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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, Kansas.

VALLEY GROVE HERD OF SHORT-HORNS.—For sale, choice young bulls and heifers at reasonable prices. Call on or address Thos. F. Babst, Dover, Kas.

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MAPLE GROVE HERD OF FANCY BRED Poland-China swine. Also Light Brahma fowls. Owned by Wm. Plummer & Co., Osaage 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. THEMANNSON, 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.

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ASHLAND STOCK FARM HERD OF THOROUGHbred Poland-China hogs, Short-horn cattle and Plymouth Rock chickens. Boars in service, Admiral Chip No. 7819 and Abbotford No. 23561, 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.

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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. Chicks 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.

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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. STONEBRAKER, Panola, 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.

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.

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Cedar Point, Kas.
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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.

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BERKSHIRES
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Have for sale pigs from State fair winners. Can fill classes for show. Boars for fall service. A few choice sows bred. Address
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S. McCULLOUGH,
Ottawa, Kansas.
Breeder of Pure-bred
BERKSHIRE SWINE.
Stock for sale at all times.
Satisfaction guaranteed. Write for what you want.

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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.

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Breeder and shipper of
prize-winning
Large Berkshire Swine.
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Bronze Turkeys.
Headed by King Lee II. 29801, Mephistopheles 32412.

J. W. BABBITT, HIAWATHA, KAS.
BREEDER OF
Regist'd Berkshire Swine
45 in herd, headed by Lord
Majestic 34768, a son of Imp.
Lord Windsor 30461; dam
Imp. Majestic 30459. 6
boars, 12 gilts, by Model Duke II. 22467, 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 9309 S.,
by George Wilkes 5350 S. A public clearance sale
on Thursday, February 14, 1895, of 75 sows bred to
these and other noted boars. Inspection invited.

BERT WISE, breeder of Poland-China Hogs,
Holstein Cattle and Barred Plymouth
Rock Chickens of choicest strains.
Butler's Darkness No. 6846 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.
Young stock at all times. Satisfaction guaranteed.

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.

E. E. AXLINE,
OAK GROVE, JACKSON O., MO.
Breeder and shipper of
POLAND-CHINAS of the best strains.
Herd headed by Roy U. S. 24165 A. assisted
by Western Wilkes 12846 S. Some extra fall pigs.
Also winter pigs of both sexes at reasonable prices.
Orders being booked for spring pigs. Write or come.

CATTLE.

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

Breeder of PURE-BRED HEREFORD
CATTLE. Herd headed by Wild Tom 51502, a
son of Bean Real 11055 and assisted by sons of
Cherry Boy 28475, Archibald 1st 39258 and Wash-
ington 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, Fil-
bert, Cragg, Princess, Gwynne, Lady Jane and other
fashionable families. The grand Bates bulls Win-
some 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 10550 S. and
Joker Wilkes 12832 S. About 100 selected indi-
viduals 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 prizes
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, Burton, 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 20251 A., assisted by Com-
bination 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'rs,
Horton, Kas. Headquarters for
Admiral Chip pigs. The great \$250
boar, Admiral Chip 7919, heads the
herd, assisted by Kansas Chief 13676, Winterscheidt
Victor 13294, Geo. Wilkes Jr. 11893. 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, Kirklev-
ington 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 9903 S., assisted by a Black U. S. son of Imi-
tation 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 24985 O. (who has the best Columbian record
west of the Mississippi), J. H. Sanders Jr.,
Hadley Jr. 2555, 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 18.)

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.
SEPTEMBER 18—Martin Melsenheimer, Hiawatha, 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.)

VALUE OF FEEDING STANDARDS.

It should be borne in mind that a feeding standard is simply a concise statement of the results of experiments and observations. Hence its application is to the average conditions. No single fixed standard can be laid down for all conditions. It is intended simply as an aid to rational feeding, and must be used in connection with intelligent observation on the part of the feeder. It has been claimed by some that the standards of Wolff do not apply to our conditions, that they are too high in protein. As a rule, they call for a somewhat larger amount of protein in proportion to the carbohydrates and fat than is given by many successful feeders in this country, especially for dairy cows. This fact has been brought out by statistics collected by the experiment stations of New York (State), Wisconsin and Connecticut (Storrs). The Wisconsin station collected the rations fed by 128 successful dairymen and breeders in different parts of the United States and calculated the digestible nutrients in them. While they varied very widely, the average per day and per cow was found to be 24.51 pounds of dry matter, 2.15 pounds of digestible protein, 13.27 pounds of digestible carbohydrates and .74 pound of digestible fat, with a fuel value of 31,250 calories. The average of sixteen rations fed in Connecticut, as reported by the Connecticut Storrs Station, was 2.48 pounds of digestible protein, 14.09 pounds of carbohydrates and .94 pound of fat, with a fuel value of 34,800 calories. It is believed, however, that the standards proposed by Wolff are not very far from correct, and are the best we have at present. They have a value for farmers in indicating approximately the amounts of nutrients required under different conditions and enabling them to make up rations. Experience will demonstrate to the dairyman whether a ration as rich in protein as Wolff's standard is best adapted to his conditions, or whether one containing the amount suggested by the Wisconsin station is equally good.

CALCULATION OF RATIIONS.

The calculation of rations with the aid of the tables already given, will prove both interesting and profitable, for it will throw much light on the proper combinations of food for different purposes. At the same time it promotes a spirit of inquiry and close observation on the part of the farmer, which is one of the requisites of a successful feeder. Wolff's standard for a cow of 1,000 pounds calls for 2.5 pounds of protein, 12.5 pounds of carbohydrates and .4 pound of fat, which would furnish 29,590 calories of heat. A ration can be made up furnishing approximately these amounts of carbohydrates and fat, but as they serve practically the same purpose in nutrition an excess of one may make up for a slight deficiency of the other.

RATION FOR A DAIRY COW.

Let us calculate the daily ration for a cow, assuming that the farmer has on hand clover hay, corn silage, corn meal and wheat bran. From the table showing the amounts of digestible nutrients we find that 100 pounds of clover hay furnishes 84.7 pounds of dry matter, 6.58 pounds of protein, 35.35 pounds of carbohydrates and 1.66 pounds of fat, equivalent to a fuel value of 84,995 calories. Twelve pounds would have 10.16 pounds of dry matter, .79 pound of protein, 4.24

pounds of carbohydrates and .20 pounds of fat, giving a fuel value of 10,199 calories. In the same way the amounts furnished by twenty pounds of corn silage, four pounds of corn meal and four pounds of wheat bran are found. The result would be the following table:

Method of calculating ration for dairy cow.

	Total dry matter.	Digestible protein.	Digestible carbohydrates.	Digestible fat.	Fuel Value.
12 pounds of clover hay.....	10.16	0.79	4.24	0.20	10,199
20 pounds of corn silage.....	4.18	0.11	2.86	0.13	5,143
4 pounds of corn meal.....	3.40	0.28	2.61	0.13	5,921
4 pounds of wheat bran.....	3.54	0.48	1.65	0.11	4,446
Total.....	21.28	1.66	10.86	0.57	25,709
Wolff's standard.....	24.00	2.50	12.50	0.40	29,590

This ration is below the standard, especially in protein. To furnish the protein needed without increasing the other nutrients too much, a feeding

stuff quite rich in protein is needed. The addition of four pounds of gluten feed would make the ration contain:

Completed ration for dairy cow.

	Total dry matter.	Digestible protein.	Digestible carbohydrates.	Digestible fat.	Fuel value.
12 pounds clover hay, 20 pounds corn silage, 4 pounds corn meal and 4 pounds wheat bran....	21.28	1.66	10.86	0.57	25,709
4 pounds gluten feed.....	3.69	0.82	1.75	0.34	6,228
Total.....	24.97	2.48	12.61	0.91	31,937

This ration, it will be seen, contains somewhat more of carbohydrates and fat than the standard calls for.

Since the prime objects of food are to repair the waste of the body (or promote growth) and produce heat and energy, the calculation may be considerably simplified by considering only

the protein and the fuel value, without impairing accuracy. For example, suppose the farmer feeds his cows dry corn fodder (not stover), good timothy hay (Herd's grass), and a grain mixture composed of equal parts of corn meal, wheat bran and gluten meal. A ration might be made from these as follows:

Ration per cow daily.

	Dry matter.	Protein.	Fuel value.
10 pounds timothy hay.....	8.68	0.30	9,273
10 pounds dry corn fodder.....	5.78	0.25	7,155
4 pounds corn meal.....	3.40	0.28	5,921
4 pounds wheat bran.....	3.54	0.48	4,446
4 pounds gluten meal.....	3.62	1.02	6,797
Total.....	25.02	2.33	33,592

This ration is higher than the standard in fuel value, owing to richness of the materials in carbohydrates and fat, and slightly lower in protein. The substitution of one pound of new process linseed meal in place of one pound of the corn meal would give .21 pound more protein, which would make the ration contain 2.54 pounds of protein.

In calculating rations it is necessary to use weights rather than measures, as the analyses and tables are made on the basis of weight. As the farmer

measures the grain given it will be necessary to ascertain the relation between the amount to be given and its measure.

RATION FOR STEERS.

A common practice in fattening steers in the South is to feed fifteen to twenty-four pounds of cottonseed hulls and six to eight pounds of cottonseed meal. The nutrients contained in such mixtures are compared with the standard in the following table:

Rations fed to steers in the South.

	Dry matter.	Digestible protein.	Digestible carbohydrates.	Digestible fat.	Fuel value.
20 pounds hulls and 6 pounds cottonseed meal.....	23.39	2.30	7.15	1.09	22,235
20 pounds hulls and 8 pounds cottonseed meal.....	25.12	3.04	7.51	1.35	25,308
24 pounds hulls and 6 pounds cottonseed meal.....	26.85	2.32	8.42	1.16	24,874
24 pounds hulls and 8 pounds cottonseed meal.....	28.68	3.06	8.75	1.42	27,927
Wolff's standard:					
First period.....	27.00	2.50	15.00	0.50	34,860
Second period.....	26.00	3.00	14.80	0.70	36,062
Third period.....	25.00	2.70	14.80	0.60	35,082

The trouble with these rations is that they are all too nitrogenous, i. e., contain too much protein in proportion to the carbohydrates and fat. The hulls give bulk to the ration but do not furnish as much carbohydrates and fat as is required of a coarse fodder when

fed with so rich a feed as cottonseed meal. The rations could be improved by substituting two pounds of corn meal in place of an equal amount of cottonseed meal, or by substituting silage for a part of the hulls. The composition would then be:

Rations for steers in the South.

