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TABLE OF CONTENTS.

PAGE 338—THE STOCK INTEREST.—The Feeding of Farm Animals (continued).
PAGE 339—AGRICULTURAL MATTERS.—Wheat and Silver. Effects of Subsoiling—Potatoes. Paid the Mortgage.
PAGE 340—IRRIGATION.—Collection and Storage of Water in Kansas (continued). Soil Moisture.
PAGE 341—Learned His Lesson. Our 1896 Platforms. A Novel Scheme. Campmeetings.
PAGE 342—THE HOME CIRCLE.—The Supper of St. Gregory (poem). How Jack Made His Fortune. Fancy Work Basket. Top Bureau Drawer.
PAGE 343—THE YOUNG FOLKS.—Learning to Sew (poem). Change (poem). The Great Walkolin. Jack Hare, Not Jack Rabbit. Strength of a Jumping Mouse. Caging Wild Beasts. Respectful Pussy.
PAGE 344—EDITORIAL.—Valuable Bulletins. Why the Sacrifices of the Soldier? Coburn Appreciated. Erratic Wheat. Boon Coming.
PAGE 345—EDITORIAL.—Fighting Insects and Fungi. Weekly Weather-Crop Bulletin.
PAGE 346—HORTICULTURE.—What Trees Succeed in Western Kansas. Thayer's Berry Bulletin for June, 1895. Weather vs. Injurious Fungi... Effects of the Cool Weather.
PAGE 347—THE POULTRY YARD.—Swallowed an Egg Whole. Preserving Eggs—Feeding. Some Important Items... IN THE DAIRY.—Cow vs. Horse. Rat Fat for Butter. Oleo Law in Missouri. Imitation Butter. Milk and Farm Fertility. Find Which Are The Profitable Ones. "As Good as Butter."
PAGE 348—Gossip About Stock. Publishers' Paragraphs.
PAGE 349—THE VETERINARIAN....Market Reports.
PAGE 350—THE APIARY.—Bees and Their Ways. The Color of Beeswax. Hints for Bee-keepers.

BREEDERS' DIRECTORY.

Cards of four lines or less will be inserted in the Breeders' Directory for \$15 per year or \$8.00 for six months; each additional line, \$2.50 per year. A copy of the paper will be sent to the advertiser during the continuance of the card.

HORSES.

PROSPECT FARM—CLYDESDALE STALLIONS, SHORT-HORN CATTLE.
POLAND-CHINA HOGS.
Write for prices of finest animals in Kansas. H. W. McAfee, Topeka, Kas.

CATTLE.

PEDIGREED Holstein. M. H. Alberty, Cherokee, Friesians.
VALLEY GROVE HERD OF SHORT-HORNS.—For sale, choice young bulls and heifers at reasonable prices. Call on or address Thos. P. Babst, Dover, Kas.
NEOSHO VALLEY HERD OF SHORT-HORNS.—Imported Buccaneer at head. Registered bulls, heifers and cows at bed-rock prices. D. P. Norton, Council Grove, Kas.

ENGLISH RED POLLED CATTLE AND COTSWOLD SHEEP.—Young stock for sale, pure-bloods and grades. Your orders solicited. Address L. K. Haseltine, Dorchester, Green Co., Mo.

SWINE.

FANCY Poland-China. J. H. TAYLOR, Pearl, Boars and Gilts. Kas.

FOR SALE—Duroc-Jersey pigs; also Poland-China. Bronze turkeys, Toulouse geese, Pekin ducks. Bred Plymouth Rock and Brown Leghorn chickens. Ready to ship out. J. M. Young, Liberty, Kas.

V. B. HOWEY, Box 103, Topeka, Kas., breeder and shipper of thoroughbred Poland-China and English Berkshire swine and Silver-Laced Wyandotte chickens.

OHIO IMPROVED CHESTER SWINE—Pure-bred and registered. One hundred spring pigs at hard times prices. Also a few boars ready for service. H. S. DAY, Dwight, Morris Co., Kas.

MAPLE GROVE HERD OF FANCY BRED Poland-China swine. Also Light Brahma fowls. Owned by Wm. Plummer & Co., Oange City, Kas. Stock of all ages for sale at reasonable rates.

D. TROTT, Abilene, Kas.—Pedigreed Poland-China and Duroc-Jerseys. Also M. B. Turkeys, Light Brahma, Plymouth Rock, S. Wyandotte chickens and R. Pekin ducks. Eggs. Of the best. Cheap.

SWINE.

FOR SALE CHEAP—Choice Poland-China boar pigs, Cotswold and Merino bucks, fifteen varieties of pure-bred poultry. Prize-winners. No catalogue. Address with stamp, H. H. Hague & Son, Walton, Kas.

A. W. THEMANSOON, WATHENA, KAS.—Poland-China boars. Gilts bred to Graceful F. Sanders; he is by J. H. Sanders 27219 and out of Graceful F. 63408, by A. A., by Black U. S. Sire and dam both first-prize winners at World's Fair and descendants of Black U. S.

POLAND-CHINAS.—Dietrich & Gentry, Richmond, Kas., have a fine lot of fall boars and sows and two very fine young sows bred that they will sell cheap. Breeding choice. Quality guaranteed. Write or come and see us.

CATTLE AND SWINE.

ASHLAND STOCK FARM HERD OF THOROUGHbred Poland-China hogs, Short-horn cattle and Plymouth Rock chickens. Boars in service, Admiral Chip No. 7919 and Abbottsford No. 23351, full brother to second-prize yearling at World's Fair. Individual merit and gilt-edged pedigree my motto. Inspection of herd and correspondence solicited. M. C. Vansell, Muscotah, Atchison Co., Kas.

POULTRY.

PURE-BRED LANGSHAN AND BARRED PLYmouth Rock eggs, one dollar per thirteen. Address Robert Crow, Missouri Pacific Railway Agent, Pomona, Kas.

EGGS BY MAIL—Are not allowed, but I will send eggs by express from Buff Leghorn, Buff Plymouth Rock or Silver Wyandottes at \$1.50 per set ting. F. H. Larrabee, Hutchinson, Kas.

EGGS FOR HATCHING.—White Holland turkey, \$1.25 per 13; White Guinea and Plymouth Rock, 90c. per 13. Mark S. Salisbury, Independence, Mo.

FIRE BURNED MY HOME—And all my grain January 24, so I will sell eggs from Knapp station S. C. White Leghorns, \$1 per thirteen, \$2 per thirty. J. R. Cotton, Stark, Neosho Co., Kas.

A. B. DILLE & SONS, EDGERTON, KAS., breeders of choice B. P. Rocks, S. L. Wyandottes, Light Brahmas and M. B. turkeys. Chicken eggs \$1 to \$2 per 15; turkey eggs \$3 per 11. Satisfaction guaranteed.

EUREKA POULTRY YARDS.—L. E. Pixley, Emporia, Kas., breeder of Plymouth Rocks, S. Wyandottes, Buff Cochins, B. and White Leghorns, B. Langshans, M. B. Turkeys and Pekin ducks. Chickens at all times. Eggs in season.

EGGS, SIXTY-FIVE CENTS FOR THIRTEEN. Combination best strains Barred Plymouth Rocks, Black Langshans, Buff, White and Brown Leghorns. For sale, young stock from Wren's Poland-China pigs. Write for prices. No better stock in the West. Zachary Taylor, Marion, Kas.

E. E. AXLINE, OAK GROVE, MISSOURI, (Jackson Co.)
Barred Plymouth Rocks.
Bred from the best strains and judicious matings. Eggs \$1 per setting of fifteen. Satisfaction guaranteed.

EGGS! FROM 98 POINT BIRDS!
SCORED BY JUDGE C. A. EMERY.
98 score 35 lb. young Bronze tom mated to 97½ point 20 lb. pullets. Eggs \$3 for 9. B. P. Rocks and Lt. Brahmas, score 92½ to 94½, eggs \$1.50 for 15. Cornish Indian Games, score 92½ to 93½, eggs \$2.50 per 15. Who can beat these prices, quality considered? I have a handsome lot of fall Poland-China males good enough to go anywhere. Write. Mention FARMER.

GEO. W. NULL, Odessa, Lafayette Co., Mo.

SWINE.

Thoroughbred Duroc-Jersey Hogs

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

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

SELECT HERD OF BERKSHIRES

Have for sale pigs from State fair winners. Can fill classes for show. Boars for fall service. A few choice sows bred. Address G. W. BERRY, Berryton, Shawnee Co., Kas.

GEORGE TOPPING, Cedar Point, Kas. (CHASE CO.) Importer, breeder and shipper of

LARGE ENGLISH BERKSHIRE SWINE

of best families and breeding. Choice pigs for sale at low prices. Also Single-combed Brown Leghorns and Mammoth Bronze turkeys. Eggs in season. Farm 6 miles south of Cedar Point. Mention K. F.

SWINE.

BERKSHIRES

H. B. COWLES, TOPEKA, KAS.

S. McCULLOUGH, Ottawa, Kansas. Breeder of Pure-bred BERKSHIRE SWINE. Stock for sale at all times. Satisfaction guaranteed. Write for what you want.

BERKSHIRES.

We offer choice selections from our grand herd, headed by a great imported boar. New blood for Kansas breeders.

WM. B. SUTTON & SON, Russell, Kansas.

JAMES QUORLO, MOSCOW, MO.

Breeder and shipper of prize-winning Large Berkshire Swine. S. C. Brown Leghorns and Bronze Turkeys.

Headed by King Lee II. 29801, Mephistopheles 32412.

THE WOOD DALE BERKSHIRES

Champions of Two World's Fairs.

New Orleans, 1885, best herd, largest hog any breed. At Columbian, Chicago, won ten out of eighteen first prizes, the other eight being bred at or by descendants of Wood Dale. New blood by an 1894 importation of 21 head from England. For catalogue Address N. H. GENTRY, SEDALIA, MO.

J. W. BABBITT, HIAWATHA, KAS.

BREEDER OF Regist'd Berkshire Swine 45 in herd, headed by Lord Majestic 34708, a son of Imp. Lord Windsor 30461; dam Imp. Majestic 30459. 6 boars, 12 gilts, by Model Duke II. 22407, and 9 fall of 1894 farrows, both sexes, for sale. Write or come.

BOURBON COUNTY HERD, English o Berkshire o Swine.

J. S. MAGERS, Prop., Arcadia, Kas. Imported and prize-winning American sows headed by Imp. Western Prince 32202. All selected and bred to head herds and to supply those wanting none but the best. Fall litters now can't be beat. Write or come visit me and see the herd.

JOHN KEMP, North Topeka, Kas., breeder of improved Chester White Swine. Stock of both sexes for sale. Correspondence invited.

D. W. EVANS' HERD REGISTERED POLAND-CHINAS. FAIRVIEW, BROWN CO., KAS.

250 head headed by Swi. Tecumseh 11929 S., by L's Tecumseh 11413 S., and Billy Wilkes 9369 S., by George Wilkes 5050 S. A public clearance sale on Thursday, February 14, 1895, of 75 sows bred to these and other noted boars. Inspection invited.

BERKSHIRE, Chester White, Jersey Red and Poland China PIGS. Jersey, Guernsey and Holstein Cattle. Thoroughbred Sheep. Fancy Poultry. Hunting and House Dogs. Catalogue. S. W. SMITH, Cochranville, Chester Co., Penna.

BERT WISE, breeder of Poland-China Hogs, Holstein Cattle and Barred Plymouth Rock Chickens of choicest strains. Butler's Darkness No. 6340 S. and Ideal U. S. Nemo at head of swine herd. Only choice stock shipped on order. Sows bred and a few extra good young boars for sale. Three are out of my Orient sows. Write your wants. Satisfaction guaranteed.

BERT WISE, Reserve, Brown Co., Kas.

A. E. STALEY, Ottawa, Kansas. CHESTER WHITES AND POLAND-CHINAS. Light Brahma eggs \$1.50 for 15.

ROCK QUARRY HERD.

N. E. MOSHER & SON, SALISBURY, MO.

Fifteen choice Poland-China sows bred to Mosher's Black U. S. and Faultless Wilkes for sale; ten choice young boars ready to go; six young Hereford bulls. Also eggs for sale from Black Langshans scoring 94 to 95½ and from a choice lot of Light Brahmas and Mammoth Bronze turkeys.

W. S. ATTEBURY, Rossville, Kansas. BREEDER OF Chester Whites Exclusively. Satisfaction guaranteed.

YOUNG STOCK AT ALL TIMES.

MAINS' HERD OF POLAND-CHINAS.

JAS. MAINS, Oskaloosa, Kas. (Jefferson County.)

A grand lot of sows bred to Monroe's Model, Excel, McWilkes Jr. and Storm Cloud 2d. Also all other classes and ages of stock for sale. I guarantee safe arrival and stock as represented or money refunded. Breeding stock recorded in Ohio P. C. R.

CATTLE.

SUNNY SLOPE FARM, C. S. CROSS, Proprietor, Emporia, Kas.

Breeder of PURE-BRED HEREFORD CATTLE. Herd headed by Wild Tom 51592, a son of Beane Real 11056 and assisted by sons of Cherry Boy 26476, Archibald 1st 33258 and Washington 22615. 200 head, all ages, in herd. Strong in the blood of Lord Wilton, Anxiety and Horace. A choice lot of young heifers, fit for any company. Bulls all sold. Correspondence solicited, or, better still, a personal inspection invited.

SHANNON HILL STOCK FARM.

G. W. GLICK, ATCHISON, KAS.

Breeds and has for sale Bates and Bates-topped SHORT-HORNS. Waterloo, Kirklevington, Filbert, Crag, Princess, Gwynne, Lady Jane and other fashionable families. The grand Bates bulls Winsome Duke 11th 115137 and Grand Duke of North Oaks 11th 115735 at head of the herd. Choice young bulls for sale now. Visitors welcome. Address W. L. CHAFFEE, Manager.

SWINE.

TOWER HILL HERD PEDIGREED POLAND-CHINAS.

B. R. ADAMSON, Prop., Ft. Scott, Kas. 25 highly-bred brood sows of best strains, headed by Black Dandy 8809 S., Black Stop 10560 S. and Joker Wilkes 12682 S. About 100 selected individuals sold this season. 25 youngsters coming on now for choice. Write or come and visit my herd.

Quality Herd Poland-Chinas.

For first choice pigs from stock producing winners of seven prize World's Fair. Darkness Quality 2d and Ideal U. S. by Ideal Black U. S. head the herd. Both first-prize winners Kansas State fair 1894. Come or write your wants. Willis E. Gresham, Burrton, Kas. Secretary Kansas Swine Breeders' Association.

PLEASANT VIEW STOCK FARM.

J. A. WORLEY, Sabetha, Kansas.

Poland-China Swine, Short-horn Cattle, Light Brahmas and G. L. Wyandottes. Herd headed by Anxiety 20261 A., assisted by Combination U. S. 13408 and America's Equal 12279. Have some choice fall pigs, both sexes, for sale, and a few Light Brahma cockerels. Eggs \$1 and \$1.50 per setting. Write. [Mention KANSAS FARMER].

Evergreen Herd Poland-Chinas.

Winterscheidt Bros., Prop's, Horton, Kas. Headquarters for Admiral Chip pigs. The great \$250 boar, Admiral Chip 7919, heads the herd, assisted by Kansas Chief 13676, Winterscheidt Victor 13234, Geo. Wilkes Jr. 11863. Also pigs from Orient's Success 27239 and Banner Chief 12714. Sows of following strains: Tecumseh, None Such, Wilkes Admiral Chip, etc. Prices reasonable. Write or come.

J. R. KILLOUGH & SONS, Richmond, Franklin Co., Kansas.

POLAND-CHINA SWINE.

Headed by Upright Wilkes 13246 and assisted by J. H. Sanders Jr. 13739. Our brood sows are all richly bred and high-class individuals. A fine lot of fall pigs, both sexes, ready to go at reasonable prices.

ELM BEACH STOCK FARM

IRWIN & DUNCAN, Wichita, - Kansas, Sedgwick Co.

Breed and have for sale Bates and Bates-topped Short-horns—Waterloo, Kirklevington and other fashionable families. Also breed and have for sale the best thoroughbred Poland-Chinas that can be obtained. Write or come and see.

STANDARD POLAND-CHINA HERD.

CHAS. A. CANNON, Proprietor, HARRISONVILLE, CASS COUNTY, MISSOURI

Breeder and shipper of registered Poland-China swine of the best strains. Herd headed by Chow Chow 9963 S., assisted by a Black U. S. son of Imitation 27185 O., also a son of Tecumseh Jr. 10207 O. 220 head in herd. Young boars and gilts yet on farm. Write or come and visit me.

SUNNY SLOPE FARM, EMPORIA, KANSAS.

200 head of Poland-China hogs, headed by Long-fellow 29885 O. (who has the best Columbian record west of the Mississippi), J. H. Sanders Jr., Hadley Jr. 27505, Sir Charles Corwin. We also combine the blood of Black U. S., Ideal U. S. and Wilkes. 100 head of brood sows. Also 100 head of Berkshires, headed by the well-known boar, Major Lee 31139. We have 25 gilts bred by him to General Lee of Gentry breeding and Royal Peerless the Great. We have one of the largest herds of hogs in the United States. Why not come to the fountain head for brood sows? 200 head of fashionably bred Herefords. H. L. LEIBFRIED, Manager.

(Breeders' Directory continued on page 16.)

The Stock Interest.

THOROUGHbred STOCK SALES.

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

SEPTEMBER 6—Walter Latimer, Garnett, Kas., Poland-China swine.
OCTOBER 4—Winterscheidt Bros., Horton, Kas., Poland-China swine.
OCTOBER 9—Geo. W. Null, Odessa, Mo., Poland-China swine.
OCTOBER 10—J. R. Killough & Sons, Richmond, Kas., Poland-China swine.
OCTOBER 22—F. M. Lall, Marshall, Mo., Poland-China swine.
OCTOBER 23—C. G. Sparks, Mt. Leonard, Mo., and G. L. Davis, Elmwood, Mo., Poland-China swine.
OCTOBER 30—L. N. Kennedy, Nevada, Mo., Poland-China swine.

THE FEEDING OF FARM ANIMALS.

[From Farmers' Bulletin No. 22, United States Department of Agriculture.]

(Continued from last week.)

AMOUNTS OF DIGESTIBLE NUTRIENTS IN DIFFERENT FEEDING STUFFS.

To simplify matters for the farmer, calculations have been made of the amounts of digestible protein, fat and carbohydrates contained in 100 pounds each of a large number of more commonly used feeding stuffs. As has been fully explained above, they are derived from averages of composition and of digestibility, both of which are subject to considerable variation. In calculating them American analyses and digestion coefficients found in American experiments were used as far as possible. They are the figures which the farmer has to consult to find the food value of a material in selecting his feeding stuffs or making up a ration.

ured in "heat units" or "calories,"* and is calculated from the nutrients digested. Thus the fuel value of one pound of digestible fat is estimated to be 4,220 calories, and one pound of digestible protein or carbohydrates about 1,860 calories. The total fuel value of a feeding stuff is found by using these factors.

The meaning of the figures in the above table is that in 100 pounds of green corn fodder containing an average amount of dry matter (20.7 pounds) there are contained approximately 1.10 pounds of digestible protein (materials containing nitrogen), 12.08 pounds of digestible carbohydrates (starch, sugar, fiber, etc.), and 0.37 pound of digestible fat; and that these materials when burned in the body will yield 26,076 calories of heat, furnishing energy for work and maintaining the temperature of the body.

FEEDING STANDARDS FOR DIFFERENT KINDS OF ANIMALS.

It will be remembered that the primary functions of food are to repair the waste of the body, to promote growth in immature animals, and to furnish heat and energy. And for these purposes only the digestible portion of the food, as given in the above table, is to be taken into account. The amount of digestible protein, fat and carbohydrates in a ration is an indication of its fitness to fulfill these purposes. The next question is, how much of these materials does an animal require, and in what proportion should they be given? This differs

which is worked hard every day. That is, in drawing heavy loads the animal breaks down a certain amount of muscular tissue, which must be replaced by protein in the food, and it uses energy, or force, which is also furnished by the food nutrients. In standing in the barn it still requires some protein, fat and carbohydrates to perform the necessary functions of the body, as digestion, to maintain heat in winter, to grow a new coat of hair, etc. But if it is fed the same ration as when working hard the tendency is to get fat.

