chicago, November, 1891, gave in three days 245 pounds of milk that yielded 9.32 pounds butter fat, or 3.11 pounds per day, the largest daily yield of butter fat recorded at a public test from any cow of any breed in America. Another cow, Muotta, gave 67 pounds of milk in one day.

Prizes.—At the cattle show in Paris in 1878, every Swiss cow exhibited carried away a prize in competition with exhibits from Holland, England, and Denmark.

Distribution.—Up to October, 1897, there were 1,157 bulls and 1,714 cows recorded in the American herd-book of the Brown Swiss Breeders' Association. Of these 1,200 were living and owned by 175 different parties, living mostly in Massachusetts, New York, Illinois, Wis-

consin, Iowa, Minnesota, and Colorado. N. S. Fish, Groton, Conn., is secretary of the association.

The excellent cut that appears with this article is kindly loaned us by the Dairy and Creamery of Chicago, and represents a herd of typical Brown Swiss cows. D. H. O.

State Dairy Association.

The annual meeting of the State Dairy Association now in session at the agricultural college is distinctively a farmers' meeting. Men who have made from two to five times the usual amount from their cows are describing their methods. The methods that will get the most money out of the skim-milk, the buttermilk, the calves, and the hogs is being presented by our most successful Kansas farmers. Larger premiums for the exhibit of butter and cheese are being offered than have ever been offered before, and we have the largest exhibit of dairy apparatus ever held in the State. Many exhibitors are making fine electrical displays.

Music at every session by the college band, cadet band, college orchestra, Wagner symphony club, and mandolin and guitar clubs. The college students have four companies of infantry, a company of artillery, a signal corps, and a bugle corps. This is the largest military organization in the State and drills daily.

The college spends over \$15,000 a year in farm experiments, and an inspection of this work is more than paying many for the cost of the trip. The college herd of scrub cows gave last year nearly four times the average yield. These cows

ery man, the butter-maker, the cheese-maker and the milk-hauler. If you are not there you are missing a feast of good things. The next best thing for you to do is to read the proceedings, which will be published soon after the meeting. They will be full of valuable information for the dairy interests of the State. The KANSAS FARMER is getting the papers as read and stenographic reports of the addresses as given and sending them to the typesetter at once so as to publish the matter complete in the issue of December 7. Those unable to attend will find it to their profit to plan their work so as to have time to read the printed reports while they are fresh.

Alfalfa Experience.

The following notes are from S. M. Smith, Fredonia, Kans., one of the most successful alfalfa-growers of Wilson County. Mr. Smith claims to have solved the question of curing alfalfa, to which reference was made in last week's Farmer:

"In preparing the ground, do not let the grass go to seed the year before sowing. Plow the ground deep in the fall or early winter, and be sure to make a perfect seed-bed before planting. Sow at the rate of 20 pounds to the acre, and harrow lightly after sowing. Mow two or three times the first season. In the second season mow as soon as there is a sprinkle of blooms to be seen over the field.

"When the weather is threatening, my method of putting up alfalfa hay is not to wait until it is cured after cutting, but buy lime, spread it out in a dry room until it slacks, and then sprinkle it on

NEW 20TH CENTURY CREAM SEPARATORS



Sept. 1st marked the introduction of the Improved 20TH CENTURY "Baby" or "Dairy" sizes of De Laval Cream Separators and these newest "Alpha" disc machines are simply unapproachable by anything else in the shape of a cream separator. Overwhelming as has been the conceded superiority of the De Laval machines heretofore their standard is now raised still higher and they are more than ever placed in a class by themselves as regards all possible competition. Send for new catalogue.

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ulates the liver, stimulates the stomach and digestion, cleanses the bowels. It will prevent or cure Bright's disease.

New Through Pullman Service Between Denver and St. Louis.