	Dry matter.	Digestible protein.	Fuel value.
20 pounds hulls, 6 pounds cottonseed meal, and 2 pounds corn meal.....	24.99	2.44	25,215
24 pounds hulls, 6 pounds cottonseed meal, and 2 pounds corn meal.....	28.55	2.46	27,834
15 pounds hulls, 15 pounds silage, 6 pounds cottonseed meal, and 2 pounds corn meal.....	23.69	2.50	25,798
15 pounds hulls, 2 pounds silage, 6 pounds cottonseed meal, and 2 pounds corn meal.....	24.73	2.53	27,084

The addition of two pounds more of corn meal to these rations would make them better balanced. Whether or not the use of corn meal will prove profitable will depend largely upon the

relative prices of cottonseed meal, hulls and corn.

For other sections of the country the following ration practically fulfills the requirements of the standard:

Calculating rations for steers.

	Dry matter.	Digestible protein.	Fuel value.
10 pounds shelled corn.....	8.9	0.79	15,683
5 pounds wheat bran.....	4.4	0.60	6,850
4 pounds linseed meal (new process).....	3.6	1.12	5,241
10 pounds corn fodder (dry).....	5.8	0.25	7,155
8 pounds wheat straw.....	2.7	0.02	2,220
Total.....	25.4	2.78	37,149

The ten pounds of corn fodder may be replaced by twenty-five pounds of corn silage without materially changing the composition of the ration.

A Sufferer Cured

"Every season, from the time I was two years old, I suffered dreadfully from erysipelas, which kept growing worse until my hands were almost useless. The bones softened so that they would bend, and several of my fingers are now crooked from this cause. On my hand I carry large scars, which, but for



AYER'S

Sarsaparilla, would be sores, provided I was alive and able to carry anything. Eight bottles of Ayer's Sarsaparilla cured me, so that I have had no return of the disease for more than twenty years. The first bottle seemed to reach the spot and a persistent use of it has perfected the cure."—O. C. DAVIS, Wautoma, Wis.

AYER'S

THE ONLY WORLD'S FAIR
Sarsaparilla

AYER'S PILLS Promote Good Digestion.

RATION FOR PIGS.

As a result of experiments which have been in progress for several years at the Massachusetts State station, the station recommends the following proportions of skim-milk and corn meal, according to the weight of the pig:

Pigs weighing 20 to 70 pounds, 2 ounces of corn meal per quart of skim-milk.

Pigs weighing 70 to 130 pounds, 4 ounces of corn meal per quart of skim-milk.

Pigs weighing 130 to 200 pounds, 6 ounces of corn meal per quart of skim-milk.

The pigs are fed all they will eat up clean. A ration of five quarts of skim-milk raised by setting and twenty ounces of corn meal for a pig in the first period, up to seventy pounds weight, would furnish approximately:

	Fuel value.	Digestible fat.	Digestible carbohydrates.	Digestible protein.	Dry matter.
10 pounds of skim-milk.....	1,805	0.08	0.04	0.27	0.31
14 pounds corn meal.....	1,880	0.04	0.52	0.09	1.06
Total.....	3,685	0.12	1.29	0.40	2.02
Standard for pig weighing fifty pounds.....	3,496	1.50	0.33	2.10	

Nutrients in ration for young pigs.

Buttermilk might be used in place of skim-milk, but pound for pound it has not usually given quite as good results as skim-milk.

SELECTION OF FEEDING STUFFS.

In selecting feeding stuffs for his stock the farmer will naturally be governed by the conditions of the market. The cost of feeding stuffs is controlled by other factors than the actual amounts of food materials which they contain; indeed, there often appears to be very little connection between the two. Bearing in mind that the protein is the most expensive ingredient, the farmer can make his selection with the aid of the tables showing the

digestible materials in 100 pounds. These will show him whether wheat at 50 cents per bushel is a cheaper feed than corn at 60 cents, and how gluten meal at \$23 per ton compares with linseed meal at \$27. In these comparisons only the protein and fuel value need necessarily be considered. Of course, the special adaptability and the reverse of some materials to different kinds of animals will be taken into account.

But another important consideration where fertilizers or manures have to be relied upon is the manurial value of a feeding stuff. This is shown by the nitrogen in the protein and the phosphoric acid and potash in the ash. Feeding stuffs differ widely in this respect, wheat bran and cottonseed meal having a high manurial value, while corn meal is relatively low. The value of the manure is largely determined by the character of the food given. If the manure is carefully preserved a large proportion of the fertilizing constituents of the food are recovered in the manure, and go to enrich the land. This matter has been treated in a separate bulletin on barnyard manure.*

Agricultural Matters.

Farming Fifty Years Ago.

The editor of the *Indiana Farmer* has been looking over the files of his paper issued fifty years ago. He finds that in 1845, Rev. Henry Ward Beecher was its editor and that the editorials are written in the gifted minister's peculiar style. The present editor finds that:

"It is interesting to note how much attention was paid in that far-gone day to the very same subjects we are discussing now. For example, in the number for March 22, 1845, three pages are devoted to corn culture. In the article, the method of one W. C. Young, of Kentucky, who had made a record of 195 bushels per acre, was described. This wonderful crop was produced in 1840. His rule, he says, was to plow his corn land the fall preceding. He cross-plowed as early in the spring as possible and as deep. He checked off the first way with large plows and the second with small ones, making the checks three feet three

trates the ground more than two or three inches. Some of them adopted the drill plan, but a large majority planted in check rows.

"Here is the way in which Mr. Beecher touches off the Southern planter of that day. After quoting from an exchange that says the planter 'rides in a \$600 carriage for which he is in debt, his daughters thrum a piano that never will be paid for, he buys corn which he could raise at 10 cents a bushel and pays 60 cents for it, after 2½ per cent. advance to his commission merchant,' etc., Mr. Beecher adds: 'He could raise his own hogs, but he patronizes Cincinnati. Being the possessor of one staple he fluctuates with the market of that article. He is 'mixed up' in cotton and is a gambler therein. Meantime he wants money and draws on his factor. He wants cotton goods and clothes for his plantation that he could make at home. He orders them and feels large. The manufacturer, the insurer, the shipper, the freighter, the drayman, the warehouseman, the seller, and finally the commission merchant, all have a finger in the pie of profits, and the proud,

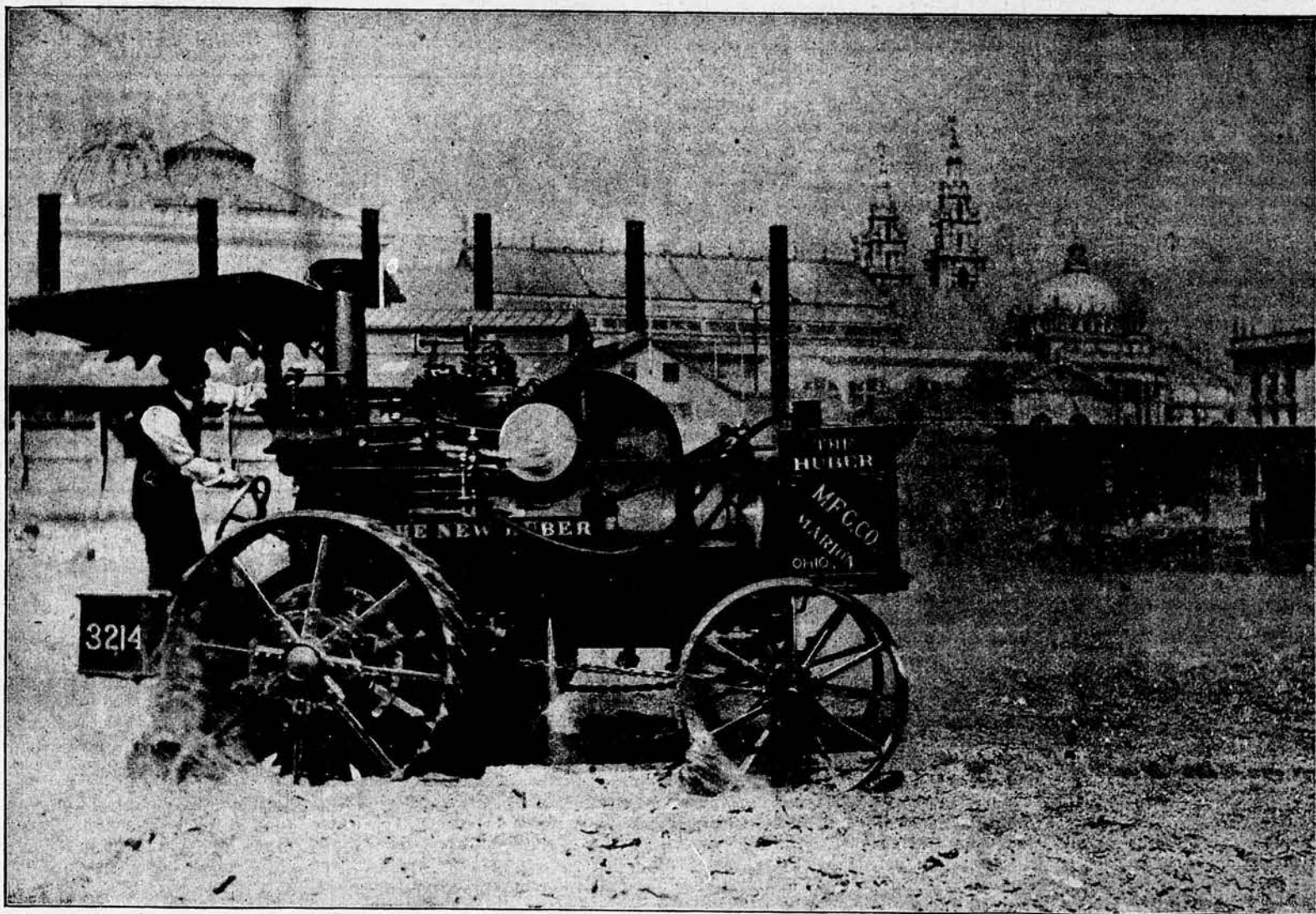
cents per pound here in Kansas. But can the flax straw be successfully worked up here in Kansas? That has to be tried, and the trying of it would not cost as much as the experimenting in making sugar. It would take a brake and a shaft to put on a few scutching knives. But the main question is, can we raise flax in Kansas that will produce a good lint? And then, can we dew-rot it? I think these two points are the main subjects, and to experiment on them would not cost a great deal. I would suggest that, if Mr. Ware knows how, he raise an acre or more of flax, have it pulled and thresh it by beating on a plank, spread it on a pasture field to rot it, and if it can be rotted successfully it will be a money-making business.