The cow requires not only materials for maintenance, but must also have protein, fat and carbohydrates to make milk from. The milk contains water, fat, protein (casein, or curd), sugar and ash, and these are all made from the constituents of the food. If insufficient protein, fat and carbohydrates are contained in the food given her, the cow supplies this deficiency for a time by drawing on her own body, and gradually begins to shrink in quantity or quality of milk, or both. The stingy feeder cheats himself as well as the cow. She suffers from hunger, although her belly is full of swale hay, but she also becomes poor and does not yield the milk and butter she should. Her milk glands are a wonderful machine, but they cannot make milk casein (curd) out of the carbohydrates in coarse, unappetizing, indigestible swale hay or sawdust any more than the farmer himself can make butter from skim-milk. She must not only have a generous supply of good food, but it must contain sufficient amounts of the nutrients needed for making milk. Until this fact is understood and appreciated, successful, profitable dairying is out of the question. The cow must be regarded as a sort of living machine. She takes the raw materials given her in the form of food and works them over into milk. If the supply of the proper materials is small the output will be small. The cow that will not repay generous feeding should be disposed of at once and one bought that will. There are certain inbred characteristics which even liberal feeding cannot overcome.

Attempts have been made to ascertain the food requirements of various kinds of farm animals under different conditions. Large numbers of feeding experiments have been made under varying conditions with this end in view. From the results feeding standards have been worked out which show the amounts of digestible protein, fat and carbohydrates supposed to be best adapted to different animals when kept for different purposes. The feeding standards of Wolff, a German, have been most widely used. They are as follows:

WOLFF'S FEEDING STANDARDS.

A.—Per day and per 1,000 pounds live weight.

	Total organic matter.	Digestible food materials.			Fuel value.
		Protein.	Carbohydrates.	Fat.	
	Pounds.	Pounds.	Pounds.	Pounds.	Calories.
Oxen at rest in stall.....	17.5	0.7	8.0	0.15	16,815
Wool sheep, coarser breeds.....	20.0	1.2	10.3	0.20	22,235
Wool sheep, finer breeds.....	22.5	1.5	11.4	0.25	25,050
Oxen moderately worked.....	24.0	1.6	11.3	0.30	24,290
Oxen heavily worked.....	26.0	2.4	13.2	0.50	31,126
Horses moderately worked.....	22.5	1.8	11.2	0.60	26,712
Horses heavily worked.....	25.5	2.8	13.4	0.80	33,508
Milk cows.....	24.0	2.5	12.5	0.40	29,590
Fattening steers:					
First period.....	27.0	2.5	15.0	0.50	34,660
Second period.....	26.0	3.0	14.8	0.70	36,062
Third period.....	25.0	2.7	14.8	0.60	35,082
Fattening sheep:					
First period.....	26.0	3.0	15.2	0.50	35,962
Second period.....	25.0	3.5	14.4	0.60	35,826
Fattening swine:					
First period.....	36.0	5.0	27.5	2.75	60,450
Second period.....	31.0	4.0	24.0	2.40	52,080
Third period.....	28.5	2.7	17.5	1.75	37,570

B.—Per day and per head.

	Average live weight per head.	Total organic matter.	Digestible food materials.			Fuel value.
			Protein.	Carbohydrates.	Fat.	
	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.	Calories.
Growing cattle:						
Age—						
2 to 3 months.....	150	3.3	0.6	2.1	0.30	5,116
3 to 6 months.....	300	7.0	1.0	4.1	0.30	10,760
6 to 12 months.....	500	12.0	1.3	6.8	0.30	16,382
12 to 18 months.....	700	16.8	1.4	9.1	0.28	20,712
18 to 24 months.....	850	20.4	1.4	10.3	0.26	22,859
Growing sheep:						
Age—						
5 to 6 months.....	56	1.6	0.18	0.87	0.045	2,143
6 to 8 months.....	67	1.7	0.17	0.85	0.040	2,066
8 to 11 months.....	75	1.7	0.16	0.85	0.037	2,035
11 to 15 months.....	82	1.8	0.14	0.89	0.032	2,051
15 to 20 months.....	85	1.9	0.12	0.88	0.025	1,966
Growing fat swine:						
Age—						
2 to 3 months.....	50	2.1	0.38	1.50	0.30	3,496
3 to 5 months.....	100	3.4	0.50	2.50	0.50	5,580
5 to 6 months.....	125	3.9	0.54	2.96	0.50	6,510
6 to 8 months.....	170	4.6	0.58	3.47	0.50	7,538
8 to 12 months.....	250	5.2	0.62	4.05	0.50	8,636

*Corn fodder is entire plant, usually sown thick. †Herd's grass of New England and New York.

‡Lacern.

The last column in the above table, headed "fuel value," indicates the heat and energy power of the food. It will be remembered that one of the primary functions of the food is to produce heat for the body and energy for work. The value of food for this purpose is meas-

ured in "heat units" or "calories,"* and is calculated from the nutrients digested. Thus the fuel value of one pound of digestible fat is estimated to be 4,220 calories, and one pound of digestible protein or carbohydrates about 1,860 calories. The total fuel value of a feeding stuff is found by using these factors.

*A calorie of heat is the amount required to raise the temperature of a pound of water about 4 deg. F.

Sick Headache Permanently Cured

"I was troubled, a long time, with sick headache. It was usually accompanied with severe pains in the temples and sickness at the stomach. I tried a good many remedies recommended for this complaint; but it was not until I began taking



AYER'S

Pills that I received anything like permanent benefit. A single box of these pills did the work for me, and I am now a well man."

C. H. HUTCHINGS, East Auburn, Me.

For the rapid cure of Constipation, Dyspepsia, Biliousness, Nausea, and all disorders of Stomach, Liver, and Bowels, take

AYER'S Cathartic Pills

Medal and Diploma at World's Fair.

Ask your druggist for Ayer's Sarsaparilla.

For an unworked ox of 1,000 pounds this standard calls for 0.7 pound of digestible protein, 8 pounds of digestible carbohydrates, and 0.15 pound of digestible fat, which would furnish 16,815 calories of heat and energy. When heavily worked the same ox would require, according to the standard, food with three times as much protein and of nearly twice the fuel value. A cow giving milk would require as much protein and nearly as much carbohydrates and fat as the heavily worked ox. A ration furnishing the protein, fat and carbohydrates in the right proportion is said to be a "balanced" ration. If it contains too much carbohydrates and too little protein it is not well balanced.

In addition to furnishing the requisite amounts of nutrients the food must have a certain bulk. This bulkiness is brought about by feeding a certain amount of coarse fodder, which aids digestion and helps to keep the animal satisfied and healthy. The measure of the bulk is the amount of dry matter or organic matter in the ration. The dry matter is the solid or water-free

portion of the food. The organic matter is the combustible portion—that is, the dry matter less the mineral matter or ash. These two do not differ very widely from each other in most feeding stuffs. The standard calls for twenty-four pounds of organic matter for a cow, but this may vary considerably without serious results. More latitude is allowable than in the case of any single nutrient.

(To be continued.)

Agricultural Matters.

WHEAT AND SILVER.

The *Millers' Gazette and Corn Trade Journal*, of London, England, copies from the *Western Times* a discussion by W. R. Mallett, of Exeter, which he introduces with a quotation from Adam Smith, as follows:

"In Chapter V. there is given the following concise and emphatic opinion: 'The average or ordinary price of corn is regulated by the value of silver; by the richness or barrenness of the mines that supply that metal.'

"Very closely together does the philosopher bind the values of wheat and silver.

"Two factors dominate the exchangeable value of any commodity when an equable or constant demand for that commodity exists, viz., that of supply, and cheapened cost and economy in production. Take the last first, and let us see what the parrot cry of industrial progress and development means. Much we willingly acknowledge has been done in this direction, and the saving in cost from the beginning by the use of steam plows and other labor-saving appliances in the fields of America and elsewhere, improved and cheapened transit by rail and sea, mechanical handling and what not, can be, and is, repeatedly gauged, and the conclusion presents itself that it in no way fully accounts for the drop in prices of the last twenty years. It has been well pointed out that our mechanical developments of the last half century, of which a just pride may make us a little too boastful, are not of greater importance than—I will say—are not of so great importance as—the great parental discovery of the application of steam by James Watt, in the closing decades of the last century. It is instructive to note how the bursting of this titanic force, which was destined to revolutionize our industries and powers of transit, affected the price of corn.

For ten years after the death of the great inventor, 1819-1830, the average price was 58s. 2d. per quarter.

For fifty years after it was 58s. 8d. per quarter. It being left for the last decade to come to 31s. per quarter.

Culminating, or rather further descending to its present level, 21s. per quarter.

"If it is not economy of production or of transit that has so cheapened wheat, is it oversupply? Has the world grown too much wheat in the last ten or twenty years? Herein doctors differ, and the enthusiast who holds that supply and demand are the ruling factors, and dominant forces, will find statistics tell him a very curious, almost startling tale, and will find his stereotyped opinions meet a direct rebuff.

"Not to go into details of the production and population of every country, it is enough to summarize, by using the elaborate and carefully-prepared conclusion arrived at by a reliable authority of the trade, that the wheat grown in the world in the ten years ending 1884 yielded an average of 4.4 bushels for each person; ten years ending 1894 yielded similarly 4.3. And rye, the principal food of eastern Europe, must also be considered before a just conclusion can be arrived at. For within the past twenty years the semi-civilized nations of that region and of western Asia, are, as they improve in their manner of living, passing from the inferior grain to the superior, consuming wheat instead of rye. Taking this wider and more reliable test we find that whilst in the first decade mentioned the production of both cereals averaged 7.08 bushels per head, in the last ten years it fell to 6.84. And yet in the 70's wheat averaged 50s.; in the 80's 35s.; shrinking to 21s. to-day [per quarter—eight bushels.]

"What is the meaning of the drop?

As far as statistics will tell us it is not oversupply and but a proportion of it, and that not a large share, can be traced to mechanical developments, and it seems we cannot but find ourselves face to face with the question whether there may not be yet another influence, invisible, yet underlying all, and which, too, has found birth within the last twenty years, gathering in strength as those years passed by.

"Let me attempt to show, as a direction where it is tolerably patent, and its action discernable, how a differing standard of currency at once and directly bears down on our values of wheat.

"It may be remembered that whilst America still constitutes our chief source of supply, Russia rivals her very closely, and it is well to try to form some idea of what the monetary conditions are that bear sway in that vast Eastern empire. The rouble is the expressed and general standard of value, bearing a face value in English money of 3s. 2d., to which its exchange value closely approximated, until the fall in silver; now it is worth 2s. 4d. Let us endeavor to consider how this affects the export trade of Russia in grain. A good sample of Russian Azima, or winter-sown wheat, to take as a standard, is worth to-day about 24s. cost, freight and insurance paid, off the English coast. With its freight from Odessa at its present quotation of about 10s. a ton, and deducting the various charges for commission and merchants' profits, storing at Odessa, railway carriage thereto, and handling, it leaves the grower of within, say, an average distance from that port, further away less and nearer more, from 16s. to 18s. per quarter of 492 pounds. Now, it is one of the chief points in discussing this matter to remember that English pounds and shillings have no meaning whatever to the Russian peasant proprietor. It is only the exporting merchants who have to concern themselves about English money. It is in their own roubles that the whole thing presents itself to the Russian, and for nineteen-twentieths of his requirements the rouble has still the same purchasing power. It will pay his rent and his taxes, and satisfy the demand of the daily life of his simple village commune just as well, and go just as far, now as it did twenty years ago; it is only when he buys articles manufactured in a gold-standard country, in England or America, that he feels the depreciated exchange value, and of these goods the rigid protectionist tariff of a ternal government takes care he shall buy as little as possible. With the rouble at par, 18s. would bring to the Russian farmer a little over 5½ roubles at his farm gates. At its present depreciated value of 2s. 4d. he gets 8½ roubles, the exchange thus making him a present of 3 roubles, or roughly 6s. 6d. per quarter. I am strongly of the opinion that these 3 roubles may make all the difference, as between a profit and none, or it may be a profit or a loss, to the grower there, and I am somewhat supported in the contention by a report recently issued from H. B. M. Consulate at Odessa, in which doleful complaints are raised that wheat-growing does not pay, and that rents are generally being reduced and less land sown.

"May we not draw the reasonable conclusion that if this stimulus of 3 roubles or its equivalent was withdrawn much, if not all, the profits would vanish likewise, the area sown be rapidly reduced, supplies consequently shrink, and the market relieved from the burden of an aided supply, would rapidly respond to that higher level at which gold-standard producing countries could profitably compete.

"It is fair to remember that Russia is by no means the only or even chief contributor to our imports, but it is a country of enormous agricultural resources, and under a better regime—such as under the rule of the young Czar and Czarina mayhap is at hand—is capable of great development. The extent of her productions are seldom thought of, but when we learn that in the past year she is credited with having produced the immense total of 230,000,000 quarters of cereals

of all kinds, and contrast that with our own production in the British Isles of 37,000,000 to 38,000,000, some idea can be formed of the influence such a vast business, all measured by the silver rouble, or its paper equivalent, and its earning calculated by that rouble, must have on the grain trade of the world.

"The paper currency of Argentina, often already referred to in your columns in connection with this subject, with its present quotation of 260 premium, confers a still greater boon on producer there, as for every 20s. worth of produce he puts on board ship in the Plate river he gets the equivalent of 70s. in Argentine dollars. But this great disparity is from its very nature so unstable, and must sooner or later melt itself down, that I prefer in this particular paper to forego such advantage as it might give, and content myself with considering the lesser disparity presented by the solid and more enduring rouble.

"It has lately been asked why the exports of India do not increase, as the rupee gives proportionately a greater advantage to the Indian ryot than the rouble to the Russian. It may be remembered that the average Indian wheat production for the last nine years is slightly under 32,000,000, and her exports 4,000,000 only. The rest is eaten. Now, similarly as with rye in eastern Europe, it is as cheap for the ryot to eat his wheat as his rice. The consumption of wheat there is growing, and, to use a somewhat figurative expression, the odd 4,000,000 quarters would but form a day's meal for the vast population of India, and it would come as no surprise if they elected to eat the whole.

"I will anticipate a still more formidable criticism in considering the position of gold standard America. This country still holds the precedence in our supplies, but at what cost to those of her 6,000,000 farmers who may depend on wheat production for a living is being disclosed as time goes on. Evidence is accumulating that the American grain farmer is in a very bad way. Enthusiastic Americans may tell us how in exceptional instances profits in wheat-growing may still be made, but the bonanza wheat king of the Northern States has disappeared, and the whole mass of evidence, financial, economical and agricultural, is pointing with certainty to the fact that to rely on the production of wheat as a staple source of profit is to lean on a broken reed, and it has come to be considered much in the same light as in England as a necessity for the rotation of crops and proper treatment of the land. I am, therefore, driven to the conclusion that generally wheat-growing fares very little better in America than here, and that the American farmer is as tired of it as we are.

"And now comes the crucial question—if it does not pay, why does he grow it and sell it? To this it is not difficult to find an answer. It is the same with nations in commercial matters, in their rivalry with each other, as with towns, and even individuals. In everything it is the cheapest seller who makes the price and dominates the situation, and it is useless for the American grower to expect that importing nations of western Europe will give him a higher price than his rivals in the silver-using East can sell it. To their prices he must come to clear his crop, and while the Russian and Argentine is happy in the possession of his roubles and his notes, it boot not to him what the position of other competitors may be. 'Sufficient for the day is the fruit thereof.'

"It seems to come to this, that those producing nations of the world who have a depreciated currency in either silver or paper can, and do, set to all other nations the price at which in free competition their produce must be sold, and whilst other conditions of partial failure of crops and similar vicissitudes still exert an influence it is but temporary, and prices inevitably slide back under the permeating and pernicious influence of these differing standards of currency.

"I trust I have fulfilled my intention of not discussing this matter in its financial aspect, which, indeed, I should

not be competent to do; but I also hope I have shown, albeit somewhat feebly, and in a manner necessarily dry and statistical, that this currency question, in its bearing on the growing of wheat in this country at least, does exert a direct and baneful influence on that hitherto great source of our national wealth and prosperity."

Effects of Subsoiling--Potatoes.

EDITOR KANSAS FARMER:—It is a great curiosity to many visitors to examine the soil where I have used the subsoiler. It is as fine as powder and as cool as ice water and as damp as one would wish, yet other soil is suffering for water.

I had half an acre of garden that was subsoiled and the result was very gratifying. The early button radishes did not suffer in the dry spring, but yielded an enormous crop of succulent roots. The early Milan turnips were very nice and the Alaska peas were ready to pick by May 10 and were of superior quality, while my neighbor, who is a practical gardener, could not market his truck as early as I could on account of the dry spring.

There is a mystery about how this ground gets its moisture, that has not yet been explained. It is a positive fact, that ground subsoiled when there is scarcely any moisture in it, will shortly get quite damp without any rain. The action of the plow seems to mellow it up so fine that the top dust makes a complete mulch and induces the retention of moisture, also modifies the temperature of the soil. Ground that was fall-broke froze much deeper than other ground and is now so cool as to fairly shock one upon digging down.

What a grand thing this is for potatoes. My potatoes are looking very nice and to-day (May 20) the Early Ohios and Early Kansas, planted on April 5, are just coming into early bloom. Many hills of Kansas are not yet up and upon digging down, new potatoes the size of guinea eggs are found, but no top sprout at all. These new potatoes will shortly put out roots and a sprout and a new top will come out and that hill will have one or two of the very largest potatoes in the whole field. Another novel thing the Early Kansas has, and that is, it grows one potato large and then another and another, and so on, and never puts out a knob, but always puts it into the small potatoes.

I am making eight thorough tests with manures and fertilizers and tests of the Early Morn, (from L. L. May & Co.) Early Ohio, Early Kansas, Early Freeman, Carman No. 1, Bliss Triumph, and Red Peachblow and Early Polaris. The Bliss Triumph are from second-growth seed from Oklahoma City, grown by Mr. Isaacs, a gardener of that city. These are the potatoes that sail under the name of "Stray Beauty," Tennessee Triumph, etc.

CLARENCE J. NORTON.

Morantown, Allen Co., Kas.

Paid the Mortgage.

EDITOR KANSAS FARMER:—I herewith send you draft for \$1 for my KANSAS FARMER. We (wife and I), on the 13th of this month, finished paying off the mortgage on our little farm of 100 acres. Thanks be to a kind Providence that has prospered us. We feel in good spirits and have faith in the future, though it is very, very dry with us now. It looks now like oats would be a failure and wheat a very poor crop. Time enough yet for corn if we can get the rain, and the people are hopeful. Some corn looks well, most boot-top high, but most of it looks poorly. This will teach us this: To put our trust in God and our land in better shape to receive the seed.

Montgomery Co., Kas. A. H. S.

You Don't Have to Swear Off,

says the *St. Louis Journal of Agriculture* in an editorial about No-To-Bac, the famous tobacco habit cure. "We know of many cases cured by No-To-Bac, one, a prominent St. Louis architect, smoked and chewed for twenty years; two boxes cured him so that even the smell of tobacco makes him sick." No-To-Bac sold and guaranteed by druggists everywhere. No cure no pay. Book free. Sterling Remedy Co., New York or Chicago.

Irrigation.

COLLECTION AND STORAGE OF WATER IN KANSAS.

By Prof. H. C. Murphy, of Kansas State University.

(Continued from last week.)

Not only the amount of rainfall but the part of it flowing into the streams, or the run-off, must be known before the quantity of water a given area will furnish can be computed. This run-off depends on the rainfall area drained, kind and condition of soil and inclination of surface. It is greatest where the surface is steep and rocky and the rain falls very rapidly. Mr. J. T. Fanning, C. E., estimates the run-off from a flat, cultivated prairie country to be from 45 to 60 per cent. of the mean annual rainfall. In some parts of Kansas the soil is very loose and sandy; in other parts the surface is covered with a tough buffalo grass sod. From the former the surface run-off is very little, not more than 25 per cent.; from the latter it is probably at least 60 per cent.

Evaporation and percolation as here considered are the losses of water from the reservoir, i. e., after collection. The former is the part which passes off into the air; the latter, that which passes off into the ground through the bottom and sides of the reservoir. The former takes place at all times, though most rapidly during the hot, dry summer months; the latter loss is greater when the reservoir is new, and grows less and less as the fine materials in the water fill up the pores of the soil. Evaporation takes place most rapidly when the air is very dry, the water warm and a brisk wind is blowing. These are the conditions existing in western Kansas, and consequently the evaporation is quite great.

The only recorded measurements of evaporation in Kansas that the writer has seen are those made by Mr. T. Russell, of the United States signal-service at Dodge City. They were made with the Piche evaporimeter and for one year only. He also measured the evaporation at several other places in the West.

Table III gives the monthly evaporation at eleven places as found by Mr. Russell; also the mean annual rainfall from Ex. Doc. '91, Fiftieth Congress, first session, and the altitudes from Henry Gannett's dictionary of altitudes.

It seems to us that the evaporation at Dodge City, as given in this table, is too small. Compare, for example, the evaporation of Dodge City with that of Salt Lake City; the latter is 1,800 feet higher and four degrees further north than the former; the rainfall is about the same for both. We would, therefore, expect the evaporation at Dodge City to be a considerable amount greater than that of Salt Lake City. As given in this table the evaporation of Salt Lake is 74.4 inches, and that of Dodge City only 54.6 inches.