On June 18 the Great Rock Island Route inaugurated through Pullman Sleepers between Denver and St. Louis via Kansas City and the Missouri Pacific R'y. East-bound car leaves Denver daily at 2:35 p. m. on the "Colorado Flyer," arriving in St. Louis 6:15 p. m. the next day. Westbound car leaves Kansas City daily on "Colorado Flyer," at 6:30 p. m., arriving in Denver



A HERD OF TYPICAL BROWN SWISS COWS.

are now under inspection. We have skim-milk calves 6 months old that have made an average gain of two pounds a day since birth. In fattening hogs we have made 25 to 40 cents per hundred pounds for the skim-milk fed. We have made 868 pounds of pork per ton of alfalfa hay fed, and 776 pounds of pork per acre of alfalfa pasture. It pays to come and study our methods. We raised this year 70 acres of a crop that stands drought as well as sorghum, is as rich a feed as linseed-meal, and fertilizes the ground on which it is grown at the same time.

Horticulturists are interested in the experiments in the orchards, vineyards, gardens, and in storing fruit. Men are studying our work in seed-breeding, in analyzing sugar-beets, and in saving soil moisture. The veterinary department is sending free, to all Kansas farmers who want it, vaccine that prevents blackleg. Dairymen and stockmen are seeing how this is made, and are taking what they need home with them.

Our work for students is interesting many. It is a treat to see the largest agricultural college in the world; nearly 1,000 students, 450 acres in experiments, and the largest college shops west of the Mississippi, worth \$54,000; a library of 20,000 volumes and 10,000 pamphlets, valued at \$50,000; well-equipped printing office; museums containing extensive collections of animals, insects, fruit, etc.

Ladies are particularly interested in our work for girls. They are visiting the domestic-science building and seeing the well-equipped kitchens, sewing rooms, and laboratories, with the exhibitions of cooking and sewing. The art department and the work of the 450 students is attracting no little attention.

Who are There.—The farmer, his wife, sons, and daughters, the cream-

the uncured alfalfa as I stack or mow it away. I used four barrels of lime this year in putting up over one hundred tons of hay, and although there was not a week of good haying weather in June and July I did not lose any by rain. At the present time I have 75 steers on full feed which receive no roughness but alfalfa cured with lime. I never had cattle to do so well. Curing alfalfa in this way keeps it bright and sweet, with no mold or must, and retains all the leaves. Stock of all kinds eat it with a relish."

A stock concern, under the name of the Kansas City Creamery Co., opened up for business last week at 553 Walnut street, Kansas City, Mo.

Guard your kidneys; the health of the body depends on those small but important organs. They extract uric acid from the blood, which if allowed to remain in the system would cause dropsy and Bright's disease. Prickly Ash Bitters is a successful kidney tonic, it heals and strengthens the kidneys, reg-

11 a. m. next day. This is the fastest through car line between Denver and St. Louis. The cars are broad vestibuled, of the latest pattern and most luxurious type. Advantages in patronizing this service will be: The quickest time, no change of cars, absolute comfort. The best Dining Car Service in the world. For full information see your agent or write

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

Madge—"I always select tragic stories for hot weather reading." Mabel—"On what principle, dear?" Madge—"They make my blood run cold."—London Tit-Bits.

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Least in cost, greatest in economy, simplicity, durability; slow speed, so little power required, and easy to operate. Only two parts to clean, which can be done in 3 minutes. No possible clogging in the bowl. An all around machine of highest quality. Guaranteed to satisfy, or your money back.

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We also manufacture
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Write for our latest illustrated catalogues,—Free.

VERMONT FARM MACHINE CO., - Bellows Falls, Vt.

MARKET REPORTS.

Kansas City Live Stock. Kansas City, Nov. 20.—Cattle—Receipts, since Saturday, 1,085; calves, 8,877; shipped Saturday, 1,824 cattle; 382 calves. The market was steady and fairly active. The following are representative sales:

Table with columns: No., Ave. Price, No., Ave. Price. Rows include DRESSED BEEF AND SHIPPING STEERS, WESTERN STEERS, COLORADO STEERS, IOWA STEERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include TEXAS AND INDIAN STEERS, WESTERN COWS, TEXAS AND INDIAN COWS, NATIVE HEIFERS, NATIVE COWS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include NATIVE FEEDERS, NATIVE STOCKERS, STOCK COWS AND HEIFERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Hogs—Receipts since Saturday, 5,263; shipped Saturday, 70. The market was 3/4 to 5c higher, with exceptions only a shade stronger.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Sheep—Receipts since Saturday, 1,497; shipped Saturday, none. The market was steady.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Chicago Live Stock. Chicago, Nov. 20.—Cattle—Receipts, 21,000; choice grades in demand; others steady to 10c lower.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include St. Louis Live Stock. St. Louis, Nov. 20.—Cattle—Receipts, 2,500; market steady; native shipping and beef steers.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Chicago Grain and Provisions. Chicago, Nov. 20.—Wheat—Receipts here to-day were 98 cars; a week ago, 136 cars.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Kansas City Grain. Kansas City, Nov. 20.—Wheat—Receipts here to-day were 98 cars; a week ago, 136 cars.