CHAS. DOERING.

Birmingham, Kas., May 28, 1895.

Making Alfalfa Hay.

The conversion of a heavy mass of alfalfa into a choice quality of hay is an operation calling for no small degree of skill and experience. But the process is one to be learned by intelligent observation and practice, rather than



THE NEW HUBER ENGINE—"THE WORLD'S FAIR PRIZE-WINNER."

It will be seen by referring to the table of feeding stuffs given above that hay from the leguminous crops—clovers, lupines, alfalfa, cow pea, etc.—contains about twice the quantity of digestible protein that hay from the grasses does. As a result they contain much more nitrogen for fertilizing purposes, and they are also somewhat richer in potash than grasses. The seeds of these plants (cow pea, soja bean, etc.) are exceedingly rich in protein and can take the place of expensive commercial feeds. By growing and feeding more leguminous crops the amount of grain required is diminished, the value of the manure is increased and the soil is enriched in fertility. Further than this, it has been demonstrated within the last few years that leguminous crops are able to derive the larger part of this nitrogen from the atmosphere during their growth, requiring little manuring with nitrogenous manures. They therefore enrich the soil, the ration, and the manure in nitrogen which they derive from the atmosphere without cost to the farmer, besides improving the mechanical and physical condition of the soil.

*Farmers' Bulletin No. 21.

(To be continued.)

inches apart. He planted from the 20th to 25th of March—invariably this early—and from eight to twelve grains in a hill, covering the same from four to six inches deep, 'greatly preferring the latter depth.' This is quite different from the modern plan, but the soil was loose and mellow then. But he tells us next that as soon as the corn was up a sufficient height he started the large harrow directly over the rows, a horse walking on each side. A few days later he ran the small plow with the bar next the corn. He then thinned to four stalks in the hill. The second plowing he turned the moldboard toward the corn. He plowed but four times and harrowed once. He grew two crops of corn in succession and then let the land lie in grass eight years."

The *Indiana* editor here remarks: "We used to plow corn just in the way he describes, when a boy, forty-five years ago, first threw the dirt away from the corn and then back again and we always raised big crops but no one thought of measuring the yield of an acre."

"Other farmers reported from nine five to 105 bushels per acre. One of them speaks of using a 'cultivator,' and did not allow the shovels to pene-

foolish planter pays them all. The year closes and he is up to his eyebrows in debt. This is the result of his not 'calculating,' nor even guessing the difference between farming and planting. One supports a family; the other supports pride, until pride gets a fall."

"We close with a few quotations from the table of prices current:

	Indianapolis.	Cincinnati.
Corn.....	\$.20@ .25	\$.33@ .35
Wheat.....	.50	.75
Hams.....	.05	.05
Apples.....	.37	.75@ .80
Clover seed.....	4.00	3.50@3.62
Salt.....	3.50
Butter.....	.12@ .18	.15@ .25
Eggs.....	.03@ .04	.12@ .14
Coffee.....	.08@ .10
Sugar.....	.08@ .10	.04@ .05

Flax.

EDITOR KANSAS FARMER:—There appeared an article from W. D. Ware, of Thayer, Kas., in the KANSAS FARMER of May 8—"Flax for the Fiber." He states that, in a former communication, he outlined, somewhat, the cost of utilizing the fiber of the flax straw. I would say, if the flax straw would be worked up into scutched flax, it would produce an income like this: One acre of a good crop of flax ought to produce 500 pounds of scutched flax, which would be worth from 10 to 12

from a written description. The first and second crops of each season need to be cured with special care, or they will certainly mold in the stack. Beginners need to beware of this point. The knack to be acquired is that of curing the hay sufficiently to insure its keeping sweet in the stack, without becoming so dry as to shed its leaves in the handling. This cannot possibly be accomplished by curing fully in the swath. A method much practiced is to rake the alfalfa while quite green into windrows, where it is allowed to cure somewhat more, and finally to make it into moderate-sized cocks, in which it is allowed to stand until ready for the stack. This process makes very nice hay, but where a large acreage is to be taken care of it is too slow and expensive. Alfalfa may be cured with entire success in the windrow, but it is important, when cured in this way, that there be ample facilities for putting it into the stack very rapidly when ready, otherwise it will become too dry and much of it will be lost in the handling, especially if it has to be carried from the field on wagons. Alfalfa should be cut on the first appearance of bloom, as experiments have proved its nutritive ratio to be considerably higher at that stage than later on.—B. F. Stuart, in *Arid America*.

Irrigation.

OFFICIAL CALL

For the Fourth National Irrigation Congress, Albuquerque, N. M., September 16, 17, 18, 19, 1895.

By the authority of the National Executive committee, the Fourth National Irrigation Congress is hereby called to meet in the city of Albuquerque, N. M., for the four days beginning September 16, 1895.

The present year is proving to be the most remarkable in the history of American irrigation. It has been a wonderful awakening of popular interest in the cause throughout the East, resulting in the organization of most potential forces for the purpose of co-operating with the Western people; the enactment of well-considered irrigation laws in eight States, and the creation of administrative systems in five of them; the recognition of the pressing nature of the problem by the Departments of Interior and Agriculture, under whose direction a National Board of Irrigation has been formed from officials in various departments of the government.

These splendid evidences of the triumphal progress of the irrigation cause demand a large, representative and effective session of the Irrigation Congress in 1895. A further reason for such a gathering is the fact that the Presidential campaign of 1896 will be inaugurated previous to the assembling of another session of this body, and that it is thus necessary to formulate, at Albuquerque, the demands which the friends of irrigation will desire to make upon the great political parties of the nation.

In view of the nature of the opportunity, a program of extraordinary variety, interest and importance will be arranged, and it is anticipated that this session of the congress will be more widely useful and influential than the previous conventions at Salt Lake in 1891, at Los Angeles in 1893, and at Denver in 1894. The friends of irrigation throughout the United States—for to-day the movement is national in its scope and interest—should unite in an effort to obtain a worthy result at Albuquerque.

BASIS OF REPRESENTATION.

In accordance with a resolution of the Third National Irrigation Congress, at Denver, Colo., September 8, 1894, the Fourth National Irrigation Congress will be composed as follows:

1. All members of the National Executive committee.
2. All members of State and Territorial Irrigation Commissions.
3. Five delegates at large, to be appointed by their respective Governors, for each of the following States and Territories: Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington and Wyoming.
4. Three delegates at large for each State and Territory not heretofore enumerated, to be appointed by the Governors of said States or Territories, or, in the case of the District of Columbia, by the President.
5. One delegate each from regularly organized irrigation, agricultural and horticultural societies, and societies of engineers, irrigation companies, agricultural colleges and commercial bodies.
6. Duly accredited representatives of any foreign nation or colony, each member of the United States Senate and House of Representatives, and each Governor of a State or Territory, will be admitted as honorary members.

The use of proxies and the manner of casting the vote of delegations will be regulated in accordance with a resolution adopted at Denver and printed on page 89 of the official report of that meeting.

By order of the National Executive committee.

WM. E. SMYTHE, Chairman,
Box 1019, Chicago, Ill.

FRED L. ALLES, Secretary,
110 South Broadway, Los Angeles, Cal.

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

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The Duty of Water--The Most Economical Method of Practicing Irrigation.

Mr. T. S. Van Dyke, the writer of the accompanying article, is vouched for by the *Rural Californian* as one of the highest authorities on such subjects in the State, and speaks from long practical experience. He is also well known as an author, and anything from his pen is certain to be interesting and useful:

"The amount of water needed for irrigation is commonly estimated by dividing the number of acres served by the number of cubic feet a second, or miner's inches, supposed to be running in the canal. This debits the duty of water with all waste, and all errors about the amount of water flowing. Both these are very great, especially the waste, where the whole capacity of the ditch is not yet called for by the rate of settlement, and loss of water is immaterial.

"While this is about the only available way of getting general averages, it gives a sorry conception of the duty of water as it will be in the future, when settlement is so dense that no waste can be allowed.

"This uncertainty as to the actual duty of water is increased by the common mode of estimating it by the rate at which water is used during a certain period, called 'the irrigating season,' instead of by the actual quantity put upon the land during the year. We find, for instance, on the books of a water company that Mr. A., whose water right is an inch to ten acres, has used on his ten acres during the year, thirty inches, twenty-four hours' run, once a month for six months. This makes 180 twenty-four-hour inches, whereas under his water right he was entitled to 365 twenty-four-hour inches. Had he put on the whole of this by using during the other six months the other 185 twenty-four-hour inches to which he was entitled, but which he let run to sea, it would have been equal to about one and one-half feet of rain on his ten acres. The 180 actually used were equal to a trifle less than three-quarters of a foot, and the amount used for the year was only half a miner's inch for the ten acres, or an inch to twenty acres estimated by the year. But, as during the six months it was applied at the rate of an inch to ten, it is called an inch to ten.

"This makes great confusion, because what is called the irrigating season varies so; and the indifference of irrigators to anything like statistics of their work, is very general and very great. Generally, in the southern counties of California, 'the season' is considered two-thirds of a year, though few use water as long as that. Thirty twenty-four-hour inches, once a month for eight months, would be 240 twenty-four-hour inches, which would cover ten acres one foot deep. They, therefore, call this an inch to eight acres. Two acre feet would thus be an inch to four, and four acre feet an inch to two; the same with estimates by cubic foot a second, a cubic foot being fifty inches under four-inch pressure.

"The water due for the rest of the year thus runs away. Suppose, in the absence of some place above ground in which to store it, it were stored in the ground. Three times in the last twenty years, notably in 1884-85, what would have been a bad, dry year, was made a fairly good one by the excessive rains of the preceding winter, which so filled the porous subsoil that it could not dry out in one season. In none of those seasons was the quality of any fruit injured by the heavy winter rains. Therefore, if the water running to waste in winter, because the irrigator expects the clouds to do their duty, were put in the ground, the water used in summer would serve a larger acreage. Until this is generally done, we are yet far from knowing the full duty of water.