The percolation loss from a reservoir is difficult to measure. It is usually considered in connection with evaporation. As these two constitute the total loss, it can be easily found from the differences in depth of the reservoir at any point at two given times.

The percolation varies from almost nothing, in a well-constructed reservoir, to a large amount in the case of a natural reservoir with sandy or gravelly bottom. Not only alluvium, but rocks, also, allow water to pass through them with more or less freedom. The amount which passes varies with the porosity and pressure. Loose sand will absorb from 30 to 35 per cent. of its volume, a gravelly sand from 20 to 25 per cent., marl from 10 to 20 per cent., clay from 10 to 15 per cent., chalk, sandstone and limestone from 10 to 20 per cent. A formation which is nearly impervious at a low pressure may allow much water to pass under a head of thirty or more feet.

Not only does the porosity of soil vary a good deal, but the variation is often quite sudden. A clay soil in one place will hold the water quite well; in another place, only a short distance from the first, it may be sandy and allow the water to pass through it almost as through a fine sieve. It is impossi-

ble to predict from the porosity of the soil in one valley what that in another valley is, even though they be but a short distance apart. A careful examination, not only of the surface formation, but also of the underlying ones, is necessary in order to determine approximately what the percolation from a reservoir in a given valley will be.

Some idea of the percolation through western Kansas soil may be gotten from that from the Perry ditch in Clark county. This ditch is eight and one-half miles long, fifteen feet wide at top, nine feet wide at bottom, two feet deep, and has a grade of two and one-fourth feet to the mile. There are places along it where the uphill bank was not constructed, and the ditch widened out into shallow ponds, the area of which was estimated to be three acres with an average depth of six inches. When water was let into it for the first time, it was fourteen days from the time the gates were opened until the water reached the end of the ditch. The cross section of the stream being twenty-four square feet, and the mean velocity 1.925 feet sec., 55,884,000 cubic feet of water entered the fourteen days, 1,177,000 cubic feet were in the ditch and ponds at the end of the time, hence 54,706,000 cubic feet, or more than fifty ditchfuls were lost while the water went a distance of eight and a half miles. Now, after being used eight years, if the water is shut out for a short time and again admitted into the ditch, it will flow the length of it in seven and one-half hours.

The valleys of Kansas are not favorable for the storage of large quantities of water. They are broad and shallow as a rule, decreasing in width and depth from the east toward the west.

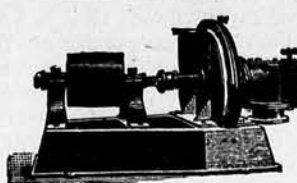
TABLE III.

Place.	MONTHLY EVAPORATION.												Mean annual rainfall.	Elevation.
	Jan., '88.	Feb., '88.	Mar., '88.	April, '88.	May, '88.	June, '88.	July, '88.	Aug., '88.	Sept., '88.	Oct., '88.	Nov., '88.	Dec., '88.		
Dodge City, Kan.	1.42	4.2	2.8	4.1	4.6	7.4	8.3	6.6	5.5	5.2	4.2	2.1	54.6	2475
Cheyenne, Wyo.	3.35	7.4	4.0	8.2	5.2	10.4	8.0	7.7	8.6	5.8	6.1	3.5	76.5	6050
Colorado Springs, Col.	3.03	3.4	1.6	7.7	5.6	4.3	6.7	7.2	8.4	4.6	4.2	2.9	59.4	6010
Fort Davis, Texas.	5.45	7.6	7.8	5.1	11.0	12.0	11.4	9.0	5.9	5.2	5.7	4.9	96.4	4700
Santa Fe, N. M.	3.03	4.4	2.6	8.3	8.8	12.9	9.2	9.3	8.6	6.7	5.7	2.7	79.3	7047
Yuma, Arizona.	4.45	2.6	6.6	9.6	9.6	12.6	11.0	10.2	8.2	2.2	5.5	4.6	95.7	142
Winnemucca, Nev.	0.92	8.6	2.9	1.1	9.3	10.1	11.5	12.0	9.9	6.6	8.7	1.8	83.9	4932
Salt Lake City, Utah.	1.82	7.3	6.7	2.9	6.9	8.9	9.2	10.7	9.6	5.3	3.2	1.3	74.4	4354
Boise City, Idaho.	1.02	5.3	3.8	6.1	6.5	6.6	10.0	9.2	7.4	4.5	3.2	1.8	63.9	4744
Sacramento, Cal.	1.83	1.3	7.4	2.3	4.2	5.6	5.9	5.6	6.5	7.3	3.9	2.4	54.3	19.69
Fresno, Cal.	1.82	2.8	3.0	5.6	6.0	7.0	9.1	10.2	7.6	6.7	3.8	2.2	65.8	314
Cambridge, Mass.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	56.0	.....
Syracuse, N. Y.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50.2	403
Cotton River, N. Y.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.2	.....

Their breadth necessitates the construction of long and expensive dams and the flooding of large areas, and this broad water surface increases greatly the evaporation and the percolation losses. The soil in the larger valleys is sandy, allowing water to pass through readily and making a foundation difficult.

The sub-surface of Kansas seems at first sight to be equally unfavorable to the storage of water. The surface slopes to the east, while the sub-surface layers or strata slope or dip north and east. The rivers flow over the edges of the upturned beds, and would lose part of their water into them if other conditions were favorable. The Smoky Hill river, for example, flows over the ends of the tertiary, cretaceous, permian and upper carboniferous formations. All of these absorb some water. The Dakota cretaceous and lower tertiary absorb more than the others. But the condition of affairs is not so bad as at first sight. The upper cretaceous or niobrara, although it absorbs considerable water, will not allow much to pass through it; and although its dip is north and east, its upper surface is eroded and slopes a little to the east and south; so that the lower tertiary, the most important water-bearing stratum in Kansas, dips east and south, bringing water into the rivers instead of taking it from them. Most of the streams in western Kansas have no permanent water in them until they have cut through the tertiary grit, as it is called.

Millions of cubic feet of water are annually going to waste in the Arkansas river. Can this water not be stored on Kansas soil? Not in the ordinary way by constructing a dam across the valley. Is there no other way of storing it? There are nine canals in west-

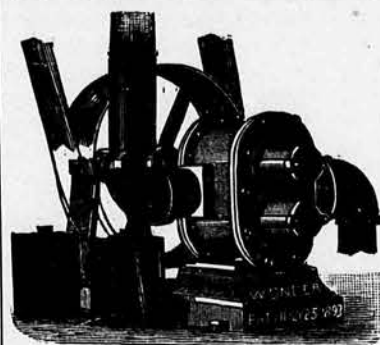


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ern Kansas taking water from this river. Their combined capacity is about 2,200 cubic feet per second, equaling 4,400 acre feet per twenty-four hours, or seven square mile feet per twenty-four hours; that is, the water which these nine canals will take from the river each twenty-four hours, when working at full capacity, will fill a reservoir one mile square to a depth of seven feet. This is a good-sized reservoir and these canals will fill it once in twenty-four hours.

One objection to these canals is that they are too long, the reservoirs are too far from the river, and there is too great a loss of water between river and reservoir. Another fault is that the dams are not strong enough to divert a large amount of water into the

wet all the time, as if they get dry or freeze they crack. The sides and a part of the bottom of a reservoir storing rain water will be dry a part of the time, and will leak some. By increasing the depth of the reservoir the surface exposed to evaporation is decreased and the rate of evaporation somewhat diminished.

To the losses from the reservoir must be added those from the ditch carrying the water to the land.

The outlook for the storing of water in western Kansas is not very promising. In the central and eastern part, where the mean annual rainfall is from five to twenty inches greater, and the evaporation loss proportionately less, the case is quite different.

I am, of course, not referring to the sub-surface water, the underflow of the large rivers, and that of the Loup Fork tertiary. These waters are already stored and only need to be brought to the surface. They are the hope of western Kansas, and yet not the only hope, for we believe that much of the surface water now unused will in the future, when the demand for it is sufficiently great, be stored and used for irrigation.

Soil Moisture.

Incidental to the prevalent discussions of the various phases of the irrigation question, the subject of saving the soil moisture is receiving considerable attention. It is interesting to note the various sides from which such subjects are approached, and the various conclusions reached, depending on the writer's point of view. Such diversities are to be expected, and great good on the whole comes from such exchange of experiences and opinions; for although each sees the subject from his own side, this interchange of views makes each somewhat conversant with the subject as a whole. This fuller acquaintance he would never get by his own unaided experiences. It is from earnest, intelligent observation and discussion that the advancement of farming interests must come. So we may expect only good from the discussions now occupying so much space in agricultural and country papers, upon the subjects of irrigation, conservation of moisture, etc.

While the subject of how to supply plants with the proper amount of moisture is one as a whole, it takes as many phases as the different persons handling it. There are, in fact, many distinct factors that go to make this one general result. A proper and full treatment of the subject would include all of them, but it is often convenient to classify and deal with one at a time. One writer thinks only how to get water on the soil. He is inclined to say that all we want is water. The rest is an easy matter. Another thinks the

DRAIN TILE

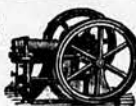
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preparation of the soil is the all-important thing. He would subsoil and plow deep, thus preparing a deep bed of earth to hold the water and the plant food and give the plant roots room to expand and amplify, so that the crop will have a large area from which to draw its supply in time of need. Another would strive by methods of cultivation to retain any water that falls upon the soil of his fields or that may be put upon it by irrigation. He observes the loss of water from throwing up the fresh earth to drying winds by deep cultivation, and the evident distress of plants from this cause, and from having their roots disturbed and broken at a time when under the most favorable opportunities the plant is sorely pressed to sustain itself. Several other phases of the same general subject are dwelt upon with equal stress. No doubt there is much in what any one of these may say on his favorite theme. But all should be considered together. The question of how to save moisture in soils, and at the same time, if possible, bring the soil to the condition that excess of water does least damage, is far broader in its application than that of bringing water upon the soil. There are many sections where irrigation will not be practiced, where rainfall is usually sufficient for the needs of crops, but which suffer at times. How to economize in the use, or rather waste, of the water in the soil, when such times come, is an important consideration. Methods of preparing soil and of tillage that will serve to keep the soil in the best condition, are then of great value in all sections—in those where rainfall is generally sufficient, and in those where irrigation must be resorted to. But it would seem to be of greater importance where water in soils stands for an outlay of money or labor, or both. Where water has cost nothing, but has fallen from the clouds, one may be excused for letting it escape in wasteful ways, perhaps, but certainly no such waste can be afforded where water costs something. The water in either case should be made to go as far as possible in growing crops.

Deep and thorough opening up of the soil is a first requisite on many soils. But here discrimination must be used. Close, compact soils will repay opening up, by the subsoil plow if need be. On some soils, green manuring or applications of well-rotted barnyard manure would be useful in improving the texture, to say nothing of their effects as a fertilizer. In seasons like this the harrow should closely follow the plow. Soil thrown up roughly dries out rapidly and becomes cloddy. The harrow and the leveler or roller should be used at the close of each day's plowing. The difference in the loss of water from soil thrown up roughly by the plow and from that which has been harrowed and planked is certainly considerable, although I have no figures upon the subject. Surface tillage at the time when crops are suffering most for water will serve to reduce loss by evaporation.

These methods are all being urged for adoption by men who would improve their farm practice. They have been abundantly justified by experience in practical operations as well as more exact experiments. We may confidently expect that as greater study is given to soil physics because of the prominence it is assuming in irrigation investigations, that our knowledge of how to save the water of our soils will be greatly increased and that the importance of such measures will be so fully demonstrated that none will question it.—Prof. G. H. Failyer, in *Industrialist*.

Mr. H. R. Hilton visited the irrigation plant of C. F. Mosch, of Chapman, Kas., just at the time of the late frosts. A part of a potato field irrigated the day before the heaviest frost was not affected, while other parts which were dry were severely nipped.

Food, when it sours on the stomach, becomes unwholesome. It poisons the blood, and both mind and body suffer in consequence. What is needed to restore perfect digestion is a dose or two of Ayer's Pills. They never fail to relieve.

Learned His Lesson.

EDITOR KANSAS FARMER:—A little hope has come to us this morning. It is raining a little, and one could wish that it would pour down and wet our thirsty earth and make the cattle happy and give us grass for summer and feed for winter. Most all of us have discharged our help; and such weeks of hot sun, dry winds, dust, frost, storms, and nearly June, with old July and August soon on deck. But in spite of all this we have some good fields of corn. And right here I wish to say the corn on the fields I listed last fall is all right—stands eight inches high, and has not suffered; while corn in other fields I did not list last fall is dead, or did not come up, or is so thin it looks like a picked chicken. Oats have suffered; wheat gave it up; grass on upland is white and dead as in December; and where, oh! where, is our springtime? But if there comes a good rain we will whack out thousands of acres of Kaffir corn and cane, as there is time for that to make itself yet, and we will stay with our cattle; and it has taught us a lesson—that our cattle are our stronghold, and the only safe business for us to follow, way out here on this sidehill in the desert, over the rain belt line. We must raise and get the growth of cattle, and let the boys in the eastern part of the State and Missouri feed them, and every dollar we can beg, borrow or find, we will invest it all in cattle and use the country for what nature made it.

If we only had the capital back we invested in interest, taxes, machinery, horses and help, it would give every farmer a nice herd of cattle to eat this free grass on our free range, and just raise alfalfa, clover, Kaffir corn, cane and millet for winter feed, we would be a prosperous, happy people. We see our mistake now, but we nearly "got busted" before we would give it up. But the good times will come again, and we shall know how to appreciate them as we never did before.

ELI BENEDICT.

Medicine Lodge, Kas.

Our 1896 Platforms.

EDITOR KANSAS FARMER:—The times are propitious for suggestions as to the platforms of 1896; and therefore "Resolved, That we demand the unlimited coinage of gold and silver at the ratio of 16 to 1."

Of course, we will have planks on transportation, land and other phases of the money question, but I desire to call particular attention to one important feature of the silver issue.

I leave out the word "free," which appears in most of the silver resolutions of the present day, and my reasons for so doing are these:

Unlimited coinage will restore silver to the place it occupied prior to 1873, and will eventually, possibly not immediately, bring gold and silver bullion to that parity claimed by some to be a necessity.

Free coinage will not add anything to silver as money, nor will it aid in advancing the price of silver bullion. It will not increase the amount of silver money in circulation. Unlimited coinage will do all that can be done.

The word "free" in the platforms carries with it the idea that the government shall not buy, coin and put into circulation the silver, but that the silver shall be coined free of expense for the silver bullion owners. This would probably be best after silver bullion has been restored to its original value, but this may not occur until we have forced Europe to unlimited coinage.

The gold monometallists will argue that as silver bullion is now not worth over 50 cents for the amount contained in a silver dollar, free coinage will give to the silver bullion holders double the present value of silver. If there is a profit in coining silver, above its general market value, that profit should go to the government.

To place the word "free" in the silver planks of 1896 will do the friends of silver no good, but will greatly jeopardize and prejudice our cause by giving to the goldites the only effective argument they can find against restoring silver to its rightful position as a money metal. W. T. FOSTER.

St. Joseph, Mo., May 20, 1895.



If so a "Baby" Cream Separator will earn its cost for you every year. Why continue an inferior system another year at so great a loss? Dairying is now the only profitable feature of Agriculture. Properly conducted it always pays well, and must pay you. A De Laval Separator would save you \$10. to \$20. per cow per year, and there can be no question about it. All styles and capacities. Prices \$75. to \$200. Send for new 1895 catalogue. Beware of cheaply constructed, inferior, and patent infringing machines.

THE DE LAVAL SEPARATOR CO.,

Branch Offices:

ELGIN, ILL.

General Offices:

74 CORTLANDT ST., NEW YORK.

A Novel Scheme.

YANKTON, S. D., April 26.—A number of farmers living ten miles west of this city have established a telephone system, covering eight miles of wire. The farms in this vicinity are surrounded by barb wire fences. Each farmer is supplied with a transmitter at his house, connected with the middle wire of the fence. The staples have been removed from the wire and insulator fastenings substituted. A cell battery has been constructed, and now the farmers are able to converse with each other. The expense for the entire system will not exceed \$25.—*Argus-Leader*.

Campmeetings.

The campmeeting season approaches. The announcement is made that Wesleyan Methodists will hold a State campmeeting at Norton, Norton county, Kansas, beginning June 5, and will continue over two Sabbaths. Everybody that wants to enjoy an old-fashioned Methodist campmeeting is invited to come with tents, covered wagons, etc. G. B. Howard, President of the Kansas conference of said church, states that the Rock Island railroad will carry all passengers to and from this meeting, west of Bellville and east of the Colorado line, at one fare for the round trip.

An inter-denominational campmeeting will be held in the Topeka city park, July 15, 1895. Full particulars will be given in a few days.

Agents wanted for Gearhart's Family Knitter. For particulars address J. E. Gearhart, Clearfield, Pa.

Half-Rate Excursions to South Missouri, Arkansas and the Southeast.

On May 21 and June 11, round-trip tickets to south Missouri, Arkansas and the South and Southeast, via the Memphis Route, Kansas City, Ft. Scott & Memphis railroad, will be sold at rate of one fare, with minimum rate of \$7. Tickets available for stop-off at intermediate stations. For detailed information, time schedules, and printed matter descriptive of the great stock-raising and fruit-growing sections of Missouri and Arkansas, address

J. E. LOCKWOOD,
G. P. & T. A., Kansas City, Mo.

Half Rates.

Half railway rates to Pan-American Congress of Religion and Education, at Toronto, Canada, July 18 to 25, 1895.

The Pan-American Congress of Religion and Education will be held at Toronto, Canada, July 18 to 25, 1895. Rev. Samuel G. Smith, D. D., of St. Paul, Minn., is President. The congress will be composed of representatives from every country, province and State in North and South America, including Protestants, Roman Catholics and Hebrews. The congress will consider the great moral and social questions of the day. Many of the highest dignitaries of church and state, and prominent philanthropists, have promised to participate.

The congress will have the following sections: (1) Authors, Editors and Publishers; (2) Education, including Colleges and Church Schools; (3) Philanthropics, Hospitals, Asylums, Homes, Reformatories, etc.; (4) Woman's Work, Temperance Rescue Work, etc.; (5) Denominational Section; (6) Young People's Societies and Sunday Schools, Kindergartens, Missionaries, etc.

It is expected there will be 7,000 delegates. Cities, counties, churches and benevolent societies are asked to send delegates. Each section will hold a session each afternoon, besides the general sessions forenoon and evening.

The terminal railways leading to Toronto have granted a half-fare rate (plus \$1 Pan-American membership fee), and all other railways in North America are asked to grant the same rate. Board and lodging at private house \$1 and up, at hotels \$2 and up. Toronto is a charming city on Lake Ontario, forty-five miles from Niagara Falls. Very low excursion rates to all points of interest by lake, river and rail.

For particulars about rates, routes and program, write to General Passenger Agent of nearest railway, or address S. Sherin, Secretary, Headquarters, Rossin House, Toronto, Ontario, Canada.

No Change to Chicago.

The through service offered the traveling public by the Union Pacific system and Chicago & Alton railroad is unsurpassed. The Perfect Passenger Service of the C. & A. with the well-known excellence of the service of the Union Pacific assures the traveling public that they "are in it" when they patronize this popular joint line from Denver to Chicago and intermediate points. Pullman Palace sleeping cars, dining cars and free reclining chair cars without change.

For all information apply at 525 Kansas Avenue, F. A. Lewis, City Agent, Topeka.

The Home Circle.

To Correspondents.

The matter for the HOME CIRCLE is selected Wednesday of the week before the paper is printed. Manuscript received after that almost invariably goes over to the next week, unless it is very short and very good. Correspondents will govern themselves accordingly.

THE SUPPER OF ST. GREGORY.

A tale for Roman guides to tell
To careless sight-worn travelers still,
Who pause beside the narrow cell
Of Gregory on the Caetan Hill.

One day before the monk's door came
A beggar, stretching empty palms,
Fainting and fast-sick, in the name
Of the Most Holy asking alms.

And the monk answered: "All I have
In this poor cell of mine I give—
The silver cup my mother gave;
In Christ's name take thou it, and live."

Years passed; and called at last to bear
The pastoral crook and keys of Rome,
The poor monk in St. Peter's chair,
Sat the crowned lord of Christendom.

"Prepare a feast," St. Gregory cried,
"And let twelve beggars sit thereat."
The beggars came, and one beside—
An unknown stranger with them sat.

"I asked thee not," the Pontiff spake,
"O stranger; but if need be thine
I bid thee welcome, for the sake
Of Him who is thy Lord and mine."

A grave, calm face the stranger raised,
Like His who on Gennesaret trod,
Or His on whom the Chaldeans gazed—
Whose form was as the Son of God.

"Know'st thou," he said, "thy gift of old?"
And in the hand he lifted up
The Pontiff marvelled to behold
Once more his mother's silver cup.