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mixed, 28c; No. 4 mixed, nominally 28 1/2c; no grade, nominally 27 1/2c. White, No. 2, 29c; No. 3 white, 29c; No. 4 white, nominally 28c. Oats—Receipts here to-day were 27 cars; a week ago, 11 cars; a year ago, 13 cars. Sales by sample on track: Mixed, No. 2, nominally 23c; No. 3 mixed, 22 1/2c; No. 4 mixed, 23 1/2c. White, No. 2, 23 1/2c; No. 3 white, 23 1/2c; No. 4 white, nominally 23c. Hay—Receipts here to-day were 73 cars; a week ago, 125 cars; a year ago, 65 cars. Quotations are: Choice prairie, \$7.25@7.50; No. 1, \$6.50@7.00. Timothy, choice, \$8.50@9.00. Clover, pure, \$6.50@7.25. Alfalfa, \$7.00@8.00.

Chicago Cash Grain. Chicago, Nov. 20.—Wheat—Cash, No. 2 red, 68 1/2c; No. 3 red, 65c; No. 2 hard winter, 64 1/2c; No. 3 hard winter, 60c; No. 1 northern spring, 68 1/2c; No. 2 northern spring, 66 1/2c; No. 3 northern spring, 61 1/2c. Corn—Cash, No. 2, 32 1/2c; No. 3, 31 1/2c. Oats—Cash, No. 2, 23 1/2c; No. 3, 23 1/2c.

St. Louis Cash Grain. St. Louis, Nov. 20.—Wheat—Cash, No. 2 red, elevator, 69 1/2c; track, 70 1/2c; No. 2 hard, 66 1/2c. Corn—Cash, No. 2, 30 1/2c; track, 31 1/2c. Oats—Cash, No. 2, 23 1/2c; track, 24 1/2c; No. 2 white, 23 1/2c.

Kansas City Produce. Kansas City, Nov. 20.—Eggs—Strictly fresh, 15 1/2c per doz. Butter—Extra fancy separator, 23c; firsts, 20c; dairy fancy, 18c; store packed, 15c; country roll, 15 1/2c; packing stock, 13c. Poultry—Hens, 5c; roosters, 15c; ducks, 5 1/2c; geese, 5c; turkeys, hens, 6 1/2c; toms, 6 1/2c; pigeons, 60c per doz. Vegetables—Beans, \$1.25@2.00 per bu. Hubbard squash, 40c@1.00 per doz. Pumpkins, 35c@50c per doz. Turnips, 35c@40c per bu. Onions, 55c@65c per bu. Cabbage, home grown, 50c@85c per doz. Potatoes—Home grown, 25c@35c per bu.; Kaw valley, sacked, 25c@35c per bu. Sweet, 40c@60c per bu. Apples—Choice to fancy, \$3.00@4.00 per bbl.; fair to choice, \$2.00@3.00 per bbl., 65c@1.00 per bu.; culls and wind falls, 25c@40c per bu. Game—Ducks, canvas back, \$4.00 per doz.; mallard, fat \$4.00, common, \$3.00@3.50 per doz.; teal, fat \$2.25, thin \$1.50@2.00, mixed \$1.25@1.50; red heads, \$2.50; plover, \$1.00; frogs, 35c@42.00. Rabbits, jack 75c@1.00, cottontails 60c@75c. Squirrels, 60c@75c.

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100 HEAD FOR SALE. CONSISTING OF 32 BULLS, from 12 to 18 months old, 21 2-year-old HEIFERS, the get of Wild Tom 51292, Kodax of Rockland 40731 and Stone Mason 13th 42397, and bred to such bulls as Wild Tom, Archibald Y 54433, Imported Keep On 76015 and Sentinel 76063, Java 64045. 40 1-year-old HEIFERS and 7 COWS. These cattle are as good individuals and as well bred as can be bought in this country. Finding that 400 head and the prospective increase of my 240 breeding cows is beyond the capacity of my farm, I have decided to sell the above-mentioned cattle at private sale, and will make prices an object to prospective buyers. Address C. A. STANNARD, Emporia, Kans.