"The quantity of water needed for any given crop is so dependent on the nature of the crop, the soil, the climate, the amount of rainfall, the time of its coming, the manner of its distribution, the skill of the irrigator, the perfection to which he wishes to bring the crop, and so many other points, as to make the deduction of any reliable rule from the vast mass of data quite

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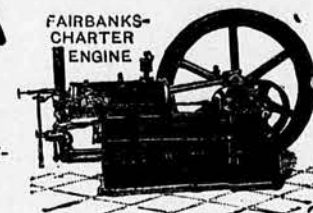
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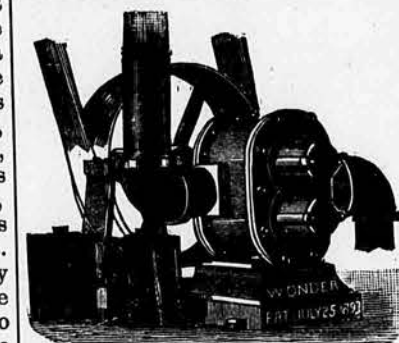
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hopeless. The conclusions of our Department of Agriculture are worthless, even ridiculous, because these data are all it has to reason from.

"Owing to loss by direct run-off, the coming of rain when not needed, and the loss by evaporation from the top soil of quantities too small to be of service, it will take on an average two feet of rain to equal in results one foot of water applied properly at the right time.

"On thousands of farms last year California proved, as it has several times before in seasons of short rainfall, that crops equal to the average of the best prairie States can be raised on one-fourth the moisture inferred necessary by the authorities, reasoning from the data afloat. Large crops were raised on a third of it, and over a vast area it was plain that, had the ground lain fallow the preceding summer, and the rain been under control, the largest crops ever seen could have been raised on eight inches of water; and this not upon fog or underground water, but far from the coast, and on dry upland.

"The amount of water used in irrigation in southern California is less than half that supposed necessary twenty years ago. The difference is mainly due to fine cultivation. By greater care and winter irrigation it is certain that it will go still farther in the future.

"Subject to the above qualifications, and some others too long for mention, the amounts used south of Tehachapi are about as follows:

"Under an average rainfall of twenty inches, for deciduous fruits, from six acre inches to one foot (on this rainfall many do not irrigate at all); citrus fruits in full bearing, one to three acre feet; corn and garden stuff, six inches to one acre foot; alfalfa in small patches for home use, one to two acre feet. In large fields, heavy crops for profit, three to five acre feet. Where the rainfall averages but ten inches these amounts are increased 20 per cent. in many places, except for alfalfa.

"Strawberries and similar stuff need

water often at a rate in excess of this, but no one keeps any account of the amount used on them. The larger figures above given represent great waste. Except on very porous soil, in a very hot and dry locality, the average of the two sets of figures is enough. On many soils, where the air is not too hot and dry, the smaller figures are enough where the water is carefully used and good cultivation kept up. The whole subject is full of qualifications that render deductions from one place worthless often for the very next. Nineteen years' study of the subject, with unusual facilities for travel and investigation, and most of the time with a direct pecuniary interest in the results, satisfy me that we shall always be very far from anything like a rule that will be of value in all parts of a State, and that, even in a single township, it may have forty-nine exceptions to fifty-one cases of accuracy."

Evaporation and Wave-Washing of Reservoirs.

EDITOR KANSAS FARMER:—Anent the evaporation from irrigation reservoirs, the following may be useful. I am not so situated as to experiment. I wish some one would do so and report.

A correspondent of the *Scientific American* asked how to prevent the drying up of wooden pails kept in a factory for use in case of fire. The answer was, "Put a few drops of oil, with water, in each pail."

A small quantity of oil will spread over a large surface of water, forming an air-proof coat that, I think, might absolutely prevent absorption of water by the dry and thirsty air. It would

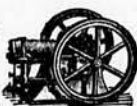
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kill all animal life in the water, thus abating the mosquito nuisance, but spoiling the pond for fish. For stock, the water would have to be drawn from beneath the surface with a pump, or a drinking place partitioned off by some means, oil-proof at the surface of the water. The outlet, too, should take water from below the surface, to prevent the escape of the oil.

It has been demonstrated that oil on the surface is wonderfully effective in calming the waves of a stormy sea. Perhaps it would prevent the beating and washing of the banks of earthen reservoirs in high winds.

Some heavy oil, like linseed or castor, would be best, I suppose, and a pint to the acre of surface enough, probably.

F. E. HALE.

Salina, Kas.

Subsoiling in Osborne County.

EDITOR KANSAS FARMER:—Irrigation, subsoiling and alfalfa-growing are the three redeemers of western Kansas.

I found, while in Osborne county last week, that farmers very readily assented to that proposition, and, with commendable zeal, many of them have gone to work to demonstrate by actual experiment the value there is in each of them.

In a preceding letter I spoke of the progress made in irrigation in Osborne county, especially of sub-irrigation. In my second visit to the county, last week, I visited quite a number of much larger plants, where water is taken from streams.

It will not be long, I think, until there will be men in the business of going around with traction engine and pump to furnish water for crops, as they now go around with steamer and machine to thresh the grain for farmers.

However, I wish at this time to speak briefly of the progress made in subsoiling among the farmers in Osborne county and the results obtained.

John Amoor, of Osborne, subsoiled twenty acres of corn ground. The subsoil plow was run in the furrow of the lister to the depth of ten inches below bottom of furrow. The corn was then planted with one-horse drill with ten inches of loosened subsoil below it. Having heard much talk about the good growth and color of this corn, I concluded to visit the field. Senator R. R. Hays, who is enthusiastic in the belief that subsoiling will aid greatly in storing and holding moisture in times of drought, and who has subsoiled considerable of his own land this spring, kindly tendered himself, horse and buggy and spade to make the inspection. We found the corn much stronger and richer in color and of larger growth than corn planted at same time on ground not subsoiled. With spade we dug down in furrow and found to the depth of twelve inches the soil quite moist and in excellent condition for plant growth. One good rain fell after subsoiling was done, filling up the reservoir made with good cultivation, and with water thus stored the plant was able to maintain itself and made good growth in spite of adverse weather conditions prevailing at the time. And should there be a heavy rainfall the soil would be in condition to relieve the plant of surplus water by a quick passage to the subsoil below. As the season progresses the condition of this corn will be carefully noted and at the end of the season the results obtained will be made known.

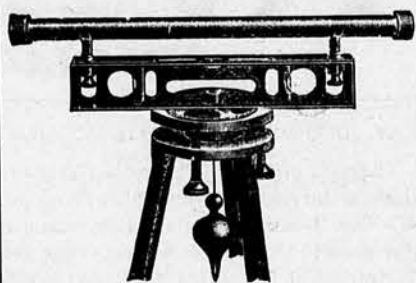
Mr. George O'Brien, near Luray, in south part of county, has also subsoiled part of his corn ground (about forty acres) in the same way. Mr. O'Brien is a live, progressive farmer and will give account of results obtained.

Much of the ground planted to alfalfa this spring was subsoiled—especially the upland. It is believed that the loosening up of the subsoil to the depth of sixteen to twenty inches on the upland will make conditions there much the same as in bottom land and a better and stronger growth of alfalfa is assured. As the philosophy of subsoiling becomes better known by our farmers the more subsoiling will be done. It promotes the circulation of air and water in soil, both of which are just as necessary to plant life and growth as they are to animal life.

M. MOHLER.

Leveling Instrument.

In laying off land for irrigation, a matter of first importance is to determine the levels. The KANSAS FARMER has desired to offer its patrons a reliable, low-priced instrument for this purpose, and has finally secured the one herewith illustrated. It is



manufactured by L. S. Starrett, a well-known and reliable manufacturer of fine mechanical tools at Athol, Mass., who warrants it to be true in every respect.

The price of the instrument is \$12.50 at the factory. By a special arrangement we are able to furnish it to subscribers, together with a year's subscription to the KANSAS FARMER, delivered at any express-office in Kansas, charges prepaid, at the manufacturer's price. Send orders with money to KANSAS FARMER Co., Topeka, Kas.

Weekly Weather-Crop Bulletin.

Weekly Weather-Crop Bulletin of the Kansas Weather Service, for week ending June 3, 1895.—T. B. Jennings, Observer Weather Bureau, Director:

CONDITIONS.

The week has been one of extremes—high winds on the 27th and 28th, high temperature on the 28th and succeeding days, with generous rains on the 30th over the State, except in the central southern counties, while in the northwestern counties they experienced the finest rains since July, 1893. The whole western division received an average of three inches of rain, being more than the middle and eastern combined.

RESULTS.

EASTERN DIVISION.

The high winds of the 27th and 28th did much damage to fruits and some to other crops. The leaves on southern side of fruit trees were scorched as by fire, and much fruit blown off. The rains of the 29th, 30th and 31st have greatly improved conditions. Corn is clean and growing rapidly; flax, oats, pasture and meadows improving; potatoes are looking fine and in bloom. Wheat and rye nearly ready to cut, especially in the south.

Allen county.—Terrific south winds reduced fruit crop, and bruised potatoes and vegetables severely, but the rains have greatly improved all vegetation.

Anderson.—All crops doing fine. Brown.—The rain saved the oats and improved pastures and meadows; fruit light, grapes excepted; corn growing rapidly.

Chautauqua.—Showers greatly improved all crops and pastures and replenished stock water.

Cherokee.—First of week hard on crops and pasture, but the rains have improved everything; corn O. K.; potatoes fair.

Coffey.—Corn and flax growing very rapidly; oats and grass much improved; oats beginning to head; wheat nearly ready to harvest, with good berry; fruit considerably pruned by the high winds; potatoes in bloom.

Doniphan.—Much damage by the high winds, but the rains are repairing the damage.

Douglas.—Oats beginning to head, straw short; corn growing; potatoes in bloom; timothy very short; clover poor.

Elk.—Chinch bugs destroying what little wheat is left; corn growing slowly.

Franklin.—Corn backward; cutworms bad in places; prairie grass good, tame grass poor.

Jackson.—Corn never better at this date in southern part; prairie hay will make a good crop; much fruit blown off; prospect for potatoes fair.

Johnson.—Rains have revived all crops.

Labette.—Oats and corn growing very rapidly since the rain; wheat filling.

Linn.—All crops improved; potatoes especially fine; much fruit threshed off by the winds.

Lyon.—An unusually favorable week for crops.

Marshall.—Crops much injured by

the heat and winds, but are improving since the rains.

Montgomery.—The most favorable week we have had this season, except the blighting winds the 27th and 28th; corn generally well cultivated; wheat harvest will begin in a few days, but will be a short crop; peaches and apples good; cherries nearly a failure.

Osage.—Showers have greatly benefited all crops; corn pushing forward; peaches and apples doing well.

Pottawatomie.—All vegetation doing well since the rains; oats heading short; corn looking fine; cherries in market but scarce.