"Thy prayers and alms have risen and bloom
Sweetly among the flowers of heaven.
I am The Wonderful, through whom
Whate'er thou askest shall be given."

He spake and vanished. Gregory fell
With his twelve guests in mute accord
Prone on their faces, knowing well
Their eyes of flesh had seen the Lord.

The old-time legend is not vain;
Nor vain thy art, Verona's Paul,
Telling it o'er and o'er again
On gray Vicenza's frescoed wall.

Still wheresoever pity shares
Its bread with sorrow, want and sin,
And love the beggar's feast prepares,
The uninvited guest comes in.

Unheard, because our ears are dull,
Unseen, because our eyes are dim,
He walks our earth, The Wonderful,
And all good deeds are done to him.

—John G. Whittier.

Written for KANSAS FARMER.

HOW JACK MADE HIS FORTUNE.

BY MARIA D. McLARTY.

Jack Colburn was in a very bad state of mind as he sauntered up the lane to the farm-house, in which he lived alone with his parents, for he was an only child and idolized by the old couple, who thought there was no one quite like "our Jack," and Jack had always been a good and dutiful son, loving his father and mother and doing all in his power to make them happy. But a cloud had arisen in Jack's life, and although no bigger than a man's hand at first had grown so large that it was almost ready to burst on this particular afternoon in which my story opens. The cause of this came in the shape of a gay and dashing young man who was on a visit at a neighboring farm-house in the vicinity where Jack lived; and this young man had so drawn upon Jack's imagination and painted such glowing pictures of city life and told of the wonders to be seen at the theater, and had sported such flashy clothes and cheap jewelry that it had completely dazed poor Jack.

Jack did not know that this hero of his was only a poor clerk in the city on a salary of eight dollars per week, and that he never lived so well as when he came to visit in the country. Not knowing this Jack believed everything this young man told him, and it pleased the young man greatly to think how easily Jack "swallowed" everything he related. He was not really bad and did not mean to hurt Jack, but it was the only opportunity he had to spread himself, because, alas, he knew it would soon end—when he got back to the city he would have to drop all his airs and get down to the stern realities of life again. If young men would only be honest and not boast so much and impose upon the credulous, how much evil could be averted.

The outcome of it was that Jack had made up his mind to leave home and go to the city to live. He did not seem to think of what he should do after he got there; he had an idea that some big position would be offered and that he should receive a big salary and come home every summer to astonish the country boys and girls. Jack winced when he thought of the girls, for there was one sweet, simple little girl that he thought a great deal of, and before the young man came Jack had secretly thought of adding one more to the dear old home. But all that was changed now; his thoughts were of the dashing city maidens whom he should meet in the enchanted palaces where he would visit. Little Ruth must

be forgotten, although he would bring her a present when he came home the next summer.

The supper bell had rung and Jack stalked in and took his seat without noticing his mother or father. He dreaded the ordeal of telling them that he should go away, for he knew it would nearly break his mother's heart, as he had never been away a day in his life. But Jack thought it was best to have it over with, so he blurted out: "Father, I am going to the city to live, but I will be good to you and mother and send you plenty of money, so you won't need to raise anything or work the farm at all." After Jack had delivered this speech he felt as if he had done his duty and was not reasonable for it if his mother was sobbing as if her heart would break. He was not a baby, and then women were all soft; his friend had told him so. Jack's father adjusted his glasses and calmly surveyed his son. The old man had seen how things were drifting for some time, but had said nothing about it. He was very sorry to see his son so carried away by foolish ideas, but his thoughts flew back to a time in his own life when he had thought just as Jack was now doing, and, oh! what a grand lesson he had been taught! It had made a man of him, so he thought it best that Jack, too, should have a lesson, and God grant that it would bring him out a wiser and better man. So Jack was quite surprised when his father said calmly: "All right, my son; go and profit by what you shall see. I shall be only too glad to live on your bounty the rest of my life and not have to worry as to whether the crops fail or not. It will be very nice, I am sure, and an improvement on the way we now live." Jack felt somewhat elated at this latter speech of his father's and thought himself more of a hero than ever, so he said: "All right, father; I think I had best go as soon as possible. I will go and pacify mother now."

This was Jack's hardest task. He felt very guilty when he saw the bowed head of his mother and the dear old cheeks all wet with tears. He almost repented of his rash notion, but the glare of the city blinded him to all other emotions; so he said brusquely: "Mother, have my clothes ready by to-morrow, as I wish to go by noon." He then went out, not waiting for his mother to reply, for he hated to have a scene, as he called it, although there was a tear glistening in the corner of his eye, which he hastily brushed away on seeing some young friends of his coming up the lane, and he straightway began to tell them of his intention of going to the city, while they listened open-mouthed to his revelations until they, too, wished they might go, when one, more shrewd than the rest, said: "Boys, let's wait till he has tried it first and then we'll all go." They all wished Jack good-bye, after numerous handshakings, and pleas for letters, all of which Jack promised, for he knew it would be edifying to those "rough boys," as he already called them, to hear from him.

Jack started the next day, with his best suit of clothes on and a large bundle and several small ones done up by his mother and his pockets full of keepsakes from the boys and girls of the neighborhood.

We will not dwell on Jack's arrival in the city. We will leave the reader to imagine how horribly lonesome he felt and even frightened at so many people, and how differently they were dressed and how rudely they acted, he thought, passing and jostling each other, and when he politely stood aside to let the crowd pass, he wondered why they smiled with pity, while the gamins shouted, "Get onto the jay!" He wondered where the jay was, that he might get on to it. Poor Jack! His eyes were indeed destined to be opened. We will not dwell on the misery of the ensuing weeks of Jack's stay in the city; how he plodded the streets in his thick shoes, looking for the position which was to bring him fame and fortune. With so many smart city young men out of employment there was no chance for him with his uncouth ways and appearance. No big sums of money were sent to his father and no glowing letters to the boys, but one day a sorry spectacle alighted at the little country station, and Jack, with downcast eyes and a dirty, travel-stained bundle (minus the small ones), made his appearance, just one month from the day he started, and we are glad to say, a much better and wiser boy, with all the air-castles taken from his brain.

Oh, how the dear mother and father did welcome him home, and how the father, with a merry twinkle in his eye, said: "Jack, my boy, how about the crops?" How Jack did enjoy his mother's home-made bread for supper that night, and the nice, comfortable kitchen, and the mother knew, although no word had been spoken, that she would not lose her boy again. Jack felt ashamed to meet the boys of the neighborhood, but they all flocked to see him and be made a clean breast of the whole thing, and if the "dude" from the city comes next summer he will get a warm reception from the country boys. The shrewd one stuck his hands into his pockets and shut one eye and said: "I'll tell ye what, boys, I'll be blamed if 'tain't allus best to wait."

Highest of all in Leavening Power.—Latest U. S. Gov't Report

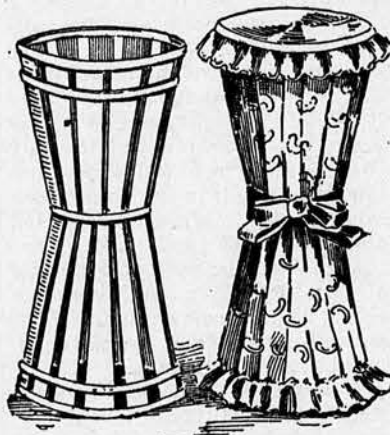
Royal Baking Powder

ABSOLUTELY PURE

FANCY WORK BASKET.

Two Medium-Sized Peach Baskets Constitute Its Foundation.

A standing work basket is such a comfort when one sits down to mend or sew. First of all, because it is more capacious than the ordinary little basket. Then it is such an independent sort of an institution, being able to stand alone, that it quite relieves its



A FANCY BASKET.

owner of the many little attentions she must bestow on the unpretentious small basket. A very convenient and attractive basket may be made at home, using two peach baskets, as shown in cut. The lower one may be left unfinished inside, merely serving as a support. The upper one should be lined inside, and furnished with numerous pockets and a cushion or two for needles and pins. Cover the outside with pretty cretonne or silkoline, putting a band and bow where the two baskets meet. The top is made of a long, straight piece of the right width to gather up in the center with a draw-string, the other edge being fastened under the upper frill. The draw-string should be long enough to let all the fullness out, so that the top may be turned down on the outside when the basket is in use.—Rural New Yorker.

TOP BUREAU DRAWER.

Said to Be an Absolute Revelation of a Woman's Character.

Harriet Holt Cahorn says that a woman's bureau drawer—the top drawer, that either is or is not a catch-all—reveals character more than any of her possessions, and I could almost tell her fortune by looking into it. Is it a potpourri—gloves, laces, hairpins, frizzes, collars, letters and a hundred other things? This denotes an uneven, unsystematized, happy-go-lucky life, one that fate loves to pursue. The orderly woman who establishes a standard for people to live up to always keeps this bureau drawer in order. Her life is of the tranquil kind. The woman who fills her bureau with boxes possesses an excess of order that makes life a burden

to the ones who live with her. She is conservative and not very adaptable nor tolerant. While order is the first lane to Heaven, order does not by any means produce Heaven. However, the bureau drawer never poses. You may profess sentiments that are not yours, and your milliner and dressmaker lend you a personality which you do not possess, and pose successfully for what you are not; you can buy correct books and pose for a litterateur by living up to their bindings. In your house and its furnishings you can buy artistic effect and harmony of color and grand pictures, and even the atmosphere that belongs with these evidences of culture will hover about. You can have a Louis Quinze room without knowing why you have it, and you can buy your coat of arms and your antiques and your ancestors, and you may escape the soul of all that they represent and the world will be none the wiser. But let the world have a peep in the top drawer of your dressing table and it will find out things about your real character of which it has never dreamed.—Philadelphia Times.

Hall's Hair Renewer enjoys the confidence and patronage of people all over the civilized world, who use it to restore and keep the hair a natural color.

Union Pacific Route.

What you want is the through car service offered between Denver and Chicago via the Union Pacific and Chicago & Alton railroads, which is unexcelled by any other line. Magnificent Pullman sleepers, dining cars and chair cars, run through daily without change, Denver to Chicago via Kansas City.

Important Change of Time.

The new service on the Nickel Plate Road goes into effect on Sunday, May 19. Three trains will be run in each direction, leaving Chicago going east at 8:05 a. m. daily except Sunday, 1:30 and 9:20 p. m. daily. No change of cars between Chicago and New York in either direction. Also through sleepers between Chicago and Boston. Superb dining cars are a feature of the new service. Rates always the lowest. City ticket office, 111 Adams street, Chicago. Telephone main 389.

That Trip East

May be for business or pleasure, or both; but pleasure comes by making a business of traveling East over the Santa Fe Route as far as Chicago.

Thirty miles the shortest line between Missouri river and Chicago; that means quick time and sure connections.

Track is straight, rock-ballasted, with very few crossings at grade.

No prettier, cozier, or more comfortable trains enter Chicago than those over the Santa Fe. They are vestibuled limited expresses, with latest pattern Pullmans and free chair cars. Meals in dining cars served on plan of paying for what is ordered.

Inquire of nearest agent, or address G. T. Nicholson, G. P. A. Santa Fe Route Monadnock building, Chicago, or W. J. Black, A. G. P. A., Topeka, Kas.



Get a Glass! Quick!!

There's lots of snap and vim in this HIRES' ROOT-BEER. There's lots of pleasure and good health in it, too. A delicious drink, a temperance drink, a home-made drink, a drink that delights the old and young. Be sure and get the genuine

HIRES' Rootbeer

A 25 cent package makes 5 gallons. Sold everywhere.

The Chas. E. Hires Company, Philadelphia, Pa.

The Young Folks.

LEARNING TO SEW.



MY GRANDMAMMA says that the Right way to sew is to put little stitches Along in a row. That sounds very easy, I almost know That some spec- tacles and things would Help me to sew.

I try very hard now, but Isn't it slow? The stitches won't half of them Stay in a row. I'm sure as can be that the People don't know What very hard work 'tis to Learn how to sew.

I'll do like my grandma; I'll Sing soft and low— Put my foot on a stool—make My rocking chair go— And put on her spec'les—then Stitch, stitch, oh, ho! I think I've found out how to Learn how to sew

—New York World.

CHANGE.

In jocund youth life seemeth passing sweet—
Passing sweet!
Thought cometh tuned to rhythmic utterance,
Grief doth avert her pallid countenance.
Death? 'Tis a specter to be eyed askance!
Time is a laggard, he he ne'er so fleet;
Youth waiteth Love to make glad life complete—
Life complete!

In saddened age Death comes, a longed-for boon—
Longed-for boon!
Thought hath a power to thrust a venom'd dart,
Joy was a guest that came but to depart;
Grief bideth all alone within the heart!
Life is a load that cannot be lost too soon.
Love? 'Twas sweet music, strangely out of tune—
Out of tune!

—Amy Elizabeth Leigh, in Kate Field's Washington.

THE GREAT WALKELIN.

How He Got the Timber for the Roof of Winchester Cathedral.

Have you ever heard of the Great Walkelin who built the cathedral at Winchester, and how he got the timber which is still in the roof of the cathedral? It is rather an odd story and I will tell it to you, as it was told to me by the verger when I was at Winchester—and told, indeed, while we walked in the loft among the very beams and rafters in question.

William the Conqueror was a king who loved his trees, and would hardly part with any of his timber. When the bishop was building the cathedral he came to the king and asked leave to cut wood from the forest of Hempage, to finish the noble work he had carried on for many years.

"Wood from my forest of Hempage! Nay, that you cannot have," said King William.

"But, sire, how can I make a roof for my cathedral without timber? Will your majesty grudge the trees of the forest to the house of God?" said the bishop, fearlessly.

The king did not want to yield, but bishops in those days were formidable enemies, before whom many a king had trembled. The bishop urged his claims, and may have even used threats, until at length King William said: "Go, then, my lord bishop, and take as many trees as you can fell in a day—but no more." The bishop went gladly, and coming to his domain, which was like a little kingdom, over which he had absolute power, he mustered his liegemen and retainers for a grand wood-chopping expedition. At the bishop's palace hundreds of men were daily fed, and he could bring thousands in the field in time of war, for everyone in his see was subject to him—"in mind, body and estate." He must have summoned all his subjects that day, for never was such a wood-cutting known in England.

To the forest they went in an army and chopped from the rising of the sun till night descended, and at the end of the day not a tree was left standing in the wood. Not a tree? Yes, one was kept sacred from the marauding ax because under its boughs St. Augustine had preached to the Britons in days long gone by even then. The Gospel Oak, as it was called, still stands, pro-

tected by an iron railing, the sole relic of the ancient forest which the bishop of Winchester laid low "for the house of God." Truly the bishop was a "muscular Christian." For all I know he laid aside his robes and miter and wielded the ax that day himself. He was a firm believer in exercise, as another tale will prove.

The cathedral is not the only monument to this great man. With his enormous revenues he founded and built a college at Oxford, called the "New college." It was built before America was discovered. He also endowed the famous boys' school at Winchester, and made many rules whereby the safety and health of the scholars were to be secured. One of these was that the boys should walk to the top of a high hill, some distance from the school, three times every day. There is a worthy pastry cook living near the foot of this hill, who until recently, when the rule was abolished, used to go up



AT THE END OF THE DAY NOT A TREE WAS LEFT STANDING.

the steep path after the boys with trays of his wares, and no doubt found a good market among the tired little fellows. How they put the walk in three times I cannot imagine—think of it, girls and boys, sometimes when you are disposed to grumble at errands around the block.—Chicago Inter Ocean.

Jack Hare, Not Jack Rabbit.

If you say jack hare to a Texas cowboy, he will laugh at you, and then ask if you mean a "jack rabbit." But your name will be the right one, even though every man, woman and child in the land of Lepus callotis calls him a rabbit, and shall to the end of time. But whenever or whatever you call him, you must do it quickly, or he will be out of hearing. Some say the jack hare is all ears; but that is not literally true, for his make up includes a pair of uncommonly good hind legs also. His ears are from five to six inches in length, but his hind legs often measure across a township. In point of size, this species has the greatest length of head and body of all the American hares, measuring from twenty-two to twenty-eight inches; but it is more slenderly built than the polar hare.—W. T. Hornaday, in St. Nicholas.

Strength of a Jumping Mouse.

In proportion to its size, I believe the jumping mouse is the most active and powerful of all vertebrate animals. This tiny creature—no larger than a man's thumb—is from two and a half to three inches in length, with a tail about twice as long as the head and body. It is therefore no larger than a house mouse, but it has light forequarters, strong hindquarters, very long hind legs—and it can jump from eight to ten feet! If a mouse weighing two ounces (average) can jump ten feet, how far should a one-hundred-pound boy of equal agility be able to jump? Figure it out for yourself, and when you have obtained the correct answer you will properly appreciate the hind legs of this wonderful little mite.—W. T. Hornaday, in St. Nicholas.

A distinguished professor was one day playing golf, and his skill and luck were so poor that he lost his temper, and, turning to one of the college gardeners, exclaimed: "How is it that I, a man acquainted with all the arts and sciences and the dead and living languages, cannot play this confounded game of golf?" "Well, sir," said the man, politely, "it's just this: You may know a great deal about small affairs and have a lot of book-learning, but it takes a man with a head to play golf."

CAGING WILD BEASTS.

How the Animals Are Handled at Jamrach's in London.

A writer who paid a visit to Jamrach's wild beast establishment in London has this to say:

Now, there are at the moment I am writing two beautiful Bengal tiger cubs in one of the cages. The cubs are old enough to be dangerous, so if I tell you the way I saw them put in the cage they now inhabit you will know a little of how wild animals are transferred from one place of confinement to another.

The boxes that tigers and lions come in are not very big—just big enough to allow the inmates to lie comfortably. This, besides saving freight, prevents the animal from using his full strength, and perhaps, in case of fright or frenzy, from bursting the box.

Well, the box with the tiger cubs was placed in front of and partly in the open cage. A sliding door in the box was then lifted, and the cubs darted forward at the meat that was lying in the far corner of the cage to tempt them. Meanwhile the box was quickly withdrawn and the barred gate of the cage as quickly shut.

It is easy, however, to transfer an animal from a confined box to a large cage. He is going then from captivity to comparative liberty. It is not so easy—indeed, it is extremely difficult—to get him to go through the reverse process, to walk from a large cage into a box. If there be time, he can always be made to do it quietly enough.

Give him no food in the large cage, but put it in the box. He may even hold out for days; hunger, however, will prove in the end stronger than his fears, and he will, with a growl, make a dash for the joints, when the trap will be closed against him.

It isn't always possible to wait for hunger to make him submit. Perhaps the animal is wanted to-morrow, and the dealer has got the order only to-day, and must catch the train with him at four o'clock in the afternoon. What is to be done now?

Here man's superior intelligence shows itself. It is fear that prevents the animal from entering the box, and this fear must be overcome by a greater fear. This is an easy matter to the animal dealer with his knowledge of animals.

He simply sets light to a little bundle of dry straw in the cage; this is enough—the animal's fear of fire makes him fly at any outlet of escape.—Little Folks.

RESPECTFUL PUSSY.

How She Got Even with a Guest Who Had Insulted Her.

Blossom is a big gray cat. She has been in the family for seven years, and her mistress thinks she was fully ten when she came uninvited and took possession. Her charms made her welcome, and visitors, as a rule, pet her to her heart's satisfaction. Still, she shows her loyalty to her mistress by many feline felicities. One day a young man came for a short visit. He was an inveterate tease. As there was no one else for a victim, he took Blossom in hand, in spite of pleadings and protestations. Her ears were greeted with the strange terms, "Old rascal," "Scapegrace," "Tramp," and kindred names, until the astounded cat did not know what had come to her. Her pretty ways disappeared, she fled from his approach, and hid whenever she could till

You see them everywhere.



Columbia Bicycles

—\$100—

COLUMBIAS are the product of the oldest and best equipped bicycle factory in America, and are the result of eighteen years of successful striving to make the best bicycles in the world. 1895 Columbias are lighter, stronger, handsomer, more graceful than ever—ideal machines for the use of those who desire the best that's made. HARTFORD BICYCLES cost less—\$30, \$50. They are the equal of many other higher-priced makes, though.

POPE MFG. CO.

General Offices and Factories, HARTFORD, BOSTON, NEW YORK, CHICAGO, SAN FRANCISCO, PROVIDENCE, BUFFALO.

Columbia Catalogue, telling of both Columbias and Hartford Bicycles, free at any Columbia agency, or by mail for two 2-cent stamps.



WM. TAYLOR,

Agent for Columbia and Hartford Bicycles TOPEKA, - KANSAS.

he was out of the house. One morning she was missing for some hours, and was not to be found in any of her hiding places. A loud cry from the chambermaid revealed her whereabouts. Blossom had revenged herself on the visitor's nightshirt, which lay in tatters on the floor. Pussy was scolded, and everyone was cautioned to keep the door shut. In vain! The cat would find her way in and hide till the chambermaid was through for the day, and then the claws went to work, first on the visitor's own clothes if any could be found, and then on the pillow cases. The young man tried to soothe her feelings, but she would have none of him, and he was glad to cut short his visit. Blossom quickly recovered her usual demeanor, and has never been known to destroy anything from that day to this.—Boston Transcript.