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The Weavergrace Past is Sealed With the Approval Of America's Stockmen. The Weavergrace Future Promises A Record Excelling All Previous Achievements.

The Weavergrace present will bear the closest investigation and comparison. No Hereford is too good for Weavergrace. Neither time, labor, money nor any other factor within our reach will be spared in an open, honest, energetic effort to make the WEAVERGRACE HEREFORDS the best herd of beef cattle in the world. Nothing from the herd offered privately. All reserved for annual spring auction. Three hundred and sixty-four days of the year devoted to the general Hereford interests, one day to the sale of the Weavergrace Herefords. I have an Unrivaled List of registered Herefords (both sexes) and of grade Hereford steers and fem ales on file for sale throughout the country, in my office, New York Building, Chillicothe. There are several great bargains. All are invited to inspect this list, and spend a day at Weavergrace. T. F. B. SOTHAM, Chillicothe, Mo. Hereford literature on application; also a colortype reproduction (1822) of an "actor" of Cor-

The Poultry Yard

Coming Poultry Shows.

Secretaries of poultry associations are invited to send announcements of coming poultry events for publication in this column.

Harvey County Poultry Association—E. R. Hobbie, secretary; C. H. Rhodes, judge, Newton, Kans., December 4-9, 1899.

Southern Kansas Poultry and Pet Stock Association—Sealy L. Brown, secretary; L. P. Harris, judge, Coffeyville, December 11-14.

Associated Fanciers of the Arkansas Valley—Mrs. H. P. Swerdfefer, secretary; W. S. Russel of Iowa, Judge, Wichita, January 1-6, 1900.

Kay County Poultry Association—Geo. M. Carson, secretary; H. B. Savage, judge, Blackwell, Okla., January 17-20, 1900.

Butler County Poultry and Pet Stock Association—John C. Hoyt, secretary; J. C. Snyder, judge, Eldorado, Kans., December 26-30, 1899.

THE PROFITABLENESS OF DUCK CULTURE.

NELLIE HAWKS, IN POULTRY WEST.

Adding duck culture to that of chick-rearing was long contemplated before indulged in. And the reason for so long delaying the contemplated step was the fear that in adding another care it would certainly prove the "feather's weight" that I felt I could not bear—so many were the "irons" already in the fire. But how I have since regretted that I did not add them to the poultry plant so long ago established, even some years ago.

TAKE UP THE DUCK.

I am ready to advise every woman who lives on a farm to take up duck culture. She will find them such a source of profit, and so little care. We had never anything to grow so rapidly into money as have our ducks since beginning to handle them. Beginning with the best and thriftiest stock, the ducklings were strong from the shell to maturity, and of independence, we never saw a greater example. Ducks hatched by hens were taken from them in less than two days, and the ducklings were raised by hand. In truth, all they required of us was plenty of food and good shelter. For a few days they were confined in pens of ample dimensions, but very low—the wire composing said pens is but a foot in height, and is of the kind known as "baby-chick wire"—small in mesh.

DUCKLING MANAGEMENT.

At night they were divided into small companies and put into boxes well bedded with straw, and over each box was thrown a piece of old wool carpet. This kept them warm, and they snuggled down in perfect comfort, and grew so rapidly that we could fairly see the growth they had made as we liberated them each morning.

When the weather was damp and chill, we kept them confined. Ducklings of "tender age" are indeed very tender little things, and can no more endure exposure to rain and dampness than can the chicks. They will quickly chill to death, but as soon as the sun comes out again, they are ready to go foraging, and thrive and wax strong and fat at an astonishing rate.

DUCKS AND WATER.