Wilson.—Oats a complete failure; flax will make half a crop; wheat has improved greatly, but is full of bugs; much rye and wheat have been cut for hay; pastures improving; fruit trees badly damaged by the wind; stock water very scarce.

Woodson.—Corn growing rapidly; high and dry winds blew off many apples; all crops much improved by the rains; rye ready to cut.

MIDDLE DIVISION.

In the northern and western counties crops have made greater improvement than in the southern. The high winds of 27th and 28th did much damage, and in sandy soils burned some fields with drifting sand. Corn is yet the best crop in this division; wheat better than oats, heading with short straw but good berry. Fruit much thinned by the winds.

Barber.—The two days' high winds did great damage to fruit and some damage to other crops; but the showers of the 30th have improved conditions somewhat.

Barton.—Crops improved by the rain of the 30th, though badly damaged by the high winds previously; much Kaffir corn planted for fodder.

Butler.—Thursday's shower has im-

better than last year; grass has retrograded; the fodder corns are looking well.

Osborne.—The great drought broken; the best rain since February.

Ottawa.—The rain revived all growing crops; the high winds first of week did much damage and some corn was cooked as if by frost.

Phillips.—A glorious rain.

Reno.—The high winds destroyed much corn and garden vegetables and whipped most of the fruit off of the trees; rain came too late for small grains.

Rush.—Corn growing finely; wheat badly fired but improving since the rain, heading very short; oats beginning to head close to the ground; sorghum and millet growing well.

Saline.—Most of the oats are gone but the rain has helped everything in the ground and above the ground.

Sedgwick.—High winds blew off much fruit and buried some corn; the rain of 30th will materially help crops; corn growing rapidly.

Stafford.—A destructive week, the high winds doing much damage; much corn will have to be replanted.

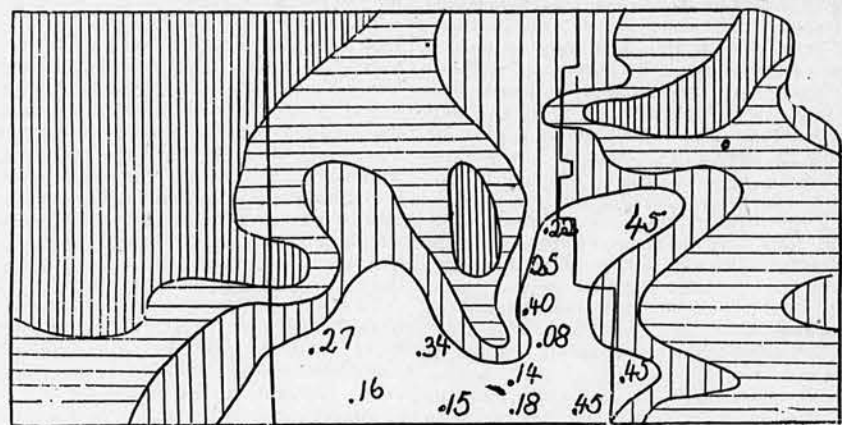
Sumner.—Corn looks well; wheat and oats fair.

WESTERN DIVISION.

The very good rains have greatly improved all crops above ground. Plowing will now be vigorously pushed for more plantings and a large acreage of fodder crops will go in. Much corn was planted this spring but a large part remained in the dry ground unsprouted; the heavy rains of this week will start that. Alfalfa-cutting has commenced in the south.

Decatur.—Prospects now for over half crop of wheat and a full crop of corn; grass will soon be good again.

Ford.—Hot winds of 27th and 28th hurt crops; fruit also somewhat dam-



Scale of shades less than 1/2 1/2 to 1 1 to 2 over 2 Trace

ACTUAL RAINFALL FOR WEEK ENDING JUNE 1.

proved condition of all crops, corn especially, which never looked better; small grains have improved; much fruit blown off.

Clay.—Garden seeds planted in April are now coming up; wheat, rye and oats have improved since the rains.

Cloud.—Corn now in good condition; pastures have revived and look green again; oats beginning to head, but the crop will be light.

Cowley.—Rains improving the crops; bugs are getting in the wheat.

Dickinson.—The rains have made marked improvement in wheat, oats and grass and started the corn, yet our subsoil is dry and needs more rain.

Ellis.—Spring crops looking better since the rain; prospect for wheat little better.

Harper.—Wind and sand storm first of week did much damage to all crops; wheat and oats will be almost an entire failure; corn doing fairly well.

Harvey.—Wheat doing finely, oats poorly, corn first-class, pastures again green, fruit badly blown off by high winds.

Jewell.—Corn all right except some late planting; much oats will be saved by the rain; wheat gone; fair prospect for potatoes.

Kingman.—Wheat fully headed and stands from three to twelve inches high and thin stand; corn looking fairly well; old pastures looking bare.

Kiowa.—High winds and drifting sand ruined a good deal of corn; potato vines beginning to fire; many peach trees dying.

McPherson.—Fruit badly whipped off the trees; wheat filling nicely, but very short straw; new potatoes in market.

Marion.—Wild grass and pastures short.

Mitchell.—Corn that is being worked is in fine condition; there is considerable not up yet, and listing is still going on; alfalfa very light crop; potatoes doing well; gardens promise

aged; pastures have improved since the rain.

Gove.—Good rains came most too late for wheat.

Grant.—Rains soaked the ground deep enough to plow the first time this spring; planting will go forward rapidly now.

Greeley.—Farmers will now plant more fodder crops; grass good.

Logan.—Corn and the various sorghums not up yet; spring wheat and barley look better than fall wheat, which is very thin on the ground.

Meade.—With more rain wheat and barley will make one-third crop; some good fields of corn; alfalfa crop light, except where irrigated.

Ness.—Prospects for small grain good.

Norton.—Rain came in time to save some rye, nearly all the oats and perhaps some spring wheat; the corn will now boom; grass improving; hail on 29th.

Rawlins.—What corn is up is doing very well; much corn will have to be replanted; wheat about gone.

Sheridan.—Late barley and oats will make a crop, and wheat a partial crop if nothing further happens; corn all right, except where washed out on the hill-sides; some corn to be planted yet in northern part of county.

Stanton.—Hot winds have damaged crops and gardens; since the rain crops improved and farmers busy plowing and planting.

Thomas.—Hot winds of 27th and 28th did some damage; with more rain a fair crop of barley, wheat and oats would be raised; potatoes and vegetables looking well.

Trego.—Wheat on new ground looks very well but on old ground it is a failure; pastures all right; hail fell on 29th.

Wallace.—Hot winds of the first of the week did some damage; barley and some wheat is doing fine; corn coming up nicely; alfalfa is being cut.

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.

MENDING THE OLD FLAG.*

In the silent gloom of a garret room,
With cobwebs around it creeping,
From day to day the old flag lay
A veteran worn and sleeping,
Dingily old, each wrinkle told
By the dust of years was shaded;
Wounds of the storm were upon its form,
The crimson stripes were faded.

Three Northern maids and three from glades
Where dreams the Southland weather,
With glances kind and arms entwined
Came up the stairs together;
They gazed awhile with a thoughtful smile
At the crouching form before them;
With clinging hold they grasped its folds,
And out of the darkness bore them.

They healed its scars, they found its stars,
And brought them all together
(Three Northern maids and three from glades
Where smiles the Southland weather);
They mended away through the summer day,
Made glad by an inspiration
To fling it high at the smiling sky
On the birthday of our nation.

In the brilliant glare of the summer air,
With a brisk breeze round it creeping,
Newly bright with a glistening light
The flag went grandly sweeping;
Gleaming and bold were its braids of gold,
And flashed in the sun-rays kissing;
Red, white and blue were of the deepest hue,
And none of its stars were missing.

*Revised by J. B. Metcalf, at "Blue and Gray" Reunion, at Seattle, October 30, 1894.

Written for KANSAS FARMER.

DID ROGER KNOW?

BY KITTIE J. M'CRACKEN.

Annis and Dolly Sawyer stood looking through the palings of the quiet country cemetery. They could see grandpa's grave, with its pretty flag, made by their own hands, draped over the head-stone, for he had been a loyal soldier and had taught them to love and reverence the "stars and stripes."

Every day, on their way home from school, they would stop, as now, and gaze sorrowfully at his lonely grave. Dear little girls, they still grieved for him with all their loving little hearts, though he had lain in that silent rest for almost a year.

Their papa had died many years ago, before they were old enough to remember the least bit about him, but grandpa had been very good to them, and now he was gone! and they missed him so, every day and all the time.

Dolly was sobbing and Annis wanted to comfort her.

"Grandpa can't see us, Dolly, but he knows that we miss him and that we keep his grave nice and clean," she said.

"Annis Sawyer, he can see us," sobbed Dolly. "But I most know he's so happy he won't 'member much 'bout us."

"He's in heaven, Dolly," said Annis, solemnly, "and he'll 'member us every day. Mamma said so. And, O, Dolly, its going to be 'Morial day pretty soon and he's dec'rate his grave with flowers; he loved 'em so."

"But we can't," said Dolly, choking down her sobs. "Annis Sawyer, you know we can't, 'cause Jack Frost has just snipped every one of mamma's roses—snipped 'em clear dead, and your box o' 'lyssum hasn't got the teeniest mite of a bud."

"We'll find 'em, somewhere," said hopeful Annis.

As they turned away, Roger, grandpa's faithful old dog, who spent much of his time lying beside the grave of his old master, slowly lifted himself, and crawling through some broken palings, came to Dolly's side, and looking up with soft brown eyes full of almost human sympathy, wagged his tail as if to say: "You see I grieve, too, Dolly."

That evening mamma told them that a rich gentleman had bought the "Merryvale place," and would bring his family there for the summer. On their way to school the next morning, sure enough, the shutters at "Merryvale" were opened and they stopped at the gate in glad surprise. "Sure's you live, Dolly, see the flowers!" said Annis. "A whole bay window full of 'em, and the porch, too, O my!" Then the door opened and a lady came out and spoke to them.

"Little girls, I see you are on your way to school," she said. "Would you mind doing me a favor?" "No ma'am," they answered, politely. "We'd be glad to."

"You are nice little girls, I am sure. Do you live in that cottage beyond the cemetery?"

"Yes'm," nodded Annis.

"Well, I am here with only the hired man, at present, and would like to have my mail brought to me each morning for a few days. Do you think you can, and will your mamma allow you to take the trouble? I will pay you well for it."

"O, yes ma'am, we can do it, but mamma wouldn't let us take pay for doing a kindness."

"We wouldn't want to, either," added Dolly.

The lady smiled kindly, and after giving some directions, said: "I will expect you to-morrow morning."