\$100 Reward \$100.

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

Address, F. J. CHENEY & CO., Toledo, O. Sold by Druggists, 75 cents.

Half Rate.

May 21 and June 11 the Missouri, Kansas & Texas Railway Company will sell tickets at one fare for the round trip, to points in Texas, Lake Charles, La., and Eddy and Roswell, N. M., tickets good returning twenty days from date of sale. For further information address

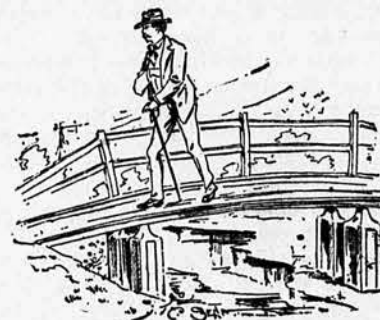
G. A. McNUTT, 1044 Union Ave., Kansas City, Mo.

Bridge of Life.

January 15th, 1895.

The Dr. J. H. McLean Medicine Co., St. Louis, Mo.

Gentlemen: I am not a believer in the use of patent medicines, in the ordinary meaning of the term. But a few of the most popular I have examined into and learned their ingredients. Among these is your Strengthening Cordial and Blood Purifier, and I take pleasure in stating that I found it a superior preparation and have used it myself with the most gratifying results.



Some years ago I had a severe attack of malarial fever, which left me exceedingly weak and feeble. I was persuaded to try your Cordial, and began at once to get strong. It gave me an appetite, caused my food to digest and my bowels to act regularly. Three bottles restored me fully to my former robust health. I regard the Cordial as "The bridge that carried me safely over a crisis," and praise it accordingly. I frequently prescribe it to my patients, especially those who suffer from female complaints or are convalescing from a long attack of fever. It has been used advantageously in every case.

Yours truly,

CHAS. W. WATTS, M. D., MEXICO, MO.

KANSAS FARMER.

ESTABLISHED IN 1863.

Published every Wednesday by the
KANSAS FARMER COMPANY.

OFFICE:

No. 116 West Sixth Avenue.

SUBSCRIPTION PRICE: ONE DOLLAR A YEAR.

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

Address **KANSAS FARMER CO.,**
Topeka, Kansas.

ADVERTISING RATES.

Display advertising, 15 cents per line, agate, (fourteen lines to the inch).
Special reading notices, 25 cents per line.
Business cards or miscellaneous advertisements will be received from reliable advertisers at the rate of \$5.00 per line for one year.

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

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, Kas.

If you want one of the finest magazines published, send us \$2.25 for *KANSAS FARMER* and *Cosmopolitan*.

It is stated that in some sections farmers are holding their wheat reserves for \$1, and will not sell for less.

The alfalfa harvest in western Kansas was well under way last week. There will be three more harvests of this crop from the same land this season.

We want our readers to secure for us thousands of new subscribers for the *KANSAS FARMER* and we will pay well for such work. If you will get up a list, write this office for liberal terms.

The doings of the grain markets are peculiar. Wheat was shipped from Chicago to Kansas City last Wednesday. On the same day Topeka millers talked of drawing on Kansas City for supplies.

The twenty-ninth annual premium list of the Nebraska State fair is the first of the State fair lists to make its appearance for 1895. The date is September 13-20. This book shows the expectations of the managers to be for a big exposition. They are seldom disappointed.

VALUABLE BULLETINS.

By courtesy of Senator Pepper, the *KANSAS FARMER* has secured a supply of the following valuable bulletins of the United States Department of Agriculture: No. 3, "Culture of the Sugar Beet;" No. 9, "Milk Fermentations;" No. 15, "Potato Diseases;" No. 16, "Leguminous Plants;" No. 19, "Important Insecticides;" No. 21, "Barnyard Manure;" No. 22, "Feeding Farm Animals;" No. 24, "Hog Cholera;" No. 26, "Sweet Potatoes;" No. 27, "Flax for Fiber and Seed;" No. 28, "Weeds, and How to Kill Them."

Any reader of *KANSAS FARMER* can, as long as they last, secure a copy of either of these or the entire list by addressing *KANSAS FARMER*, Topeka, Kas.

Wool Markets and Sheep, of Chicago, is the name of the consolidated *Wool and Hide Shipper and Wool, Mutton and Pork*. The management, which is capable, proposes to make it a practical and interesting journal for Western sheepmen and is entitled to their hearty support. In a recent letter the editor says: "It is our intention to make this the representative publication of its kind in the country, and if you will kindly take notice of the editorial page you will see the policy we intend to pursue. Our wool market reports can be depended upon as reliable and the most authentic published, as our representative pays a personal visit to all of the leading wool houses each week in securing this information." Send \$1.25 to us for a year's subscription to the *KANSAS FARMER* and *Wool Markets and Sheep*.

WHY THE SACRIFICES OF THE SOLDIER?

In these days of close scrutiny and rigid exaction as to the course of those in official position, so much criticism is indulged, that people, whose modes of thought do not lead them to close discrimination, have fallen into the habit of thinking lightly of the value of the institutions through which government in this country is effected. The question has, therefore, arisen as to whether the late war for the preservation of the government was worth fighting, and, incidentally, whether the soldiers who placed their lives between the government and its enemies really did a very commendable act; whether, after all, Decoration day is not something of a mockery. By others, who see little below the surface, it is supposed that the only really tangible results of the war were, first, the destruction of very many valuable lives, and, second, the liberation of some five millions of slaves.

These views are entirely too shallow. Civilization and civil government have been products of slow growth and they have progressed together. Their achievements have been at the cost of tremendous effort, bitter contests and terrible sacrifices. Their results, whose values have been questioned by the thoughtless, can only be realized on contrasting the conditions under which we live with those in lands where the laws of civilization are unknown, where bandit robbers rule, where the tenure of life itself is subject to the caprices of irresponsible rabble or of usurping authorities.

The American government was wisely built upon the progress which had preceded it, by patriots who realized the gravity and importance of their work, and who knew that, if they build well, their posterity would be great beneficiaries, and who knew that, as in all history, the selfish, the crafty, the avaricious, the ambitious, would attempt to use the powers conferred upon government for their own ends rather than for the general welfare. They intended to provide such safeguards against this as wisdom suggested.

This government, so founded and so constituted, was attacked, in 1861, by those who saw, or thought they saw, that its machinery would ultimately be used to exterminate human slavery from the land. The rebels sought to destroy the government. The results which must have followed their success cannot here be detailed. That unsettled conditions must have prevailed is to be inferred from all history. That insecurity, that the destruction of the confidence necessary to prosperity, that more or less of anarchy in many places must have followed, that our properties, our homes, our liberties and our lives must have been jeopardized, is the belief of the thoughtful.

To avert these consequences, and to transmit to their children, unimpaired, the liberty, the security, the opportunities which the effort of ages had provided, the soldier of 1861 went to the war. He succeeded. Incidentally, a relic of barbarism which had crept into our institutions—human slavery—was destroyed. This incident is the most easily seen direct result of the soldiers' sacrifice. It is a result, however, which must soon have come about had there been no war. The most valuable result is the preservation and the strengthening of the government and the institutions under which civilized life may go forward in peace and security, and under which the people may make such modifications as become needful, and that without the dire resort to armed revolution. For the sacrifices they made to attain this, the present and future generations owe a debt of gratitude which can be but feebly expressed by the annual decoration with flowers of the graves of those who presented themselves to the shock and carnage of war for this cause.

The seventy-sixth birthday of Queen Victoria was celebrated in England and her dependencies last Friday. She has reigned fifty-eight years and is the

oldest reigning sovereign in Europe except the King of Denmark. Her reign is longer than that of any of her contemporaries. She is the ancestor of fifty-six princes and princesses. The present Emperor of Germany is her grandson and her descendants are married into very many of the royal families of Europe. A few days ago the mother of the young Queen of Holland accompanied that exceedingly wealthy and reputed beautiful young maiden to England for the supposed purpose of betrothing her to one of Victoria's grandsons.

COBURN APPRECIATED.

There come to the desk of the editor of the *KANSAS FARMER* each week the leading agricultural journals of the entire country. Two come also from England and one from Australia. The editors of these many papers are constantly on the look-out for all that is valuable in official publications, and elsewhere. No one authority is so widely and so often quoted as the Secretary of the Kansas State Board of Agriculture. So familiar has his name become that many writers assume that it is unnecessary to specify his office at length, but refer to him simply as Secretary Coburn, of Kansas. No better illustration is needed of the fact that good work secures its own recognition.

The *Colorado Farmer*, of last week, gives, editorially, a fair sample of the appreciation of the good work of our Secretary, as follows:

"One of the most indefatigable workers in our American ranks is F. D. Coburn, Secretary of the Kansas State Board of Agriculture. In farming matters he is a boomer—not of farms, but of farming. He stirs things around lively. Would the country had more like him. Farmers need poking up, but the pity of it is those who need it most get it least. They take no papers and read no books to help them out of the ruts. They are worse, if possible, to move into new light than lawyers or ministers. The old ways and 'precedents' are good enough for them and so they go hugging shallow plowing and bad cultivation like children their toys. But we started out to tell you about Coburn's Ninth Biennial Report of the Kansas State Board of Agriculture. It has 530 octavo pages, accompanied with numerous tables, maps and illustrations of much value. Every interest of the State is brought under review and ably presented. Many interesting subjects are treated, but there are two matters discussed of more than ordinary interest—alfalfa and the problem of irrigation. There is an earnestness about this report that fires the reader and inspires him with new hope for farming. The State of Kansas gives this book away, but asks the recipient at least to pay the postage, which is 20 cents, but the book is worth ten times the amount. Do yourself the benefit of sending for a copy. Give us more Coburns and fewer Mortons and farmers will 'get there.'"

ERRATIO WHEAT.

The following from last Saturday's *St. Louis Market Reporter* shows the temper of the market as to wheat:

"During the short session of two and a half hours to-day, a hot pace was kept up by the pit traders, the excitement that has prevailed since Monday's opening showing no abatement; the buying craze was more violent than ever—and a vast quantity of wheat changed hands, and the price variations were almost heart-breaking at times; off 1½ to 2½ cents in first few minutes, but the receipt of additional (and confirmatory) reports of terrible damage in the principal States (some estimating the probable yield at from three-fourths to half crop, to none at all) literally set the pit afire, and market went soaring at a startling rate—up 4½ to 5½ cents from the bottom by 12 o'clock, and 2½ to 2¾ cents over yesterday's close. The week's clearances of 2,754,000 bushels breadstuffs from the United States and Canada were 357,000 bushels larger than the week before, and 444,000 bushels more than a year ago—but traders didn't mind about that; nor did the 235,000 bushels sent out from the Atlantic seaboard for twenty-four hours elicit any particular comment; the primary receipts of 330,000 bushels, against 210,000 bushels on Saturday last and 301,000 bushels one year ago, were given only a passing thought, notwithstanding they have been much larger than last week; to-day's primary shipments were reported at 369,000 bushels; flour receipts at Western markets were 17,593 barrels, and shipments 48,000 barrels; the government's summary of foreign advices was also bullish—prospects rather poor in Russia, Germany and France, but good in Spain, Roumania and Italy. By the way, what has become of our domestic 'statisticians,' with their surpluses, re-

serves, availables, etc., of untold millions of wheat? Have they (the millions) been swallowed by earthquakes, or fed to stock? Cables were read with interest, Liverpool being quoted 1½d. lower per private wire, ½d. off on winter by public cable, but largely higher on spring—closed ½ to 1d. to 1½d. lower, Paris 10 to 20cms. off on wheat and 35cms. on flour, Berlin ¼ to 1½m. lower—but they'll be sorry, when they hear of to-day's work over here.

"The first thirty minutes saw July sell at from 77c. (the opening—very little—1½c. under yesterday) off to 76¼c. and 76¼c.—76½c. to 76c.—76¾c. to 76c. up to 77c. off to 76¾c. up to 77¼c.—a deluge of wheat coming out, and buyers snapping it up in blocks; let down to 77c.; bulged to 77¾c.; sold at 77¾c. up almost instantly to 79—78¾c. to 80—79¼c. to 80c., off to 79¾c., then at 79¼c.—79¾c. to 79¾c. before call, then at 79¾c., and afterward from 79¾c.—79¾c. up to 80c. off to 79¾c., turned up to 80¾—80¼—80¼—80¼c. to 80¾c., closing at 80¾ to 80¾c."

BOOM COMING.

That those whose interests are determined by the value of fixed incomes, whether from interest collections or from salaries, as well as the holders of all properties whose value is a determinate number of dollars, and the numerous satellites and hangers-on of these, have determined to defeat, if possible, the popular movement for the restoration of silver to its ancient place in the coinage of the United States, is an avowed and well-understood fact. The moneyed interests are just now taking a greater part in this than any other discussion and it forms a preponderating part of current argumentative discourse.

That the seriousness of the case is such as to require the propagation of a "boom" to counteract the rising silver sentiment is more than was expected. The following, from Henry Clews' circular of May 25, is significant:

"When prosperity again reigns supreme in this country, which will soon probably be the case, judging from present appearances, there will be a sufficient return of confidence to make the circulation of this \$24 per capita so rapid as to possibly make our present volume of circulating medium excessive. When this occurs, which will be very soon in my opinion, it will do more than anything else to kill the present Western and Southern silver craze. This \$24 per capita in money will be added to each year beyond doubt by at least \$50,000,000 of this country's product of gold. This will soon satisfy even those who are now calling for more silver money, that the country's supply of money will be ample to go round without diluting our money by opening the mints to free silver coinage, or by any other very questionable means of increasing this country's supply of money."

This writer has not yet denied that there has been and is a lack of prosperity under the present coinage laws. Such denial may be expected later. It will be well for the industrious to remember that the boom created for the above-named purpose is likely to be temporary and that debts contracted under boom prices will be doubly hard to pay during the succeeding depression. The man who accumulates property without also accumulating debts will be all right. The ability to resist the general tendency and the soon to be open opportunities to go into debt is the safest thing to have on deck during the boom.

No doubt natural causes will contribute to the conditions productive of a boom. Land values can scarcely fail to advance without artificial help. The opinion, that the better times, for the tiller of the soil who owns his land, is near at hand, has been freely expressed by the *KANSAS FARMER*, and yet the necessity of stolid resistance to the allurements of artificial booms is so great that this warning is thrown out to put readers on their guard against boom snares.

An Iowa farmer put a "whole lot" of soil philosophy into a nut-shell last summer when he said of the corn crop: "Everything went on swimmingly until the drought of this year struck that old drought of last year and then it wilted all at once."

Any of our subscribers who are about to renew subscription will find something interesting by reading the advertisement of "Samantha at Saratoga." If you have already renewed your subscription it will tell you how to get the book at the reduced rate.

FIGHTING INSECTS AND FUNGI.

There are insect enemies and diseases of various kinds which contest at almost every step the farmer's efforts at producing the food supplies in his fields and orchards. The knowledge of scientists and the ingenuity of mechanics have been brought into requisition to assist in the contention for the crops. The experiment stations are doing excellent work in this matter. Bulletin No. 31, of the Rhode Island station, sums up the experience of that station, as follows:

1. The fruit from the sprayed trees averaged 14.8 per cent. larger than that from the trees that were not treated, or according to the figures given on the preceding page, there were 34.1 less apples in a bushel from the sprayed trees than from the others.
2. Twenty-eight and three-tenths per cent. more of the apples upon the sprayed trees were sound than upon those that were not.
3. Among the apples examined there was upon an average 75.1 more wormy specimens per bushel in the fruit gathered from the untreated trees than the others.
4. It was noticed by both Mr. Smith and Mr. Burlingame that the apples from the sprayed trees did not decay so soon as those from the untreated trees.
5. The codling moth was the principal offender in this orchard, although the increased size of the fruit on the sprayed trees was probably partially due to the protection of the foliage, by the use of the Bordeaux mixture, from the attack of fungous diseases.
6. The treatment should have insured a more complete protection of the apples from the attack of the codling moth than it did. This may have been due to the third application having been made too late, there having been five weeks between it and the second.

Bulletin No. 40, of the Illinois station, sums up as to potatoes, as follows:

1. Corrosive sublimate treatment of seed, as a preventive for scab, with potatoes planted on uninfected land, gave not only from 8 to 34 per cent. more of sound potatoes, but also increased the yield 10 per cent. and rendered less the waste in preparation for household use.
2. Early and frequent spraying with Bordeaux mixture gave an increase of one-third the total yield.
3. Paris green added to Bordeaux mixture gave an additional increase equal to one-third those sprayed with Bordeaux mixture only.
4. In the case of spraying the benefit was due to limiting the attack of the potato bug and possibly to preventing somewhat leaf blight.

The Cornell Experiment Station holds a leading place in the study of all questions connected with the production of fruit. Following is the summary of the latest bulletin, No. 86:

1. Hand pumps have proved the most satisfactory machine for spraying apple orchards.
2. Power sprayers have proved unsatisfactory because they do not throw enough liquid, and they do not throw the spray far enough.
3. Power sprayers are excellent machines to use in spraying grapes and low-growing plants.
4. Rusty fruit was found upon Baldwin, King, Red Astrachan and Fallawater trees, but none upon Fall Pippin.
5. Four applications of the Bordeaux mixture made to King trees protected the fruit well from the scab, but it is probable that three would have been sufficient.
6. The two most important applications made for combating the apple scab consist of the one which is made just before the blossoms open, and the one made as soon as they fall.
7. If a third treatment is advisable it should be made about two weeks after the falling of the blossoms.
8. The use of three gallons of Bordeaux mixture upon bearing trees, from twenty-five to thirty years of age, seems to be advisable; for a part of the beneficial action of this fungicide may be the lessening of insect, especially curculio, injuries.
9. Former applications of the Bordeaux mixture upon the trees of this orchard appeared to possess little value in perfecting the crop this year, but all circumstances were not favorable to an accurate experiment regarding this point.
10. The early use of the copper sulphate solution may be of value if orchards are uniformly and thoroughly sprayed with it. In our experimental orchard, with unsprayed trees as probable sources of infection, the value of such treatments has not been very marked.
11. London purple possesses no fungicidal properties.
12. Former applications of arsenites appear to have exerted no influence in suppressing insect ravages during the past season.
13. If only one substance is applied to

apple orchards, it should generally be Paris green.

14. Spraying orchards in some cases increases the yield of fruit from practically nothing to a full crop, but in other cases the operation is followed by nearly negative results in this direction.

15. It is doubtless true that much of the failure of apple orchards to bear is due to the want of proper fertilization and cultivation.

16. The true cause of the formation of rusty apples is obscure, but the character of the season appears to influence the severity of the attack.

17. The Bordeaux mixture has a tendency to produce rusty fruit even when prepared according to the formula given on page 52.

18. The ferrocyanide of potassium test used in the manufacture of the Bordeaux mixture is not so satisfactory as was at first thought, for the mixture when so prepared may be injurious to the fruit.

19. Munson has shown that Paris green possesses fungicidal properties.

20. Stinson has shown that fruit sprayed three times was larger than that sprayed twice, although the per cent. of scab on both lots was the same.

21. Paris green must be applied immediately after the blossoms fall in order to be most effective against the codling moth.

22. Rust was very prevalent in Chautauqua county the past season, but apple-growers, on the whole, are well satisfied with results obtained from spraying.

23. London purple is an unreliable insecticide in some cases.

24. The failures which have occurred may be due largely to the lateness or the hastiness of applications.

25. The leaf-spot and the cracking of quinces may be controlled by the proper use of Bordeaux mixture.

26. Applications for the control of this disease need not be made so early as in the case of the apple-scab fungus.

27. The shot-hole fungus attacking plum and cherry foliage can be controlled by the use of Bordeaux mixture as described.

28. The fruit-rot of plums and peaches can be checked by the use of the fungicides mentioned on page 71.

29. Some varieties of plums are more subject to the attacks of fungi than others.

30. Spraying plum foliage with the Bordeaux mixture thickens the leaves, but further measurements must be made to establish a rule.

Old readers of the KANSAS FARMER will remember that the large experience of Judge Wellhouse, whose 1,700 acres of apple trees have given him ample opportunities to become efficient, has developed a power spraying outfit of sufficient efficiency to throw the needed preparations over the oldest and largest apple trees. Indeed, the extent of the Wellhouse orchards made such device necessary, for it would be almost an endless task to spray so many trees by hand power. Otherwise the best Kansas experience agrees very fully with the results given in the above quotations.

Weekly Weather-Crop Bulletin.