Their quaint ways are an every-day amusement. We never grow tired watching them. They are annoying in ways to be sure. Yet the only fault one can find with them is their disposition to monopolize every drop of water in sight. They can not endure to have the fountains kept clean for the use of hens and chicks. It matters not how many dishes of water may be given over to themselves, they are still determined to have their dirty, muddy bills in every dish of water within reach. The only right and entirely satisfactory way to handle them is to have them yarded in large parks where they can not get out, and where other fowls can not well get in. But every one who makes the attempt in duck culture will be ready to extend operations, and to build or add to the duck plant, rather than to discard them or lessen the undertaking. For there is such a profit, as well as such a satisfaction in it all.

TWO HUNDRED DUCKS.

"Two hundred ducks next season," says the owner of the farm where I have been raising my choice biddies for years. For he has enjoyed them every day since they came to live at our White Flock Farm. Not very much of a fancier have I ever been able to make of him until of late. But he is quite filled with enthusiasm this season, and promises great things for another season in chick-rearing and the handling of ducklings. Always an advocate of "chickens on the farm," he has yet failed to "enthuse" to the extent of taking a hand in the breeding, hatching, and feeding.

But many things have gone to prove

the wisdom of giving less attention to the field crops, and more attention to the crops of poultry. And thus have we gone to planning and to preparing for extended poultry operations for the years to come. Thus does it also happen that we can add duck culture quite extensively to the work at present in hand. And thus it happens that it is the present intention to rear ducklings by the hundred, as well as chicks.

A large park will be enclosed for ducklings, and then sub-divided into runs for ducklings of different ages. The breeding stock will have also their own parks, and arrangements for water for the breeding stock will be carried out. It is the generally accepted impression that breeding fowls (ducks) not having access to water will produce but an indifferent per cent of fertile eggs, but that for ducklings only sufficient water for drinking and bill-puddling purposes is necessary.

NO LICE ON DUCKS—FEEDING.

With ducks we have never known a particle of trouble or uneasiness because of lice. We fed them corn bread and milk curds at first. But their appetites became such at last that no one person could furnish sufficient of such foods to them. So they were treated to ground grains moistened with sweet milk, mixed with animal meal and things of like nature. We read of the necessity of cooked foods for ducks entirely, while they were making their growth. But we did not follow out the instructions. And how ducklings could grow faster than ours did we can not see.

FEATHER HARVEST.

The picking of duck was an entirely new departure in business for us. We were just sure that we could never sufficiently steel our hearts to make a success of feather plucking. But it seemed a shame to find such handfuls of feathers going to waste as were found in their sleeping rooms every morning, when they were preparing to off with the old suits and on with the new ones. So we took it upon ourselves to assist them in disrobing. We had pillows in plenty and cushions galore. Yet a housewife always finds a place for more pillows and cushions, and she is quite apt to go castle-building in her poultry affairs if she has geese and ducks, and gets to counting her feather beds even before they are hatched.

We have not arrived at the feather bed stage of our duck culture enterprise as yet. We have not a doubt that we shall, though. For first attempts at duck picking were so fruitful and altogether encouraging, that when Mr. H. declared in favor of 200 ducklings at least next year, and hinted at the probability of a few hundred more than that of White Pekin ducklings, we were very ready to say yes.

But we stipulated either himself or a band of hired "pickers" should have the task of robbing the ducks of their feathers. For it is work, and lots of work. But we felt well repaid for the time and labor expended when, after they were thoroughly scalded and washed (the feathers, not the ducklings), we found we had a bountiful supply of purest white and fluffiest downy feathers.

And next year we shall raise ducklings by wholesale. We regret that we were so long finding out the comfort, ease, and profit of duck culture. Do not take so long to make yourselves familiar with the pleasant and profitable employment. Add speedily, sister friends, of White Pekin ducks to your poultry plant.

Poultry Items.

A very good way of managing late turkeys is to allow them a free range, but feed sufficiently to keep in a good thrifty condition, and then market after the holiday season may be considered over. During the winter turkeys are salable and it often occurs that better prices can be realized during the latter part of winter than at any other time.

In seeking to improve the fowls on the farm by using full-blooded males by some standard breeds, care must be taken to discard all of the old roosters, or a good part of the possible benefits will be lost. On the farm one of the cheapest and best ways of improving the poultry is by purchasing good roosters of the desired breed and selling off all of the scrubs, but in doing this every one of the scrub roosters must be got rid of.