Mamma was quite willing, and for two weeks they did not fail to deliver the mail at Mrs. Marmaton's door as they went to school. Then one evening a little boy stood at the gate and beckoned them to stop. He had a pretty basket which he put into Dolly's hand. "My mamma wants you to take this," he said, "because you were so good to her before papa and I came. My name is Paul Marmaton, and I am coming to see you. We are going to live here all the time," and then he ran quickly away.

"Annis Sawyer, what you 'spose is in this basket?" said Dolly. "Let's peep!"

"Flowers!" screamed Annis. "Roses! O, Dolly, such beautiful roses! and such lots of white flowers and smilax. O, dear! Do you 'spose she knew we wanted 'em for 'Morial day, Dolly Sawyer?"

With flying feet they sped home to show their treasure. Mamma rejoiced with them and even Roger seemed wisely interested as the beautiful things were carefully taken out and placed in water, and then a greater surprise awaited them. Nicely wrapped in soft paper were two flat packages, one for each, and when undone Annis and Dolly were dumb for a second with delighted astonishment.

"It's us, mamma!" they screamed. "It's us!"

Sure enough, there they were; pink sun-bonnets and all, just as they were on the morning of their first acquaintance with their kind friend, Mrs. Marmaton. "As like as two peas," for Annis and Dolly were twins.

"O, mamma, isn't we happy!" they exclaimed, over and over again. Mamma helped to form a wreath of the lovely roses, and with loving patience Annis and Dolly formed the word "Grandpa," of sweet alyssum and smilax, while Roger did his best by giving sharp barks and wagging his tail encouragingly.

To-morrow will be Memorial day, and they are to march in the grand procession as it files by on its way to the cemetery, where, after the usual ceremonies, they would scatter flowers over the graves of the soldiers who died wearing the blue. Very early the little girls were dressed and waiting impatiently for the first sound of the brass band that would announce the coming of the Grand Army of Veterans which would lead the long procession. Yes, they surely heard it, and ran in from the gate where they had been watching for a half hour or more, for their basket of beautiful flowers. Alas, it was missing! Such a hurrying to and fro, searching in every spot where a basket could hide, in vain. It could not be found. There was no time to grieve, for the procession was coming, and, joining their little school-mates, they bravely tried to keep back the tears and make the best of their trouble.

The great gate was opened wide, prayers were said and speeches were made, then, while the band played and the people sang, the children flitted here, there, and everywhere, with their loads of precious flowers, scattering them generously wherever slept a loyal soldier.

Annis and Dolly could not stay away from dear grandpa's grave, though they had no flowers to strew upon it. Roger came to meet them and wagged his tail joyfully, as much as to say: "I am sure you will be delighted. See what I have done."

Wonder of wonders! There lay the empty basket, and on grandpa's grave were their lost flowers, fresh and sweet, and as carefully placed as though they had done it.

Did Roger know all about it? Annis and Dolly thought he did, and lovingly hugged him for it.

If I Only Had Capital!

If I only had capital," we heard a young man say, as he puffed away at a 10-cent cigar, "I would do something."

"If I only had capital," said another, as he walked away from a dram-shop, where he had just paid 10 cents for a drink, "I would go into business."

The same remark might have been heard from the young man loafing on the street corner. Young man with the cigar, you are smoking away your capital. You from the dram-shop are drinking away yours and destroying your body at the same time, and you upon the street corner are wasting yours in idleness, and forming bad habits. Dimes make dollars. Time is money. Don't wait for a fortune to begin with. If you had \$10,000 a year, and spent it all, you would be poor still. Our men of power and influence did not start with fortunes. You, too, can make your mark if you will. But you must stop spending your money for what you don't need, and squandering your time in idleness.—Selected.

Hall's Hair Renewer is pronounced the best preparation made for thickening the growth of the hair and restoring that which is gray to its original color.

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

Royal Baking Powder

ABSOLUTELY PURE

W. D. HOWELLS AND LINCOLN.

There is no more interesting personality in the literary world of to-day than William Dean Howells. His account of a visit to the White House, near the beginning of Lincoln's term as President, is characteristic and conveys, as do all of his writings, much information in a way to be fully appreciated:

"I was then on my way to be consul at Venice, where I spent the next four years in a vigilance for Confederate privateers, which none of them ever surprised. I had asked for the consulate at Munich, where I hoped to steep myself yet longer in German poetry, but when my appointment came, I found it was for Rome. I was very glad to get Rome even; but the income of the office was in fees, and I thought I had better go on to Washington and find out how much the fees amounted to. People in Columbus who had been abroad said that on five hundred dollars you could live in Rome like a prince, but I doubted this; and when I learned at the State Department that the fees of the Roman consulate came to only three hundred, I perceived that I could not live better than a baron, probably, and I despaired. The kindly chief of the consular bureau said that the President's secretaries, Mr. John Nicolay and Mr. John Hay, were interested in my appointment, and he advised my going over to the White House and seeing them. I lost no time in doing that, and I learned that as young Western men they were interested in me because I was a young Western man who had done something in literature, and they were willing to help me for that reason, and for no other that I ever knew. They proposed my going to Venice; the salary was then seven hundred and fifty, but they thought they could get it put up to a thousand. In the end they got it up to fifteen hundred, and so I went to Venice, where if I did not live like a prince on that income, I lived a good deal more like a prince than I could have done at Rome on a third of it.

"If the appointment was not present fortune, it was the beginning of the best luck I have had in the world, and I am glad to owe it all to those friends of my verse, who could have been no otherwise friends of me. They were then beginning very early careers of distinction which have not been wholly divided. Mr. Nicolay could have been about twenty-five, and Mr. Hay nineteen or twenty. No one dreamed as yet of the opportunity opening to them in being so constantly near the man whose life they have written, and with whose fame they have imperishably interwrought their names. I remember the sobered dignity of the one, and the humorous gaiety of the other, and how we had some young men's joking and laughing together, in the ante-room where they received me, with the great soul entering upon its travail beyond the closed door. They asked me if I had ever seen the President, and I said that I had seen him at Columbus, the year before; but I could not say how much I should like to see him again, and thank him for the favor which I had no claim to at his hands, except such as the slight campaign biography I had written could be thought to have given me. That day or another, as I left my friends, I met him in the corridor without, and he looked at the space I was part of with his ineffably melancholy eyes, without knowing that I was the indistinguishable person in whose 'integrity and abilities' he had reposed such special confidence' as to have appointed him consul for Venice and the ports of the Lombardo-Venetian kingdom, though he might have recognized the terms of my commission if I had reminded him of them. I faltered a moment in my longing to address him, and then I decided that every one who forebore to speak needlessly to him, or to shake his hand, did him a kindness; and I wish I could be as sure of the wisdom of all my past behavior as I am of that piece of it. He walked up to the water-cooler that stood in the corner, and drew himself a full goblet from it, which he poured down his throat with a backward tilt of his head, and then went wearily within doors. The whole affair, so simple, has always remained one of a certain pathos in my memory, and I would rather have seen Lincoln in that unconscious moment than on some statelier occasion.—From "First Impressions of Literary New York," by William Dean Howells, in Harper's Magazine for June.

Chafing Dish Parties.

So great is the rivalry among the owners of fine chafing dishes and choice recipes to be cooked in them that cooking clubs, of both men and women, frequently meet and prepare a luncheon or ten o'clock supper entirely over the chafing dish. Each person brings or sends his dish and the materials for making it in advance, and the feast is cooked course by course by the different chefs. To prevent a superabundance of one kind of food, each guest is notified of the dishes that will compose the menu, or permitted to send in word of the concoction at which he is most skillful. In this fashion a chafing dish party may have much of the delight and terror of a summer picnic.

Toothsome Fig Cake.

Two cups sugar, 1 cup butter, 3½ cups flour, ½ cup sour milk, ½ teaspoon soda, ½ teaspoon cream tartar, 1 pound figs, shredded, 5 eggs, ½ teaspoon vanilla, little mace, whites of 2 eggs for frosting.—Mrs. J. L. R. Trask, in Farm and Home.

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.

"Among the Ozarks,"

the Land of Big Red Apples, is an attractive and interesting book, handsomely illustrated with views of south Missouri scenery including the famous Olden fruit farm of 3,000 acres in Howell county. It pertains to fruit-raising in that great fruit belt of America, the southern slope of the Ozarks and will prove of great value, not only to fruit-growers, but to every farmer and home-seeker looking for a farm and a home. Mailed free. Address,

J. E. LOCKWOOD, Kansas City, Mo.

MONEY MADE AT HOME

Last month I cleared, after paying all expenses, \$205.38; the month before \$180.80 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.



GALLONS FOR 25¢

Not of the preparations of coloring matter and essential oils so often sold under the name of rootbeer, but of the purest, most delicious, health-giving beverage possible to produce. One gallon of Hires' is worth ten of the counterfeit kind. Suppose an imitation extract costs five cents less than the genuine Hires; the same amount of sugar and trouble is required; you save one cent a gallon, and—get an unhealthy imitation in the end. Ask for HIRE'S and get it.

HIRES' Rootbeer

THE CHAS. E. HIRES CO., Philadelphia.

The Young Folks.

Written for KANSAS FARMER.

THE VERDIGRIS.

BY G. A. TANTON.

What strange desires possess the soul
That in the distance sets its goal—
Despite the beauties of our home,
Prefer in foreign lands to roam,
And praise some distant stream or sea,
Without a word for the Verdigris.

No ruined castles crown its shore,
No fortress frowns its waters o'er,
But dusky lovers here have strayed
And here their vows of lealty made.
The romance of a people free
Still clings around the Verdigris.

Talk not to me of the Nile or Rhine—
Their waters no brighter than these can shine,
As they gurgle and murmur past glen and glade
And glitter and gleam through sun and shade.
You may search from tropic to polar sea,
There's no prettier stream than the Verdigris.

Let those who will, to Europe go,
And stray where the Elbe or Danube flow,
And dwell in hoary piles of stone
That are fit for owls and bats alone,
Or in ruined castles by the sea,
I would rather live on the Verdigris.

BURMESE CHILDREN.

The Happy Boys and Girls of a Quaint Old Country.

You can find Burma very easily by consulting your school geography, if you don't know exactly where it is located. Finding the map of India, you will notice that this strange, interesting country is bordered on one side by the Chinese lands and on the other by the country of the Hindus. The thing that will most interest our readers is the fact that the Burmese children are among the happiest youngsters of earth.