Weekly Weather-Crop Bulletin of the Kansas Weather Service, for week ending May 27, 1895.—T. B. Jennings, Observer Weather Bureau, Director:

CONDITIONS.

A cool week with less sunshine and much more rain than the State has received any week this season. The extreme western counties were favored with good rains, while Greeley and Wallace were well favored. The larger part of the middle division south of the Smoky Hill, and all of the eastern division south of the Kaw were well watered with good showers, which were quite heavy in Barber and Harper, around Lyons in Rice, and Elk City in Montgomery, and in the central counties of the eastern division, with fair showers in Norton, Rooks and Rush, while light showers were scattered through the other counties.

RESULTS.

EASTERN DIVISION.

Corn is doing well; while it has been growing slowly it is rooting deep. Small grains are improving in the central counties, also fruit and pastures, while in the northern and extreme southeastern counties fruits, gardens and small grains are suffering.

Allen county.—Corn, flax and clover at a standstill; wheat and oats poorly; potatoes look well; berries a fair crop.

Anderson.—Everything looking fine.

Atchison.—Pastures suffering for rain.

Brown.—Corn a better color though growing slowly; no improvement in small grains; apples falling.

Chautauqua.—Prospects favorable

for a good crop of corn; wheat heading out with large, full heads.

Cherokee.—Corn holding its own, other grains suffering badly.

Coffey.—Corn making good growth; pastures, flax and oats much improved; wheat heading well but thin on the ground; trees loaded with fruit, which does not fall.

Doniphan.—Wheat and oats firing; some corn looking yellow.

Elk.—Corn clean.

Geary.—Outlook for fruits very unfavorable; drought hard on cereals.

Greenwood.—Crops suffering for want of rain.

Jackson.—Corn, good stand in southern, very poor in northern part; small grains badly hurt; early potato prospects good; cherries and small fruits doing well.

Johnson.—Chinch bugs and cold weather injuring wheat some.

Linn.—Corn in good condition; oats short but good; early-sown wheat promising; flax poor.

Marshall.—Oats and wheat will be a failure without rain in ten days.

Montgomery.—Crops revived during past two days.

Osage.—Gardens and pastures have taken a fresh start; corn doing finely; prospects good for much fruit; wheat and rye headed out; oats improving.

Pottawatomie.—Corn doing well except where cut-worms are; flax fine; potatoes growing well; alfalfa haying begun.

Riley.—Corn and alfalfa doing well; oats nearly gone.

Shawnee.—Wheat short but looking well; oats improved; late corn coming up nicely; fruit ceased dropping; prospects better generally.

is doing well, that just coming up being damaged by the drying winds; cutting alfalfa.

Osborne.—Wells going dry; oats nearly all gone; corn good stand but grows slowly.

Ottawa.—Fine week for killing weeds; corn recovering from frost; no prospect in sight for anything but corn and potatoes.

Phillips.—Wheat, oats and rye gone; corn doing fairly well; pastures drying up.

Reno.—Corn looking well; other crops badly.

Rice.—Great improvement in wheat and oats; corn never in better shape in this county.

Rooks.—Wheat total failure; oats and barley looking fairly well; early-planted corn in good condition; potatoes good.

Rush.—Oats and barley looking well; corn being cultivated and doing well; fruit not much damaged by frost and potatoes recovering; sorghum and millet mostly planted and up.

Saline.—Crops revived some; chinch bugs by millions.

Sedgwick.—Corn looking well; wheat thin but heading very well and will grade well; oats poor; fruit prospects not as promising.

Stafford.—Crops suffering; corn growing slowly; grasshoppers at work.

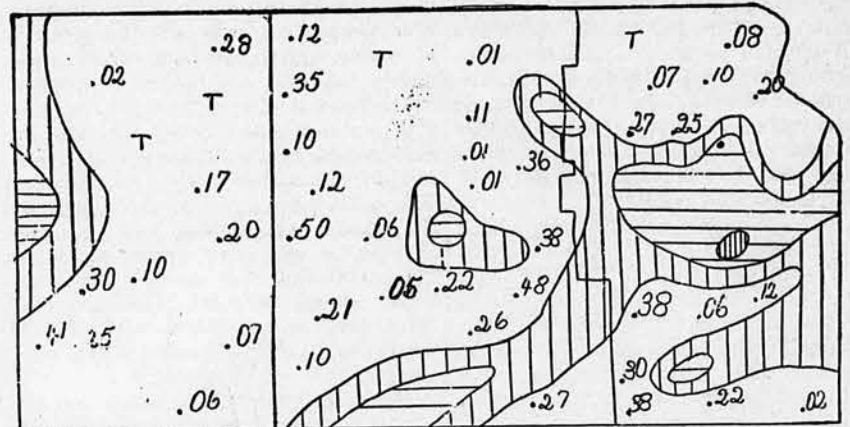
Sumner.—Corn small; oats and wheat heading out very short; pastures dried up.

WESTERN DIVISION.

The rains in the western counties have greatly improved all crops, though the cool weather was not favorable. In the unirrigated portions of the other counties the cool weather has been an advantage. Irrigated crops are doing well.

Cheyenne.—Crops looking very well.

Decatur.—Corn a good stand but not



Scale of shades in inches less than 1/2 1/2 to 1 1 to 2 over 2 T Trace
ACTUAL RAINFALL FOR WEEK ENDING MAY 25.

Wilson.—Corn a good color and growing slowly; all prospects improving since the rain.

Woodson.—Corn doing well—making slow growth; oats beginning to head short; prairie grass promises a heavy yield of hay.

MIDDLE DIVISION.

Corn is doing well, better than any other crop. Small grains and pastures suffering severely in the north, doing better in the central and southern counties, except Sumner, which reports pastures in bad shape. Wheat is heading in central and southern counties, and though stalk is short and thin on the ground the berry promises better than usual.

Barber.—Fine week for crops.

Barton.—Half the corn is up and cultivation has commenced; wheat heading short.

Clay.—Potatoes fine and commencing to bloom; no improvement in other crops.

Cloud.—No change in crop conditions.

Cowley.—Wheat on bottoms filling out a plump berry; some corn replanted.

Dickinson.—Corn looks well; oats worse than wheat; pastures and wells drying up.

Ellis.—Crops unchanged.

Harper.—Good rains; all crops much improved; wheat heading out nicely; corn doing better than at any time since planting; grass good.

Harvey.—Wheat reviving since the rain; oats and grass look red from frost; corn fine.

Kiowa.—Kaffir corn generally a good stand; potatoes doing well; likewise fruits; oats and barley on upland considered dead; pastures dry and stock on range.

Mitchell.—Corn large enough to work

growing on account of cool, cloudy, dry weather; wheat with rain would still make two-thirds of a crop; grass drying up.

Finney.—Grain of all kinds in need of rain; wheat about gone; apples, cherries and plums promise a good crop.

Ford.—Cool, damp and cloudy days have kept crops from suffering from dry weather; good crops of alfalfa harvested; fruit prospects bright.

Gove.—Cool, cloudy week; everything at a standstill; crops suffering; grass drying up.

Grant.—Too cool for garden truck to make any progress; grass drying up.

Greeley.—First rain of the season this week came too late to help wheat, but is improving spring crops; irrigated gardens doing well.

Hamilton.—Rainy week for this region; all crops improved.

Kearney.—Cool, cloudy week has improved crops.

Meade.—Wheat, oats and barley drying up; fruit falling badly.

Norton.—Corn at a standstill; the week was cool and cloudy; crops of all kinds suffering.

Stanton.—Wheat an entire failure; spring crops doing well excepting barley, oats and spring wheat.

Thomas.—All crops have about held their own during the past cool, cloudy week.

Trego.—Rye heading; late barley good; corn coming up uneven; potatoes and gardens doing finely.

Wallace.—The cool, cloudy weather has kept crops at a standstill.

Some of the old Kansas friends of Henry Wallace, formerly editor of the Iowa Homestead, will doubtless like an opportunity to continue to read the emanations from his able pen. He is now editing Wallace's Farm and Dairy. By special arrangement we are able to send KANSAS FARMER and Farm and Dairy for one year for \$1.25.

Horticulture.

What Trees Succeed in Western Kansas.

From the Biennial Report of the Kansas Commissioner of Forestry.

DECIDUOUS TREES.

All of the hard-wood varieties of trees in the trial grounds, at both stations, have withstood the tests of the last two years in a creditable manner, especially the black and honey locust, elm, hackberry, white and green ash, Russian mulberry, Russian olive, wild cherry and Osage orange. The first two have made the best growth. The borers do not seem to work on the black locust in the west half of the State. It is considered very durable post timber, also the Osage orange. Catalpa or black walnut are not a success in western Kansas, except in a very few instances. With the help of abundant irrigation they would doubtless make a rapid growth.

The Russian olive seems to be a beautiful and hardy tree, especially adapted for a wind-break. It does not seem to sap the ground for a long distance, like the locust. Cottonwood, box elder and poplar will last only a few years on the uplands of western Kansas. As the box elder is a shade-enduring tree, and usually quite vigorous for a few years, it will answer to plant with others that are long-lived and will require more room after a few years. The gray and other varieties of willow will thrive in western Kansas where they can get a supply of moisture. They are especially adapted for planting along embankments to protect them from washing. The Osage orange seems to be very hardy in most localities in Kansas. They are well adapted to hedge planting, and, if the conditions are favorable, like the locust, will prove a profitable crop of timber to grow in this State. While their growth is much slower in western Kansas than black locust, they will make as durable posts.

The Kentucky coffee tree has proved itself hardy, but a slow grower, in this section of the State. The different varieties of oak have not been given a fair test in the trial grounds at either station. What we have are very scrubby. It is quite likely that they will not prove a success on the uplands. Allantus seems to be thriving at both stations, and, like cottonwood, box elder and poplar, it will not be of much value when grown, except for appearance. Butternut, sugar maple, chestnut, yellow birch, American larch and American linden have been tested, and so far are not a success. Balm of Gilead seems hardy, yet makes a slow growth.

CONIFERS, OR EVERGREENS.

Several kinds have been tested in the trial grounds. The Austrian pine and red cedar so far have stood the test best. Scotch pine does fairly well. Like the deciduous trees on the trial grounds, the conifers mentioned have stood a severe test, and can be relied upon. The severe drought of the last two years has made it as difficult for them to thrive as when, in some of the previous years, they struggled with the weeds.

The parks have not been planted so as to establish forest conditions, which would in a few years so shade the ground as to keep down the weeds. I have attempted to correct this mistake by planting in such kinds as seem best adapted to the requirements, planting shade-enduring trees where a partial crown cover has been established, and light-needing trees where a crown cover was lacking and likely to continue so without their help. While the trial grounds at both stations have answered the purpose of thoroughly and severely testing several kinds of trees for a few years, yet as an object lesson in forestry they are a failure. I have engaged quite a number of the most hardy conifers to plant in the spring. Among those, we will mention some that have been tested in Kansas, Colorado and Nebraska, and are thriving in most instances.

Dwarf Mountain Pine.—These form broad, dense masses of evergreen foliage. The branches will require some pruning to form a symmetrical head. They are very desirable for lawns, low

hedges and for ground cover. They are quite hardy.

Southern Yellow Pine.—This tree is likely to prove a valuable tree in Kansas, so far as I have been able to learn.

White Spruce.—In middle and eastern Kansas this tree is one of the best for ornamental planting. We cannot recommend it at present for western Kansas, as it has not been tested.

Colorado Blue Spruce.—This tree has been tested at both stations. It is a very beautiful tree, though not so hardy with us as red cedar or the Austrian pine.

Siberian Arbor Vitæ.—While this tree has not been tested in this section of the State, it is likely to prove a success.

Banksian Pine.—The First Assistant Chief of the United States Department of Forestry, Prof. Keffer, while at this station a few days ago, said that he found the above-named species of pine to be leading all others at the government experimental station among the sand hills of Nebraska, and, next to it, the *Pinus ponderosa* or "bull pine" of the Rocky mountains, Austrian and Scotch following close after.

Thayer's Berry Bulletin for June, 1895.

Berry bushes should be thoroughly mulched, first by cultivating and hoeing the surface soil, followed at once by an application of green clover, coarse manure, straw or some other coarse litter. Clover is best, being free from noxious weeds and rich in plant food. Mulch should be placed around each hill, four or five inches deep, leaving about three feet between the rows for cultivation during the summer. This treatment retains moisture near the surface, prevents the growth of weeds, keeps the berries clean, enriches the soil, and is the only practical safeguard against drought.

When new canes of the blackberry and raspberry are fifteen inches high, nip off about two inches of the tip. This will check the upward growth of the plant, cause several new branches to grow and greatly increase the bearing surface of the canes. All weak canes should be cut out. This treatment gives a low, stocky, well-formed bush, not liable to damage by severe storms.

The new growth of grapes should also be shortened from time to time by pinching back.

A well-cultivated blackberry bush will usually set more fruit than it can mature. The quality and size of berry may be greatly improved, without reducing quantity, by trimming off one-fourth or one-third of the fruit stems. This is also true of the plum, grape and many other fruits.

New strawberry beds should not be allowed to bear fruit the first season. Pick off all buds and blossoms. The maturity of seed is very exhausting, and if allowed to grow will greatly reduce vigor of new plants. For this reason strawberry plants from old beds should never be used.

The best preventive of disease among berry plants is clean cultivation and severe pruning.

The worm on currants and gooseberries will appear on the lower leaves soon after the fruit forms. The remedy for this pest is so simple, there is no cause for neglecting its use: One ounce of white hellebore dissolved in two gallons of water, applied with sprinkler or brush broom, when worms first appear, will exterminate them. Two or possibly three applications may be necessary. Paris green is also used in same manner.

SPECIAL FROST EDITION.

May 14, eight degrees below freezing. Frost five successive mornings. Strawberry fields white with blossoms. Currants and gooseberries half grown. Raspberries and blackberries bending with buds of fruitful promise.

More than 100 acres of berries to protect on the Thayer fruit farm. How was it done? At 11 o'clock a. m. the faithful signal service reports "Killing frosts to-night." At 1 o'clock p. m. a score of men with teams were covering berries with mulch from between the rows and wild hay from stacks near by. The early dawn found them still at work. Result, 90 per cent. of fields so protected saved, balance ruined or

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Common Sense

dictates that you use materials when painting that you know something about. Pure White Lead and Pure Linseed Oil are and have been the standard for years. You know all about them; if you don't your painter does. To make sure, however, examine the brand (see list).

For colors, use National Lead Co.'s Pure White Lead tinting colors; they are the best and most permanent; prepared expressly for tinting Pure White Lead. Pamphlet and color-card free.

NATIONAL LEAD CO.,

1 Broadway, New York.

greatly damaged. Moral.—In localities subject to frost, have hay or straw ready for use. One good load to each half acre. Wild hay is best, being light and more compact. One man may protect an acre in a few hours. Remove covering early next morning to allow continued pollenization. A thick smudge may protect berries at one or two degrees below freezing. For lower temperatures cover with suitable protection.

Berry fields and farmers' gardens may be saved in this way.

The Weather vs. Injurious Fungi.

In the *Experiment Station Record*, B. D. Halsted is referred to as considering "the relation between the weather and the twig blight of fruit trees due to *Bacillus amylovorus* and a blight of potatoes due to a *Vermicularia*."

"The twig blight had never been known as prevalent in New Jersey as during the past year. It appears that warm, moist weather is conducive of rapid development of the parts of the plant attacked by the fungus and the conditions are offered for a rapid multiplication of the germs within the tender parts of the host. 'If this supposition is rational it goes without further discussion that fire blight, while not caused by the weather, is a creature largely of moisture and heat when they come in excess while the fruit trees are unfolding their buds highly charged with the rich elements of stored up plant food.'

"The author thinks that with a knowledge of the relation between weather and fungus development some method of treatment may be found to prevent the blight.

"In the case of the potato blight the vines fail to make normal growth, and when about half sized the leaves begin to turn brown and finally the stems fall to the ground. The crop of tubers will be small and scarcely worth harvesting. The trouble is usually located near the ground, but in bad cases it covers the whole plant, and the fungus causing it thrives under conditions of abundant moisture and warmth. Too much rain will prove injurious to the plants, causing a greatly weakened condition and fitting them for the attacks of a fungus not otherwise capable of serious injury to the potato. In this case weather has a very important part in preparing the host for the fungus, and a study of the relation between the two may result in the discovery of the proper time for preventive application of fungicides."

L. H. Pammel is quoted as saying: "Of the more important factors potent in causing rust development, namely, climate, character of soil, especially its fertility, and variety of host, the author considers climate as the most important. Meteorological tables are given showing the rainfall at Ames, Iowa, for the months of May, June and July, 1890-94, from which it is shown that the amount of rust and precipitation are very closely related, being worse during the years of greatest rainfall. In 1894, when the rainfall was very small, the absence of all fungi was very general."

Effects of the Cool Weather.

The exceptionally cool weather which prevailed until the middle of last week was very unfavorable for most crops, and widespread injury was done by frosts, which were general throughout the northern and central portions of the country and as far south as the northern portions of Georgia, Alabama and Mississippi. The damage to the grape crop from frost was especially heavy in New York and Pennsylvania, and fruits generally suffered in all northern and central districts. Corn suffered seriously, rendering much replanting necessary, and where not injured by frost its growth was checked and the plant yellowed.

Cotton also suffered much from the unseasonably cold weather; throughout the cotton region its growth was retarded, and cold nights killed a part of the crop in the Carolinas and Georgia, rendering replanting necessary.

Spring wheat was reported as in excellent condition in Minnesota and as not unfavorably affected in North Dakota. Winter wheat suffered injury from frost in Indiana and Missouri; in Illinois the crop is less promising than heretofore, and no improvement has been experienced in Kansas and Nebraska; more satisfactory reports come, however, from Arkansas, Tennessee and Michigan.

It is a great mistake to suppose that a simple tonic gives strength; it only stimulates the stomach to renewed action. To impart real strength the blood must be purified and enriched, and this can only be done by such a standard alternative as Ayer's Sarsaparilla.

Invited to send for my latest price list of small fruits. Half million strawberry plants, 300,000 Progress, Kansas and Queen of West raspberry plants. B. F. Smith, Box 6, Lawrence, Kas. Mention this paper.

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I have excellent farms in Rooks county, Kansas, for sale, way down below their value. Will sell on contract for one-tenth down and one-tenth yearly, or will give deed if one-fourth or more is paid down. Write for particulars and state how much you can pay down and how you want the balance of payments. I also have several unimproved farms in central Nebraska and one large body of over 7,000 acres. I have a finely improved ranch of 1,440 acres in Rooks county, Kas. Any or all of above will be sold very low, or might exchange part or all of it for good improved property in Chicago or vicinity. Address

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601 Masonic Temple, CHICAGO, ILL.

The Poultry Yard.

He Swallowed An Egg Whole.

It was Paddy Kelly who walked into the sick room of Mickey Dolan. Mickey lay there pale with his eyes closed, and heard Pat exclaim:

"Mickey, its ill ye're looking. Fwat's the matter wid ye?"

"Do ye know that spalpeen av Widdy O'Brien's second husband?" asked Mickey.

"That I do."

"He bet me a pound to a pint I couldn't schwalley an igg' widout breakin' the shell av it."

"Did ye do it?"

"I did."

"Then fwat's allin' ye?"

"It's down ther," laying his hand on his stomach. "If I jump I'll break it and cut me stummick wid de shell. If I kape quiet the thing'll hatch out, and I'll have a shanghai rooster clawin' me insides."—*Montreal Star.*

Preserving Eggs--Feeding.

EDITOR KANSAS FARMER:—Your correspondent at Colony, Kas., asks for the best recipe for preserving eggs for winter market. Also, he wants to know the cost of feeding chickens.

Eggs that are infertile keep the best. They should be packed in salt in air-tight barrels or boxes. Pack them in layers with the small ends down, one-half inch of salt between layers and one-quarter of an inch apart. They must be kept in a cellar or some other cool place.

My experience in feeding hens is that they require about one quart of grain per day—if they are confined in pens—to seven chickens. If they have a large range one-half that amount is sufficient. My Langshans are fed the above amount. They are large chickens, of fine flesh and among the greatest egg-producers known.

T. V. CODDINGTON.

Topeka, Kas.

Some Important Items.

MOISTURE NECESSARY.

While usually not as necessary with hen eggs as with turkey, duck and goose eggs, yet in many cases a much better hatch can be secured if proper pains are taken a day before, or even the morning of the day the eggs are due to hatch, to carefully sprinkle them with milk-marm water. The heat from the hen often absorbs nearly or quite all of the moisture in the eggs, the shell becomes hard and brittle and the lining dry and tough and the chicks find it difficult if not impossible to break through them. By sprinkling well or dipping the eggs in a vessel of warm water the necessary moisture is secured and the eggs hatch much better. There is no harm in sprinkling the eggs in this way, while in many cases a good hatch is secured that would otherwise prove a failure.

LICE WITH SITTING HENS.