The advantage in grinding food for poultry largely consists in being able to make a better mixed and more complete ration. Outside of this, except with young fowls, the whole grain is just as good as the ground. Generally in feeding ground grain it is best to wet up with milk or water, as the fowls can eat

Rheumatism

A slight indefinite pain in the joints is the first sign of Rheumatism. When you feel this warning sign take Dr. Williams' Pink Pills for Pale People and the progress of the disease will be arrested. This remedy acts directly on the blood and nerves and has cured hundreds of cases of rheumatism that have been declared hopeless by physicians.

See that the full name is on every package:

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Mrs. Mary Rixton, of Barryville, Sullivan Co., N.Y. She says:

"About two years ago I had a severe attack of rheumatism. I suffered acute pain and much inconvenience. Physicians were unable to check the disease, and I was directed to a similar case, which was cured by Dr. Williams' Pink Pills for Pale People. My son bought me some of the pills and the first box did me so much good that I procured another box and those two boxes of Dr. Williams' Pink Pills for Pale People cured me."

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

Dr. Williams' Pink Pills for Pale People are sold by all dealers, or will be sent, postpaid, on receipt of price, 50c. a box or six boxes for \$2.50 (they are never sold in bulk or by the 100) by addressing Dr. Williams Medicine Company, Schenectady, N. Y.

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DES MOINES, IOWA.

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it better than if fed dry. Oats, corn, wheat, rye, and buckwheat may all be ground, and even sorghum seed, and a mixture of different grains will give better results than any single one.

Roup may usually be traced to want of cleanliness, lice, dampness, or exposure to wet, cold weather, or roosting exposed to a draft, yet to some extent it may be due to breeding to stock or fowls that have had the disease and got over it. Many good breeders insist that a fowl that has had a bad attack of roup should never be used as a breeder on account of the tendency of entailing trouble for the offspring. Prevention is better than a cure, and one help in preventing it is to never keep fowls for breeding that have had the roup.

With both ducks and geese wintering is expensive. So long as they can have a free range they will be able to pick up a good part of their food as long as there is good pasturage, but from this time on they must be fed daily, and they are voracious eaters. On this account it will usually be found a good plan to market all except what are wanted for breeding or feathers. With geese the feathers are an important item of income and a flock of old geese may bring in good returns. It is usually best to market the young geese and keep the old, as they yield more feathers and are more reliable breeders, keeping one gander for an average of every three geese in order to secure good results in hatching. With ducks one drake and five or six ducks will furnish eggs sufficient to hatch out a large flock, so that it is a loss to attempt to winter too many. Fatten in good season and market all not wanted to keep through the winter. N. J. SHEPHERD, Eldon, Mo.

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The following real estate belonging to the estate of David R. Youngs, deceased, in sections 26 and 27, township 12, range 15, Shawnee County, Kansas, is offered for sale upon the following terms and conditions:

1. The "Home" place, containing about 161 1-3 acres with good house and barn and other improvements too numerous to mention. A first-class farm. Price, \$6,700.00.
2. Eighty acres first-class land; about one-half plow land and balance good prairie-hay land. Price, \$3,000.00.
3. About 101 acres pasture land, well fenced and watered. Price, \$18.00 per acre.
4. About 101 acres first-class prairie-hay land. Not for sale until tract No. 1 is sold. For sale with No. 1, at \$25.00 per acre. For sale separately after sale of No. 1 at \$25.00 per acre, or with tract No. 3 at \$21.00 per acre for both.
5. All of the above land, amounting to about 443 acres and lying contiguous and constituting a large, complete and well improved crop, fruit and stock farm, situated about seven miles southwest of Topeka near the Burlingame road, for \$13,800.

TERMS OF SALE—One-third cash, one-third in two years and balance on long time. Interest on deferred payments at 6 per cent per annum, secured by mortgage. Possession given March 1, 1900, if sold before January 1, 1900.

COMMISSION ON SALES—To any one making a sale I will pay a commission of 5 per cent on any amount not exceeding \$3,000.00, and 3 per cent on any amount in excess of \$3,000.00 derived from any sale. Sales must, however, be made and reported by December 30, 1899.

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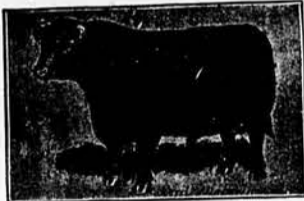
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