They live in a gorgeous country, and their mothers are held in great respect, which is not always the case with the various races of old India. Some of the little Burmese girls are very pretty and very graceful. They are fond of many trinkets, and, though shy in their manner, they easily become acquainted with strangers when the latter are lavish enough in their gifts of pretty things.

All Burmese boys are educated in the Buddhist monasteries, but it has not hitherto been thought necessary to teach the girls more than to read and write. To be pretty, to be religious, to be amiable and gay-hearted, and to have a good business instinct is all that is demanded of a girl in Burma; presently, when she comes to learn the advantages which education confers in dealing with the foreigner, she will doubtless demand it as her right. To be pretty and to charm is her aim, and few things human are more charming than a group of Burmese girls going up to the pagoda to worship at a festival. With her rainbow-tinted silk tunic fastened tightly round her slender figure, her spotlessly clean short jacket modestly covering the bosom, and with her abundant black tresses smoothly coiled on to the top of her head, in the braids



A BURMESE PEASANT GIRL.

of which sweet-smelling flowers are stuck, the Burmese girl knows full well she is an object to be admired. Perfectly well pleased with herself, and contented with her world as it is, she gayly laughs and chats with her companions.

Burmese mammas have some sweet songs with which they lull their baby boys and girls to sleep. One of the prettiest of these is given below. These

verses are translated by Shway Yeo, a learned native poet; see how dainty they are:

Sweet, my babe, your father's coming,
Rest and hear the songs I'm humming;
He will come and gently tend you,
Rock your cot, and safe defend you;
Mother's setting out his dinner—
Oh, you naughty little stunner!
What a yell from such a wee thing,
Couldn't be worse if you were teething!
My sweet round mass of gold
Now pray do what you're told.
Be quiet and good,
As nice boys should.
O, now please,
Do not tease,
Do be good,
As babies should.

Ah, yes, Burma is a happy land, and its people are all gay and honest, and sober, and the sunlight is warm and strong in their land, even as their bodies are strong and their hearts warm.—N. Y. Recorder.

SOME QUEER NESTS.

An Indian Bird Which Lights Its House by Electricity.

A great comfort of the modern dwelling house was long anticipated by the birds, namely, lighting by means of electricity. This bird, called the Melicourvis Baya, is a tiny creature of India, and constructs a well-designed nest, which is suspended from palm trees and roofs of houses. The nest resembles a bottle in shape and is woven together with great art. In it are found hard balls of clay, and these are in reality candlesticks, in which glow-worms are set to serve as candles. These are placed about the entrance of the nest, which is, therefore, luminous. This lighting is a defense against snakes and other midnight prowlers, who are frightened away by the pale fire of the glow worm. The little birds never think whether their living candles suffer any more than the Roman emperors who used martyrs as torches.

A bird called the Toubane, smaller than the wren and larger than the humming bird, colored gray with red legs and yellow breast, lives in Africa, where it builds a curious nest. This is a structure shaped like a bellows, made of cotton, about seven by five inches. The queerest feature is the "watch tower," which the male bird erects under the eave of the entrance to the nest which projects over and protects the tower. The male never enters the interior of his dwelling, but sits in the tower, and in case of danger gives a signal and the female escapes.

The Pinc-pinc of Africa also builds a nest with a rounded projection at the entrance for a perch, on which the male bird mounts to guard his family.—Chicago Inter Ocean.

This Horse Is for Sale.

There is a horse owned by a farmer near Albany, N. Y., which has a great fondness for getting hold of a garment and tearing it to pieces in the same manner that a young dog would; that is, by placing his forefeet on the article and then catching hold with his teeth and tearing away until the cloth is in shreds. The other day the owner came home with a fine new beaver overcoat, which he took off and laid on the seat of his wagon. Then he unhitched the horse and sent him into the stable. Instead of going, the horse sprang at the wagon, snatched the overcoat and ran away with it. The distressed owner armed himself with a whip and recovered the coat, but not until a sleeve had been ripped out and a big hole torn in the back. That horse is for sale.

She Spoke Her Little Piece.

Hattie F., six years old, is thought to give promise of elocutionary talent. When Auntie May came to visit the family, therefore, and offered to give the little girl some lessons, the offer was gladly accepted. Hattie's preference for lofty sentiment prompted the first selection. It began: "See the eagle! How he soars!" After a few rehearsals, she was ready for a recitation before the assembled family. And there was great applause when she exclaimed: "See the eagle! How sore he is!"

Mixed the Babies Up.

In Washington county, Indiana, a woman and her daughter each gave birth to a baby on the same day. They were remarkably alike. Some friends in comparing the youngsters got them mixed. Now it is impossible to tell which is the uncle and which is the nephew.

ENTERTAINING GAME.

Any Boy Can Make the Board on Which It Is Played.

To play this new game you can either use the checker board, or, better still, make the game board complete in itself. I will show you how to make it before describing how to play the game. If you have tools of your own, so much will be gained, if not, you will have to get some one to make part of the game board at least.

Get six pieces of wood turned in the shape of checkers. If you have six spare checkers they will do, but do not spoil one toy to make another. You must next have a piece of wood long enough to allow seven holes to be put in, a little larger in diameter than the checkers.

Fig. 1.—This must be tacked or glued to a foundation one-quarter of an inch larger all round, and the same thickness as the other board, one-quarter of an inch.

Fig. 2.—The checkers must be colored to distinguish them, three painted black and three white. If the whole is



FIG. 1.

stained or varnished it will look much better. You can, if you wish, make a lid or cover, as shown in Fig. 3. It is, of course, the same size as Fig. 2, although it must be a little deeper than the board having the holes in, as it has

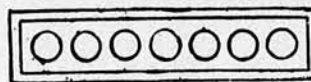


FIG. 2.

to allow for the height of the checkers, and so must be made one-eighth of an inch deeper inside than they are in height. If you do not want to go to the trouble of making a board, you can either use seven squares of a checker board, or else draw the pattern on your

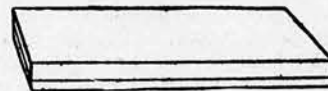


FIG. 3.

slate or paper. The game is played in this way: You place the three black checkers at one end, and the three white ones at the other, there being a vacant hole between, as shown.

Fig. 4.—The game is to get the three black checkers to change places with



FIG. 4.

the three white ones under the following conditions:

1. You must only move one way—i. e., the black move to the right and the



FIG. 5.

white to the left, neither being allowed to move backwards.

2. You can jump over only one man at a time, as in checkers, making, of course, a succession of jumps if there are vacant spaces to do so.

3. No piece can jump over its own color.

Here is the key showing how it is done; but I would advise everyone to

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Agent for Columbia and Hartford Bicycles
TOPEKA, - KANSAS.

try to do it first without looking at the key, as there is more satisfaction gained. For the sake of explanation we will letter the pieces or checkers and number the spaces, as in Fig. 5. The black are lettered A, B, C, and the white D, E, F. I. Move C to 4. II. Jump D over C into 3. III. Move E to 5. IV. Jump C over E into 6. V. Jump B over D into 4. VI. Move A to 2. VII. Jump D over A to 1. VIII. Jump E over B into 3. IX. Jump F over C into 5. X. Move C to 7. XI. Jump B over F into 6. XII. Jump A over E into 4. XIII. Move E to 2. XIV. Jump F over A into 3. XV. Move A to 5, and the game is finished.—Golden Days.

Was Thinking of the Other Kind.

Not long ago a well-dressed woman entered the savings bank in a western town, and told the clerk that she wished to deposit some money to the credit of George Sampson. Recognizing her as the wife of a man by that name, who already had an account open, the clerk rightly guessed that the money in question was to start an account for one of her children.

"Is he a minor?" he inquired.

"Well, I guess not!" responded the depositor, indignantly. "That's something we've never had in our family yet! And if Georgie shows any leanin' toward it when he gets old enough—he ain't but ten now—I reckon his pa can tell yarns about mines explodin' and shafts fallin' on top of folks, that'll settle him quick-er'n a wink!"

J.I.C. DRIVING BIT Still King
THE BIT OF BITS.
Will control the most vicious horse.
Sales Greater Than Ever.
Sample mailed XC for
Nickel, \$1.50. \$1.00
Stallion Bits 50 cts. extra.
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Perfect Health

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Liver and Kidney Balm.**

Mothers, fathers, sisters, brothers, all pronounce it the "PEERLESS REMEDY" for curing ailments of the Liver, Kidneys and Bladder, Female troubles, Rheumatism and Bright's Disease. For sale everywhere at \$1.00 per bottle.

THE DR. J. H. MCLEAN MEDICINE CO., ST. LOUIS, MO.

KANSAS FARMER.

ESTABLISHED IN 1863.

Published every Wednesday by the
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SUBSCRIPTION PRICE: ONE DOLLAR A YEAR.

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

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ADVERTISING RATES.

Display advertising, 15 cents per line, agate, (fourteen lines to the inch).
Special reading notices, 25 cents per line.
Business cards or miscellaneous advertisements will be received from reliable advertisers at the rate of \$5.00 per line for one year.
Annual cards in the Breeders' Directory, consisting of four lines or less, for \$15.00 per year, including a copy of KANSAS FARMER free.
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*.

The Iowa Swine Breeders' Association has a splendid program for its meeting of June 11 and 12.

The numerous applicants for the valuable bulletins of the United States Department of Agriculture, announced last week, will receive them as soon as they arrive from Washington, which, it is expected, will be within a few days.

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.

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.

An old settlers' meeting and picnic is to be held at Garfield park, North Topeka, June 13, commencing at 10 o'clock. Everybody is invited. Posts are provided in the park for hitching horses, but all are warned not to hitch to the shade trees. These old settlers' gatherings bring back the days when the preliminaries were being enacted to events which have contributed much to the history of human advancement.

H. V. Hinckley, Consulting Engineer of Kansas Irrigation Commission, is making a series of careful experiments to determine the rate of the movement of water through sand and gravel of various constitution. His results are recorded in detail and the knowledge gained will be of the first importance in determining the irrigation possibilities of the State and also in the settlement of controversies which are sure to arise under our crude laws regulating the ownership and use of water.

England's disposition in the matter of bimetalism was shown last week by the Chancellor of the Exchequer's emphatic public declaration that, under no conditions whatever, would the British government sanction any departure from the historic gold standard policy of the nation. From the opposite political party came authoritative warnings to Mr. Balfour and Lord Salisbury that the Conservatives would oppose any concessions towards bimetalism. This materially lessens the hope of England supporting a double standard policy, if, indeed, there was ever any expectation that the great creditor nation would consent to a policy which would stop the increase in the standard of values.

GREAT EXPECTATIONS.