Unless care is taken lice will breed and increase so rapidly in the nests of the sitting hens as to cause serious loss, not only in the failure of the eggs to hatch, but in the poultry after they are hatched. Before the eggs are put under the hen the nest should be thoroughly cleaned out. If the inside is washed with crude petroleum or a lime whitewash, the insect pests may be thoroughly destroyed. Then fresh clean material should be supplied. If they can be had conveniently a few stems of tobacco put in the bottoms of the nests, will help materially to keep down the lice. Some Persian insect powder should be dusted in the feathers of the sitting hens. If soft feed is given, put in a little sulphur once a day. When the chicks are hatched, take out the nest material and burn and give the box a thorough cleaning up. Unless care is taken in this way the nests will prove a breeding place for lice to the detriment of the poultry.

CLEAN AND DRY.

There is nothing so fruitful of disease among poultry of all kinds as damp, unclean quarters, a good portion of which could be readily avoided with a little care. When the coops are allowed to remain in one place too

long or care is not taken to properly clean them out, they are almost certain to become damp and filthy, and either of these breeds disease. A good plan is to change the location, not only of the roosting, but also of the feeding coops, every two or three days at least, rather than to run the risk of disease among the young fowls by allowing the coops to remain in one place so long as to become, in a measure, disease-breeding. If the coops have board floors, they should be cleansed off regularly and thoroughly dried, but even then it is best to change the location occasionally in order to keep the place from getting too filthy. Maintaining good health is an important item in making poultry-keeping pay, and it will pay to take considerable pains to keep the quarters not only dry but clean.

Eldon, Mo. N. J. SHEPHERD.

In the Dairy.

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

Cow vs. Horse.

A good dairy cow is worth more than the horse three times, and yet on the majority of farms the horse has the best of everything and the cow takes what is left. The cow pays for her own feed, helps buy feed for the horse and furnishes money with which to buy bread and butter for the family. Turn out the horse and give the cow his stall.

Rat Fat for Butter.

The evidence that was given before Sir Walter Foster's Select committee of the House of Commons has somewhat startled the public upon reading that *The Petit Journal* had reported that the French margarine manufacturers went to knackers' yards for material, used dead dogs and cats, and even rats from the Paris sewers. It is said that this allegation has never been contradicted.—*The Dairyman, London.*

Oleo Law in Missouri.

The anti-oleo law passed at the last session of the Missouri Legislature only prohibits the sale of the imitation article for use in that State. The law provides that it may be colored to resemble butter when manufactured for export or sale outside of the State lines. This perhaps, is better than no law, but it is mighty poor logic to say that what is unfit for use in one State shall be crammed down the throats of innocent people in other States where there are no protective laws.

Imitation Butter.

The law of New Hampshire which requires all imitation butter to be colored pink is a most wholesome provision of our public statutes, for it protects both the producer and would-be consumer of honest dairy products. This law was vigorously enforced by the State Board of Agriculture until a decision on the inter-State commerce law placed its constitutionality in question. A recent decision of the United States Supreme court on a similar law in a neighboring State again establishes the constitutionality of State regulation in the sale of counterfeit dairy products, and New Hampshire's excellent law will again be enforced to the letter.—*Mirror and Farmer.*

Milk and Farm Fertility.

A ton of cottonseed meal when fed to cattle, just about replaces the fertility which is sold in 5,000 quarts of milk. That is to say, the farmer who, for every 5,000 quarts of milk which he ships, buys and feeds a ton of cottonseed or its equivalent, keeps his farm from growing poorer. Of course there must be no waste in handling the manure. Practically, the farm would seem to grow richer because fertility is constantly being removed from the pastures and lowlands in the form of grass and hay, and applied in the form of manure, to the tillage land, which naturally improves under the process. Most New England farms, however, ought to act—

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usually increase in total productive power because, where high feeding is practiced, enough grain is bought and fed to supply from two to four times the value of the fertility sold in the form of milk. In such cases, when clover and soiling crops are made to assist, some fertility may also be sold in the shape of truck and fruit without robbing the farm.—*Massachusetts Ploughman.*

Find Which Are The Profitable Ones.

The wide difference in cows can only be rightly appreciated by keeping an accurate account with them. "In a certain herd of registered cows," says the *Jersey Bulletin*, "the owner was induced to keep such an account for a month. He found that of thirty cows, twenty made a daily average of one pound of butter each at a cost of 13½ cents a pound, six cows made a daily average of two-thirds pound at a cost of 20 cents a pound, while four cows made only one-third pound a day each, at a cost of 40 cents a pound. The butter from this herd is engaged at 25 cents the year round, so that twenty of his cows are making a daily profit of 11½ cents each, six are making 8½ cents a day each and four are losing 5½ cents daily."

"As Good as Butter."

A Pittsburg judge, in sustaining the Pennsylvania law against oleo, volunteered the statement that "much of the oleomargarine is as pure and wholesome and in every way as good as a great deal of butter," and added that the statute was "unwise and unjust." The case before the court where this man presides was one that called for the mere determination as to whether a violation of the law had been committed, and in deciding there had been such violation he stepped outside of his duties as a judge, and also the jurisdiction of his court, to inform the oleo combine that he was their friend. What means he possesses of knowing of the purity and wholesomeness of oleo he neglects to say, but our knowledge of the stuff, as well as acquaintance with the formula by which the best brands of it are made, permit us to state that this judge ignorantly "talked through his hat." It is questionable if this magistrate ever sampled genuine oleo. He is a living demonstration of the thought, that the less one knows of a subject the more glibly she will talk about it in authoritative fashion. The purpose of the Pennsylvania oleo law is to protect consumers of butter against counterfeit product, and the duty of courts is to enforce this protection, but this Dogberry would, if he could, protect the counterfeiter, and regrets that it is his business to punish him. To emphasize his stupidity he asserts that a law that requires an alleged food product to be sold for what it is an "unwise and unjust" one. The most ridiculous blatherskite in the land could not utter a greater absurdity than the one credited to this learned judge. Of course, the punishment of an offender in a friendly court is always as lenient as the provisions of law permit, but the mercy of a judge does not remove the stain of conviction, nor will his extrajudicial mouthings re-establish smirched reputations. This judge talked too much.—*American Dairyman.*

"The Farmer's Ready Reference, or Hand-Book of Diseases of Horses and Cattle." Descriptive circular free. Address S. C. Orr, V. S., Manhattan, Kas.

Farmers, while butter is so low and cheese high in price, why not send \$1 to C. E. Kittinger, Powell, S. D., for his rennets and instructions for making cheese at home without other apparatus than you now have. Any woman can make cheese while attending to household work. The process is very simple and success certain. Mr. K. offers to refund the dollar to all who fail while following his instructions, and says no one has ever yet asked to have it refunded.

A new dining car service between Chicago and Buffalo via the Nickel Plate Road, has recently been placed at the disposal of the traveling public, which will enable patrons of this favorite low-rate line to obtain all meals on trains when traveling on through trains between Chicago, New York and Boston. For reservations of sleeping car space and further information, see your local ticket agent or address J. Y. Calahan, General Agent, Chicago.

A TRUE STORY

Last month I cleared, after paying all expenses, \$235.88; the month before \$186.86 and have at the same time attended to my regular business. I believe any one, anywhere, can do as well, as I have not a particularly good location and not much experience. When you have an article that every family wants, it is very easy selling it. It seems strange that a good, cheap dish-washer was never before placed on the market. With the Perfection, which sells for \$5, you can wash and dry the dishes for a family in two minutes, without putting the hands in water. As soon as people see the washer work, they want one, and that is why so much money can be made so quickly. For full particulars address The Perfection Mfg. Co., 607 63d St., Englewood, Ill. I feel convinced that any lady or gentleman, in any location, can make \$5 to \$10 a day, as every family will very soon have a dish-washer. Try it and publish your experience for the benefit of others.

ALICE O.

PERINE'S NEW SUBSOIL PLOW

Specially designed to break up the hardest subsoil. It can be run 2 feet deep which lets in all the rain, storing it up for all crops, which insures against drouth and standing water on the surface.

For further particulars address, PERINE'S PLOW WORKS, Topeka, Kas.

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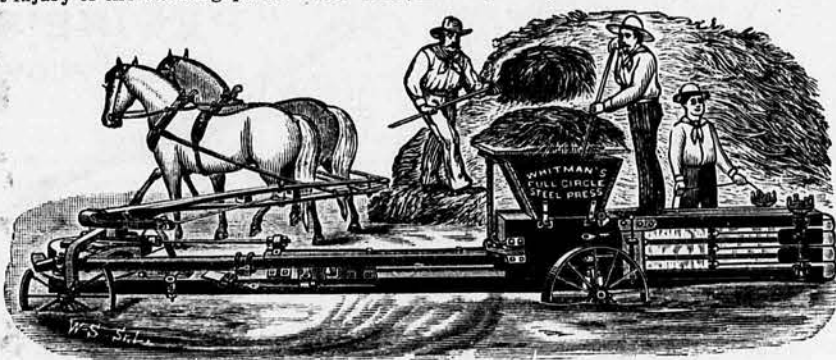
Whitman's New Steel Beauty.

The Whitman Agricultural Company, of St. Louis, are makers of the largest and most complete line of balers in this country for baling all kinds of fibrous materials, including hay, straw, wool, cotton, moss, broomcorn, cut hay, shavings, sawdust, tobacco, hemp, rags, corn stalks, etc. They have made competitive displays at the leading expositions of the world and claim to have been uniformly victorious everywhere.

It is now more than twelve years since they first placed their baling presses on the market and their success has been phenomenal and their machines are adapted to all purposes and all sections of the world. They offer four entirely new presses for the season of 1895, which have been thoroughly tested. Whitman's "New Steel Beauty," as shown herewith, is especially



adapted to Kansas. It is constructed almost entirely of steel and iron, the only wood used being in the feed table and tongue. The power device is entirely new, simple, durable and very strong. The front axle arch is wrought channel steel (instead of cast-iron, as usual,) connected to steel axle by strong fifth wheel. The pitman is of heavy steel pipe, trussed. The power arms have two points of contact with pitman, the first being seventeen inches from center, and makes a positive connection (not a wedge or sliding device that fails to start plunger if it has any considerable resistance). The last connection for final pressing of charge is only ten and one-half inches from center. This gives very great power at time required, and exceedingly long plunger travel. The main sill or bridge tree is a steel pipe securely connected to bale chamber. At the power end it is pivoted so that either end may conform to the uneven conditions of the ground without injury to the working parts. The bale



WHITMAN'S FULL-CIRCLE STEEL BALING PRESS.

chamber and feed hopper are entirely of steel and very strong. The plunger has thirty-four and one-half inches travel. The feed opening in hopper is forty inches long at top. The tension at rear end is entirely new and quickly operated by one wheel to which a lever is loosely connected. The pitman is provided with friction stop on rear end, which can be regulated perfectly, avoiding severe jar, strain or injury. The sweep or horse lever is a strong steel pipe with brace rod connecting it to power head, and is also provided with a light steel lead pole which can be attached to bit of horses. When on the road this press can be quickly telescoped if desired, shortening same about nine feet, as shown in cut. The weight of this press is about 2,650 pounds, being some 1,200 pounds less than our heavy "Eclipse" baler. The extra large feed opening admits of great rapidity of work. This machine is very simple, durable and powerful, easy to operate and is warranted in all respects to be strictly first-class. It will, upon examination, be appreciated by all intending purchasers.

Whitman Agricultural Co. also manufacture a full line of cider mills, feed grinders and a press grain drill, besides trucks, powers, etc., all of special interest to many of our readers, who, upon application, may secure their illustrated catalogue free by mentioning this paper.

Gossip About Stock.

The Crescent Manufacturing Co., 2109 Indiana avenue, Philadelphia, advertise something which is of importance to all stock breeders, not only in Kansas, but everywhere else. That something is entitled "Tough on Flies." Every dairyman knows how uncomfortable it is to have the flies pestering the cows during milking time. One application is said to be sufficient to protect the animals for two or three days without the wash being repeated. Notice their advertisement on another page in this issue and write for information. The following copy of letter received by the manufacturers may be of interest: "Memphis, Tenn., October 27, 1894.—Crescent Manufacturing Co., Philadelphia, Pa., Gentlemen: I take great pleasure in adding my testimonial to the merits of your

preparation, 'Tough on Flies.' I have used this preparation, not only for the relief of horses, but I find it invaluable as a means of driving away that terrible pest, the mosquito. With a small quantity on your hands and rubbed on your face and head you can sleep in peace, even where there are thousands of these pests around you. They will not even come near enough for you to hear their singing, and the house fly will not disturb your morning nap. I would not be without it for many times its cost. B. F. Tatem, 100 Arkansas avenue."

"Have You Five or More Cows?"



The introduction and sale of the DeLaval machines in the past few years has really attained marvelous proportions, and can only be attributed to their intrinsic merit and the long existing and universally understood necessity of this step forward in the practicable utilization of centrifugal separation in modern dairying.

It is probably true that there has been of recent years more heedless and helpless waste in dairying than in any other feature of agriculture, or for that matter any other industry. Like all else, though, dairying must speedily be reduced to a matter of

fact basis of profit and practicability, and the separator has contributed much to make this both possible and feasible. It is of even greater importance in the separation of milk than the modern reaper in the grain field.

It is maintained that its use effects a saving of five to twenty-five dollars a cow per year, according to climate and previous method, over and above what is possible with gravity setting, and that the average saving is not less than ten dollars per cow. Strong and almost incredible as this statement may seem, it is undoubtedly borne out by the experience of users of the De Laval machines.

Next Week's Closing-Out Sale of Hereford Cattle and Horses.

Our readers interested in Hereford cattle, trotting-bred and roadster horses should keep in mind that the great closing-out sale of 150 head of richly-bred white-face cattle and fifty head of fashionably-bred horses will take place on the Nodaway Valley stock farm, near Graham and the railway station known as Maitland, on the "Q" system, in Nodaway county, in north west Missouri. The sale will be a two days' one, commencing at 10 o'clock a. m., Wednesday, June 5. On reference to the sales catalogue the reader finds a strongly and well diversified herd, embracing the blood of the leading families, recognized as such by both American and English breeders. The horse stock foundation was laid at long prices, years ago, when the business warranted almost an unlimited price for animals of superior breeding and merit. Among the later stallions that have a grand good list of sons and daughters in the sale, is Jove 3758 by Onward, and that other noted sire, Clark Street 9197 by Red Wilkes.

All intending buyers coming by rail to Maitland will be met there with free conveyance to and from the farm. The usual sales dinner at 12 o'clock. Col. J. M. Hosmer will do the honors of the block and a successful sale is expected.

Interesting circulars sent to farmers. Send name to Bureau of Immigration, Spokane, Wash.



CARRIAGES, BUGGIES, HARNESS

and Bicycles, at Factory Prices. Work guaranteed and 20 to 40 per cent saved. Our goods received the highest awards at the World's Fair. Our 1895 Mammoth Illustrated Catalogue is free to all. It shows all the latest styles and improvements and reduced prices. It has 200 pages and is the largest and most complete catalogue ever issued. "A" Grade, \$45. "B" Grade, \$35. Write to-day. Send for it. It's free. Alliance Carriage Co., Cincinnati, Ohio.



Publishers' Paragraphs.

The St. Louis Well and Machine Tool Co. was visited last week by our representative, who found a splendid concern which manufactures the St. Louis portable steam drill, a cam and treadle well-drilling machine, and the walking-beam or oil well rigs, also earth augers and earth-boring outfits. Look up their advertisement in this issue.

No finer machinery catalogue has appeared than that just received from the Deering Harvester Co., of Chicago. The enterprise and up-to-date manner of this company is signified by the adoption of the easy-running bearing by which the bicycle became a machine of practical utility by reducing the friction. The ball and roller bearings of the Deering were carefully tested at the World's Fair, and the judges report is made the basis of the claim that in the Deering there is a gain of 77½ per cent in the ease of draft over the highest competitor. The Deering catalogue is worth sending for as a work of art and enterprise.

GROUND MOLES

Their habits and how to catch them. A book Free. L. H. OLMSTED, Hasbrouck Heights, N.J.

ST. LOUIS

MO., U. S. A.

WELL MACHINE & TOOL CO.

CATALOGUE FREE.

When writing advertisement mention FARMER.

We Can Save You Money

—ON—
THRESHER BELTS, TANK PUMPS,
SUCTION HOSE, VALVES,
LUBRICATORS and PACKINGS.

If you need anything in this line it will be to your advantage to get our prices before placing your order. A full line of Engines, Boilers and Pumps in stock.

If in the market send us your specifications and get our figures.

JOHNSTON-LEWIS SUPPLY CO.,
1228 Union Ave., KANSAS CITY, MO.

Farmers of the West!

Reserve
the First Week
in August to
visit the

It is a
Good All-Round
Country.

TERRITORIAL EXHIBITION AT

Inspect the object lesson furnished by united exhibits from Alberta, Saskatchewan and Assiniboia. Also great attractions characteristic of North West Life. Enjoy a holiday at cheap railway rates and gain experience as well. Come and receive a hearty greeting. E. B. Gordon, Official Secretary, Regina, N. W. T.

REGINA
CANADIAN
N. W. T.

ATEST OFFER \$9.90

To test the KANSAS FARMER as an advertising medium we will sell 500 Very Fine Black Diagonal twenty-ounce pure Wool Worsted Sack and Frock Suits for \$9.90. These suits are made just like regular Tailors' \$25 suits. Warranted not to get shiny or change color. Are jet black and a fine Dress Suit, suitable for all seasons. Can only be had by mail order with cash enclosed. Money refunded if not satisfactory. We refer to any bank in Topeka, also KANSAS FARMER. Give chest measure (over vest), also waist and inside leg measure. This offer for two weeks only. Splendid pair suspenders attached to pants. Any style out in sack suit, also long or short frock suit.

DON'T MISS THIS!
Address
AUERBACH & QUETTEL
709 Kansas Ave., TOPEKA, KAS.
Mention KANSAS FARMER.

VICTOR COW CLIP
Holds cow's tail to her leg and keeps it out of the milk and milker's face. All dealers sell it. 30c. Single; Four \$1. Sent by mail free on receipt of price by manufacturers: Victor Novelty Works, 833 Austin Av. Chicago

THE STRAY LIST.

FOR WEEK ENDING MAY 15, 1895.

Labette county—J. F. Thompson, clerk.
MARE—Taken up by John Blackberry, in Moun Pleasant tp., April 20, 1895, one sorrel mare, 2 years old.
MARE—By same, one bay mare, 2 years old, bell and halter on.
MULE—By same, one mare mule, 1 year old, with headstall on.
Crawford county—Peter McDonnell, clerk.
MARE—Taken up by Ezra Babcock, in Sherman tp., P. O. Farlington, April 22, 1895, one sorrel mare, 5 years old, fifteen hands high, star in forehead, white speckled on hip and back.
MARE—By same, one bay mare, 4 years old, fifteen hands high, star in forehead; two animals valued at \$50.

Neosho county—W. P. Wright, clerk.
MARE—Taken up by M. C. Rice, in Erie tp., one roan mare, fourteen hands high, branded on left shoulder and hip with A. D. B. and on right shoulder A. 15 years old.
FILLY—By same, one black mare colt, 3 years old, fourteen and a half hands high.

Phillips county—I. D. Thornton, clerk.
MARE—Taken up by Levi Mullican, in Arcade tp., April 30, 1895, one brown mare, fifteen hands high; valued at \$25.

Rawlins county—A. K. Bone, clerk.
MARE—Taken up by George W. Davis, of Atwood, April 22, 1895, one light gray mare, sixteen hands high, weight 1,000 pounds, no marks or brands; valued at \$30.

FOR WEEK ENDING MAY 22, 1895.

Cheyenne county—G. Beukelman, clerk.
MARE—Taken up by John Lindholm, in Jefferson tp., April 20, 1895, one dark bay mare, 4 years old, white star in face; valued at \$17.50.

GELDING—By same, one light bay gelding, 3 years old, large star in face, no marks or brands; valued at \$17.50.

MARE—Taken up by Daniel Bapp, in Lawn Ridge tp. (P. O. Lawn Ridge), May 3, 1895, one iron-gray mare, five feet two inches high, weight about 850 pounds, light scar on inside of right hind leg; valued at \$25.

HORSE—By same, one bay gelding, five feet three inches high, white spot in forehead and on nose, weight about 900 pounds; valued at \$25.

Pottawatomie county—Frank Davis, clerk.
STEER—Taken up by Peter Noll, in Cottonwood tp., April 20, 1895, one black hornless steer, right ear cut straight off, 3 years old; valued at \$25.

Allen county—James Wakefield, clerk.
MARE—Taken up by John Laster, in Elm tp., one sorrel mare, about 12 years old, white spot on forehead, about fifteen hands high, no marks or brands other than the above; valued at \$30.

FOR WEEK ENDING MAY 29, 1895.

Sherman county—E. D. Adams, clerk.
MARE—Taken up by James W. Hall, in Washington tp. (P. O. Edson), April 29, 1895, one sorrel mare, blue face, little white on hind feet; valued at \$15.

HORSE—By same, one sorrel gelding, spot in forehead, snip on nose, lump on left stifle; valued at \$10.

Cherokee county—P. M. Humphrey, clerk.
MARE—Taken up by James Lecher, in Pleasant View tp., one gray mare, 11 years old, scar on left shoulder, shod in front; valued at \$7.50.

HORSE—By same, one gray horse, 6 years old, US on left shoulder, shod in front; valued at \$7.50.

THOS. B. SHILLINGLAW, Real Estate and Rental Agency, 115 East Fifth St., Topeka, Kas. Established in 1884. Calls and correspondence invited.

Big Book Bargains.

Books at Less than the Original Cost of the Paper.

We have the following special lot to close out for cash, all prepaid to your express office:

Ten sets Americanized Encyclopedia Britannica, full cloth, latest edition, ten volumes; regular price \$21.50, now.....\$11 25

Ten sets same, half morocco, regular price \$30, now..... 19 00

Four sets same, full sheep binding, regular price \$25, now..... 18 00

One set People's Encyclopedia, four large volumes, half morocco, latest edition; regular price \$32, now..... 23 00

Two The American Encyclopedia of Practical Knowledge, one large volume, full sheep binding, 1,322 pages, fully illustrated..... 3 65

Three, Childhood—Its Care and Culture. An invaluable book for the home. 772 pages, fully illustrated, cloth..... 2 10

Thirteen volumes Irving's Conquest of Granada, beautifully illustrated, with English cover..... 1 35

Thirteen volumes Irving's Alhambra, beautifully illustrated, with English cover..... 1 35

One set Grant's Memoirs, two volumes, cloth..... 4 40

One Mulhall's Dictionary of Statistics, 632 pages, valuable reference book..... 8 25

Seven White House Cook Book, large 8vo, white oil cover..... 1 50

Eleven Napheys' Physical Life of Women, cloth, 428 pages, a valuable home book..... 1 00

Fourteen Napheys' Transmission of Life, 362 pages of information for women..... 1 00

Thirteen sets Works of Abraham Lincoln, two volumes, cloth, Nicolay and Hay edition, regular price \$10, now..... 6 25

We have also many choice books for home and school libraries at remarkably low prices.

Who will secure the above prizes? When this lot is sold we cannot fill orders. Send money with order—we will pay the freight. Correspondence asked

Kellam Book and Stationery Co.
603 KANSAS AVENUE,
TOPEKA, KANSAS.

The Veterinarian.

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the KANSAS FARMER. Give age, color and sex of animal, stating symptoms accurately, of how long standing, and what treatment, if any, has been resorted to. All replies through this column are free. Sometimes parties write us requesting a reply by mail, and then it ceases to be a public benefit. Such requests must be accompanied by a fee of one dollar. In order to receive a prompt reply, all letters for this department should be addressed direct to our Veterinary Editor, Dr. S. C. ORR, Manhattan, Kas.

SWEENEY.—I have a four-year-old horse that is sweened in both shoulders. I have roweled him but it does no good.

Otoe, Okla.

Answer.—Make a liniment of equal parts of sweet oil, turpentine and aqua ammonia, mixed together, and rub well into the joint and shrunken part twice a day till the skin is sore, then wait a few days and repeat. If the horse is lame he should not be worked. It will take time to make a cure.

SEXUAL APATHY.—How can we manage a cow that does not come in heat? The male runs in the herd. Will it do any good to operate with the hand?

Richland, Kas.

A. G.

Answer.—If your cow is in good health and yet is entirely indifferent toward the male, about the surest way to get satisfaction is to send her to the butcher. Remedies given to stimulate the sexual organs generally do more harm than good. An operation will do no good.

SORE SHOULDER—SWEENEY.—(1) What is best to do for a horse's shoulder that is swollen and sore? (2) What is the best cure for sweeny in a four-year-old horse that must work all the time?

Walton, Kas.

C. R. S.

Answer.—(1) Give the horse complete rest from work and bathe the shoulder with cold water several times a day until the swelling subsides. (2) Sweet oil, turpentine and ammonia mixed in equal parts and applied twice a day till the skin is sore will cure it, but if there is lameness the horse must have complete rest.

SORE EYE.—I have a mare that, about three years ago, lost half of the eye-lid by getting caught on the hame-lock; a few days ago I noticed that she was weeping from that eye and then a white speck appeared and now the entire eye appears white. Can anything be done?

O. B. L.

Woodward, O. T.

Answer.—Bathe the eye twice a day with hot water, then apply all over and around the eye a little of the following: Nitrate of potash and sulphate of zinc, of each 40 grains; fluid extract of belladonna, 4 drachms; water, 1 pint; mix. After two weeks, if the spot still remains, apply a little of the following with a camel's hair brush, once a day: Nitrate of silver, 2 grains; water, 1 ounce; mix. The eye should be shielded from the hot sun. It would be a wise plan to keep the mare in a dark stable for a few days.

SCOURING IN CALVES.—I am having trouble with the scours in my young calves. It comes on suddenly and nothing will check it. The discharge is thin, white and slimy and more or less tinged with blood. What can I do?

J. W. N.

Alta Vista, Kas.

Answer.—Give each calf from one to two ounces of castor oil and from a half to one drachm of laudanum, according to age and size. After the oil has acted give only a teaspoonful of milk at a time, mixed with half a teaspoonful of lime water. The milk should be sweet, and it will be better if boiled (without burning) and then cooled before given. This must be given sparingly at first and if the calf seems to improve it may be fed four or five times a day.

Horse Owners! Try

GOMBAULT'S Caustic Balsam

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

MARKET REPORTS.

Kansas City Live Stock.

KANSAS CITY, May 27.—Cattle—Receipts since Saturday, 7,718; calves, 103; shipped Saturday, 1,139 cattle, 8 calves. The market was weak to 10c lower. The following are representative sales:

DRESSED BEEF AND SHIPPING STEERS.	
16.....	1,015 \$5.60
15.....	1,402 5.45
51.....	1,272 5.25
21.....	1,280 5.10
42.....	1,411 5.05
20.....	1,320 5.00
39.....	1,156 4.85
49.....	1,086 4.50
TEXAS AND INDIAN STEERS.	
68 mf.....	1,024 \$4.40
59 mf.....	954 4.40
75.....	862 3.75
26.....	935 3.50

COLORADO STEERS.	
95.....	1,369 \$5.15
ARIZONA STEERS.	
48.....	871 \$3.45
34.....	994 \$4.40
4.....	977 3.50

SOUTHWESTERN STEERS.	
25 s. hf.....	987 \$4.00
17.....	930 3.05
1.....	500 2.25
4.....	300 2.00

TEXAS AND INDIAN COWS.	
1.....	930 \$4.00
15.....	489 3.15
10.....	702 2.85
1.....	930 1.50

COWS AND HEIFERS.	
38.....	894 \$4.00
11 mix.....	828 4.10
1.....	870 3.50
5.....	972 3.50
14.....	945 3.50
1.....	970 3.30
1.....	1,030 3.25
1.....	970 2.50
2.....	1,025 2.40
7.....	917 2.35

STOCKERS AND FEEDERS.	
24.....	908 \$3.50
32.....	707 \$3.25

Hogs—Receipts since Saturday, 5,156; shipped Saturday, 962. The market was 5c lower and slow. The following are representative sales:

69.....	262 \$4.35	63.....	249 \$4.30	71.....	249 \$4.30
86.....	240 4.30	159.....	223 4.30	82.....	235 4.27½
3.....	236 4.25	61.....	233 4.25	69.....	209 4.25
10.....	293 4.25	62.....	222 4.25	83.....	241 4.20
51.....	227 4.20	85.....	201 4.20	62.....	201 4.20
87.....	213 4.20	97.....	195 4.17½	50.....	211 4.15
83.....	196 4.15	82.....	202 4.15	18.....	233 4.15
11.....	186 4.15	64.....	177 4.10	82.....	201 4.10
78.....	190 4.10	72.....	172 4.05	81.....	188 4.05
28.....	182 4.05	23.....	201 4.00	5.....	326 4.03
73.....	157 3.90	69.....	161 3.90	53.....	181 3.93
6.....	128 3.60	13.....	109 3.45	4.....	120 3.40
65.....	120 3.35	13.....	119 3.25	17.....	111 3.25
94.....	178 3.00				

Sheep—Receipts since Saturday, 11,500; shipped Saturday, none. The market was weak to 15c lower. The following are representative sales:

79.....	94 \$4.40	531 Tex.....	81 \$3.90
20.....	75 2.75	11 spg lbs.....	@ 2.75

Horses—Receipts since Saturday, 37; shipped Saturday, 43. There was little business transacted. Private sales were generally steady to strong. Good horses are plentiful and the demand can be amply satisfied at this week's market. However, the receipts the past three weeks have been smaller than the same weeks a year ago.

Chicago Live Stock.

CHICAGO, May 27.—Hogs—Receipts, 45,000; official Saturday, 17,623; shipments, 1,900; left over, 5,000; market more active, heavy and stronger; light, weak, \$1.15@4.45; mixed, \$1.25@4.55; heavy, \$1.15@4.60; rough, \$1.15@4.30.

Cattle—Receipts, 13,000, including 2,000 Texans; official Saturday, 649; shipments, 319; market quiet and barely steady.

Sheep—Receipts, 14,000; official Saturday, 4,634; shipments, 297; best grades steady; others weak to 10c lower.

St. Louis Live Stock.

ST. LOUIS, May 27.—Cattle—Receipts, 3,300; shipments, 600; market easier; beef steers range \$4.25@5.60; light weights, \$3.50@4.25; stockers and feeders, \$2.50@4.10; cows, \$2.25@3.75; fed Texas steers, \$3.75@4.75; grass steers, \$2.75@3.75; cows, \$2.00@3.50. Hogs—Receipts, 3,200; shipments, 1,100; market 5@10c lower; heavy, \$4.35@4.50; mixed, \$4.25@4.40; light, \$4.20@4.40. Sheep—Receipts, 4,300; shipments, 100; market easier; natives, \$4.00@4.40; southwest, \$2.65@3.70; lambs, \$4.25@4.75.

Chicago Grain and Provisions.

	May 27.	Opened	High'st	Low'st	Closing
Wht—May.....	78	78	77½	77½	77½
July.....	81¼	81¼	78½	78½	78½
Sept.....	81½	82¼	78½	79½	79½
Corn—May.....	52	52	51½	51½	51½
July.....	53½	53½	52½	52½	52½
Sept.....	55¼	55¼	53½	53½	53½
Oats—May.....	28½	28½	28½	28½	28½
July.....	30¼	30¼	29½	29½	29½
Sept.....	29½	30	28½	29	29
Pork—May.....	12 42½	12 42½	12 42½	12 42½	12 42½
July.....	12 27½	12 70	12 27½	12 27½	12 27½
Sept.....	12 57½	13 00	12 57½	12 80	12 80
Lard—May.....	6 52½	6 52½	6 52½	6 52½	6 52½
July.....	6 67½	6 67½	6 65	6 65	6 65
Sept.....	6 77½	6 77½	6 85	6 82½	6 82½
Ribs—May.....	6 17½	6 17½	6 17½	6 17½	6 17½
July.....	6 27½	6 35	6 27½	6 27½	6 27½
Sept.....	6 40	6 55	6 40	6 47½	6 47½

Kansas City Grain.

KANSAS CITY, May 27.—Wheat here was irregularly higher to-day, about 1@2c as a rule, compared with Saturday's early prices. There was a small lot worked from Chicago. Half the reported receipts came from Chicago. The buying was chiefly by elevator owners, though there were some mill orders on the floor.

The demand for wheat is entirely local now, so that quotations on the basis of Mississippi river are not practicable.

Receipts of wheat to-day, 50 cars; a year ago, 26 cars.

Sales of car lots by sample on track, Kansas City: No. 2 hard wheat, 12 cars 81¼c; No. 3 hard, 3 cars 80c, 1 car 78c; No. 4 hard, nominally, 78c; No. 2 red, 3 cars 80½c; 2 cars 86c, 10,000 bu. 85c; No. 3 red, 2 cars 83c; No. 4 red, 1 car 80c, 1 car 78½c; rejected, nominally, 77@78c.

There were a good many samples of corn on sale, but very little demand. Prices were nominally ¼c lower. The liberal offerings and the large Chicago receipts made the tone of the market very weak.

CLAIRETTE SOAP.

"SAY BOSS! Them People Won't Take This Soap—They Want CLAIRETTE SOAP"



Everybody wants Clairette Soap who knows the goodness of it. Try it once and you will refuse all other kinds, too. Sold everywhere.

Made only by

THE N. K. FAIRBANK COMPANY, ST. LOUIS.

Receipts of corn to-day, 23 cars; a year ago, 125 cars.

Sales by sample on track, Kansas City: No. 2 mixed corn, 2 cars 49½c; most offerings held at 49½@50c, with 49@49½c bid, according to billing; No. 3 mixed, nominally, 49c; No. 4 mixed, nominally, 48c; No. 2 white, 8 cars 51¼c, 1 car 52c; No. 3 white, 1 car good 51c.

Oats were in fair demand. Prices were slightly lower.

Sales by sample on track, Kansas City: No. 2 mixed oats, 1 car 29½c, 1 car 29c; No. 3 oats, nominally, 28½c; No. 4, nominally, 28c; No. 2 white oats, 1 car 31¼c; No. 3 white oats, nominally, 30c.

Hay—Receipts, 20 cars. The market is steady. Timothy, choice, \$9.00; No. 1, \$8.30@8.75; No. 2, \$7.00@7.50; fancy prairie, \$8.00@8.50; choice, \$7.00@7.50; No. 1, \$6.00@6.50; No. 2, \$1.50@2.50; packing hay, \$3.00@3.50.

St. Louis Grain.

ST. LOUIS, May 27.—Closing prices: Wheat—Cash, 82½c; May, 82c; July, 80½c; September, 79c bid. Corn—Cash, 51¼c; May, 51c; July, 52½c; September, 52½c. Oats—Cash, 29c; May, 29½c; July, 29c; September, 29c.

Kansas City Produce.

KANSAS CITY, May 27.—Eggs—There was a

light run this morning, and prices were ¼c higher. The market is quoted at 9½c for candled stock.

Poultry—The supply is good and market steady and very firm; hens, 7c; springs, 18@20c a pound; "peepers" not wanted; roosters, 15c. Turkeys sell slowly; gobblers, 6½c; hens, 7½c. Ducks, 5½c. Geese, dull and not wanted; alive, 4@4¼c. Pigeons, firm; \$1.00 per doz.

Butter—Market improved and supply heavy; extra fancy separator, 15c; fair, 12@13c; dairy, fancy, firm, 13c; fair, 8@10c; store packed, best, 10c; fair, sweet packed, 7½c; packing, old, 4@5c; stale butter finds no sale.

Strawberries—Market scarcely supplied with either home grown or shipped stock. Missouri, Kansas and Illinois choice to fancy, \$2.25@2.75; southern stock, \$1.00@2.00; hold-over stock, from 50c up, according to quality; home-grown, fancy, \$2.00@2.75.

Fruit—Apples, supply moderate; market steady on good apples; best fancy stand, \$3.00@7.00; common to choice varieties, \$2.00@4.00.

Vegetables—Potatoes, market steady on new and strong on old stock; new, \$3.75@4.00 per bbl.; \$1.25@1.35 per bu.; Colorado, market 70@80c per bu.; good to choice, 65@70c; common to good, 50@60c. Sweet potatoes, slow; red and yellow, 25@30c per bu.

WOOL



References: Metropolitan National Bank, Chicago, and this Paper.

SHIP YOUR WOOL

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To everyone contemplating a purchase of a colony or two of bees we would suggest the following: Do not be carried away with the notion that the heavier a colony of bees is the better it is. We have known many sadly disappointed in following out this idea. The colony selected may have very few bees in it. It may be full of honey, to be sure, but the bees that made it may have long since disappeared, the queen may have died and no bees have been reared and, consequently, no consumption of honey was demanded for raising young brood. Hence the great quantity of honey left. If the box in which the colony is be large, as many of them are in the old style, there may be a great deal of honey and a good colony of bees at the same time.

To ascertain whether a colony has a live, active and laying queen is another important matter which can be easily found. In movable comb hives it is very easy to discover the presence of the queen, even if you do not see her. Taking up a frame in the brood chamber, near the center, and examining it, if the colony has a prolific queen, eggs and brood in all stages of development will be found about the last of February or during the month of March. If these are not visible during the last-named month the queen has disappeared, and, if a goodly number of bees yet remain, the colony should be furnished with another queen, if one can be secured. Giving such a colony a frame of comb, with eggs and brood from another strong colony, is generally recommended, but for our own part we have not found this to work so well as giving the bees in early spring to another colony.

Taking combs of brood from even a strong colony weakens and discourages it, and what is gained on the one hand is lost on the other. Any weak colony will be strengthened by the accession of even a pint or quart of bees from another hive. The difficulty of getting drones in early spring to fertilize a virgin queen is so great that several queens have to be reared before it can be accomplished. The colony will be still weak until it secures a laying queen. All this requires care and attention, and frequently issues in disappointment. We have abandoned the practice.

In an old box hive it is far more difficult to ascertain the presence of the queen. By tilting such a box to one side and looking at the board on which it is placed, if imperfectly formed grubs or parts of their bodies are seen, it is a sure evidence that brood rearing is going on and the colony is all right. In the absence of these indications, we have inverted such boxes, and by blowing some smoke on the bees have driven them to the top so that we could by separating the combs see the brood. Some think that when bees in the spring begin to carry in pollen it is a sure sign that brood rearing is going on, but in our experience it is not infallible.

Anyone by close observation can easily discover in the course of a week whether the bees are increasing or not. They increase rapidly after they begin carrying in pollen.—Farm Journal.

The Color of Beeswax.

Dr. C. C. Miller, in a recent number of Gleanings, gives the following "straw" on the color of beeswax: "Who of us hasn't wondered what it is that gives the bright-yellow color to beeswax? Wax is generally considered white when first produced in little scales. Cowan says it is always tinted, the color coming from the pollen consumed. But what makes it get yellower in the hive? A German writer says that, like the young of nearly all animals, the young bee, on first emptying its bowels, discharges feces of intense yellow, and this colors the comb. White comb confined in the center of a colony, but inclosed in wire cloth, remains white."



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SHOULD a colony become queenless from any cause, three weeks may be gained by having an extra queen to give it at once.

No TIME should be lost in giving a queenly colony a comb of eggs or young larvae, or both, from which to raise a queen.

THE best time to transfer bees from one hive to another is about the season of swarming, but if care is taken it may be done on any warm afternoon when the bees are actively at work.

WORKER bees, being undeveloped females, may now and then be sufficiently developed to lay eggs, but as they are incapable of meeting the drones and becoming fully fertilized their eggs will produce only drones.

WEAK colonies may be united after smoking them well by removing the combs, with the bees adhering, and placing them together in one hive, spraying them with peppermint water, so as to give them all the same scent.

TO CLIP the queen's wings, open the hive and lift the frame carefully and avoid jars. When the queen is seen, with a pair of sharp-pointed scissors, lift one of the front wings and cut off about one-half of it. This will prevent her leaving the swarm.

WORKING with bees at unreasonable times, leaving honey exposed among the bees, induces robbing. It is only the weak colonies that are robbed. One of the easiest and best preventives is to keep the colonies strong. Contracting the entrance so that but a single bee can pass is a good cure.

FEEDING early in the spring is often advisable to stimulate breeding and to keep the colony strong, so that when the early bloom comes, it may be sufficiently strong to gather the honey. Coffee and A sugar reduced to the consistency of honey is the best for feeding in place of sealed honey.

"Among the Ozarks,"

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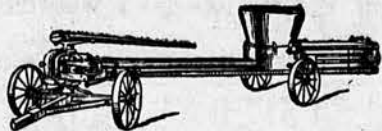
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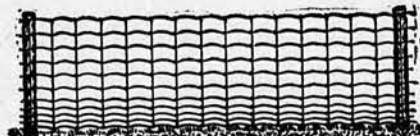


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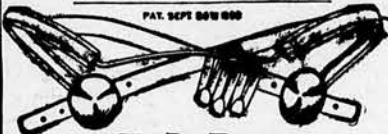
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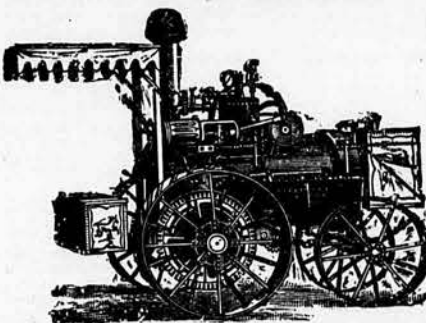
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