The results of the judicious application of water to the soil, as they manifest themselves in uniformity and liberality of crop yields, are so much beyond the expectation of the inexperienced that, after ascertaining the facts in this regard, the novice is prepared to believe almost every big story with which the term irrigation is connected. Unfortunately this extreme credulity has affected writers for the press and has invaded the offices of manufacturers of and dealers in machinery.

It has been found that a fourteen-foot windmill with a suitable pump and reservoir will, where the lift is ten or twelve feet, raise water enough to enable a careful and experienced irrigator to supplement the western Kansas rainfall, so as to make crops sure on about fifteen acres. After a few times telling the uninformed writer when discussing the possibilities of reclaiming the high prairies, where the water supply is fifty to 150 feet below the surface, gets this statement modified to a ten-foot instead of a fourteen-foot mill; leaves out the condition as to depth, and conveys the absurd impression that any common ten-foot windmill and pump, with a reservoir, will irrigate fifteen acres of these uplands. The creation of such expectations is little less reprehensible than was the effort by which the semi-arid regions were settled by farmers under the representation that the Illinois methods of farming would bring prosperity to the settler on the plains.

A windmill which will raise water enough to irrigate fifteen acres where the lift is ten feet will be capable of raising enough for only seven and one-half acres where the lift is twenty feet, enough for three and three-fourths acres where the lift is forty feet, and will do very well to provide for one and one-half acres 100 feet above water. The same relations hold as to all kinds of power. The greater the distance from the surface of the ground to the surface of the water the more power will be required to lift a given quantity of water, or, if the power remains constant, the greater the distance the less water can be raised. These propositions are so simple and so obvious that their statement seems unnecessary, but for the fact that there is much confusion on this point.

Great expectations are sometimes based on what some improved pump will accomplish. It should be borne in mind that a pump is simply a machine by which power is applied to the lifting of water. In no case does the pump increase the power; in every case the friction of the pump consumes power. Some pumps consume less power than others in overcoming the friction of the machine; or, perhaps a better statement is that some pumps consume more power than others in overcoming the friction, for they all consume too much. This loss for friction is so universally present that it is usually not mentioned, and the reduced amount of water which a given power will lift a given height is frequently assumed as a unit, although the allowance for friction may be almost as great as the remaining effective power.

A simple formula for the relation of power, quantity of water and height of lift may be written thus:

$$(1) p = q \times h$$

This may be transposed as follows:

$$(2) q = p \div h, \text{ or } (3) h = p \div q$$

The question of the unit of power is an important one. In all engineering discussions this is the "horse power," often written "HP" or "h. p." This unit was introduced with the steam engine and it must always be remembered that it represents a greater amount of work than any ordinary horse can do all day, for ten hours of the twenty-four. It is also true that very many horses can exert for a few minutes at a time a greater power than the mechanical horse-power. It is readily seen that the element of time enters into the horse-power unit. This unit is 33,000 pounds raised one foot in one minute. An engine of one horse-power (actual) should raise this weight to this height once in every minute as long as the engine is operated. It is easily understood if the weight be re-

duced to, say, 11,000 pounds, the height may be increased to three feet. So also if the weight be reduced to thirty-three pounds the height may be 100 feet. The essential condition is that the product of the height by the weight must always be 33,000.

To apply this unit in computations of water lifted it is necessary to express the quantity of water in pounds. In these estimates it is sufficiently accurate to assume eight and one-third pounds equal to one gallon of water.

To apply this to a lift of, say, ten feet, and a power equal to one horse-power, let us see what quantity of water should be lifted *per minute*. Take the above formula:

(2) $q = p \div h$,
and for p substitute 1 h. p. = 33,000 pounds, and for h substitute 10 feet, and we have $q = 33,000 \text{ pounds} \div 10 = 3,300$ pounds. Each gallon weighs 8 1/3 pounds, so that we have for the final result, $3,300 \div 8 1/3 = 396$ gallons per minute.

But any one who expects that the three best horses on the place will do this work is doomed to disappointment. The computation is for the actual amount of work which must be delivered at the spout of the pump after overcoming all resistances, and it is expressed in the mechanical horse-power. Friction and other resistances will usually require more power than the work actually delivered, and the farm horse will do well if he exerts half of the mechanical horse-power. Farmers should familiarize themselves with this class of computations, for between over-enthusiastic writers and machinery men, who must each compete with the representations of the others and must claim to have machines equal to all expectations, they are likely to be misled into greater expectations than can possibly be realized.

COMPETING IN THE WORLD'S MARKETS.

The revival of industries in this country is relied upon by financiers to keep up the foreign demand for American securities. The shutting down of the manufacturing industries had much to do with creating the great depression. The reopening of these is one of the events to precede the expected boom. On this point, a Wall street circular of last Saturday says:

"There is no abatement of confidence in the permanence of the revival of general trade which set in with the spring business. The best evidence of the recovery in the manufacturing industries is the continuous advance in wages, mostly voluntarily granted by employers. In most cases the new tariff duties seem to impose no obstacle to production; in some, manufacturers find a positive advantage. The problem now, indeed, seems to be less how to compete with foreigners in the home market than how to outdo them in the foreign markets, in which the chances for Americans are becoming more hopeful and are attracting increased attention. Among those in close contact with our industries, the conviction appears to be gaining ground that we have entered upon a period of unusual growth and prosperity in manufacturing enterprise generally, and that, in some of the leading staples, we are entering the lists for an active competition in the world's markets."

No better fortune can be asked for our American manufacturers than to find themselves able to compete in the markets of the world as the American farmer has competed.

HOW ONE WOMAN FIGHTS THE DROUGHT.

One of the farmers of large areas in Kansas is Miss Mary Best, of Medicine Lodge. English by birth, she naturally cast her eyes over the Queen's dominions, when the trouble with the dry weather came on, to see if anywhere under the government on whose lands the sun never sets a remedy for drought had been found. Yes, in India irrigation is old and irrigation is new. Millions have recently been invested in its development. The subject was thoroughly studied and the first practical result on Miss Best's farm was the reconstruction of an old dam in the Medicine river. The next was the construction of a number of Jumbo windmills and home-made pumps. Water was turned on during the winter. A large tract was kept flooded about a foot deep for several days. After the

spring opened it was a long time before this flooded land got dry enough to list. Sixty acres of it were finally listed to corn. This land is yet rather too wet to cultivate easily, but the corn is prospering. A gentleman who saw it June 1, reports to the KANSAS FARMER that it was then knee-high and the finest green he ever saw. The lashing of the hot winds did not affect it. Those winds did, however, drive the "Jumbos" at a furious rate and lifted great quantities of water.

Miss Best's farming is considerably diversified. With her present knowledge of how to fight the drought it will be sure in its results and profitable.

BICYCLES.

From a rather curious toy or plaything the bicycle has rapidly advanced to the dignity of a vehicle. From a fad of the boy or the fast young man, it has gained a place of respect with young and old of both sexes. From a means of amusement on a smooth-floored hall, it has become a useful time-saver over even ordinary roads. The bicycle has been in court, too, and several State Supreme courts have decided that its rights to a share of the public highway are as valid as if it had been used by Noah and his family on emerging from the ark, or even by Adam and the other people who lived before the greatest rain storm recorded in history.

The bicycle is displacing many horses formerly used, especially in cities and towns, for business or pleasure. The man who lives a mile or two, or even further, from his business, mounts his two wheels, passing his neighbor in his buggy. The neighbor had fed his horse before breakfast, while the cyclist was reading his morning paper or taking an additional morning nap; had hitched his horse to the buggy while the cyclist was finishing his breakfast, and had trotted down the street while the cyclist was taking his "wheel" out of the porch. The cyclist is busy at his desk by the time the horse and buggy are provided for down town. The cyclist enjoyed his ride, and while not sorry for the neighbor with the horse and buggy, wished, as he passed the man on foot, that the price of bicycles would come down to a dollar a pound.

The riders of bicycles now are men and women in almost every walk in life. Messenger boys and ministers of the gospel, business men and editors, laborers and persons of leisure, men and women, boys and girls. Everybody who ever rides a bicycle likes it. The ability to glide away at the rate of half a rod at a step and the step easily taken—notwithstanding the slight attention given to balancing the machine and to avoiding collisions—contributes to the popularity of this popular conveyance.

On the score of economy, business men find the bicycle cheaper than street car fares and that less time is consumed in going and coming than by any other means. Laborers frequently reside long distances from their work, and they like to ride a bicycle. Packages to the weight of ten or twenty pounds are easily carried. Whole families use the bicycle for recreation, and for their use the machine has been made with two seats, with sometimes an attachable chair for the baby.

The demand has led to the establishment of immense factories devoted exclusively to their production. These have greatly multiplied during the last year and yet the market calls for bicycles more rapidly than they can be supplied. Wholesale dealers order them by the thousand and then enlarge their orders. It is said that many of the manufacturers are unable to take any more orders for the present season. Is the bicycle a passing fad, or has it "come to stay?"

The name of Iowa *Turf*, published at Des Moines, has been changed to *Spirit of the West* and has been enlarged from sixteen to twenty pages. Iowa *Turf* was established six years ago. It has rendered Iowa and Western breeders valuable aid and excellent service in building up the horse breeding industry in that State. As the new name indicates, the field will be enlarged and new features added.

Some Thoughts on Change of Climate and Weather.

EDITOR KANSAS FARMER:—Kansas papers often publish the observation of old settlers that high and constant winds in the spring and summer on these plains indicate increased moisture.

An observer cannot fail to see, as far as the brightest of weak but growing humanity can see, how closely all nature is linked. Physicists tell us how nearly the interior of North America came to be in larger part a desert than it now is; and quite recently mankind is very properly being recognized as one of the agencies by which climatic changes are effected.

There seems to be, from now unknown causes, at regular periods of time, a maximum and a minimum of precipitation of moisture from the atmosphere; and for a few years past, there appears to have been a scarcity of rain in general throughout this continent. If this be true, it took place gradually, by necessity, on account of the immense forces involved, and will, in consequence, as gradually return to a maximum of rain.

One thing we clearly recollect, that the Dakotas, Nebraska, Kansas, and the prairie part of Texas, formerly received large immigration because of the excessive rainfall in States east of the Mississippi, and the attendant difficulties to agriculture and trade in consequence, coupled with the fact that the States named, especially Kansas and Nebraska, were blessed with just enough rain to make abundant crops and leave us the finest of opportunities to work and go about unimpeded by mud, and enjoying a freedom from malaria and general disease unknown to the wetter States.

If the hypothesis of the extension and contraction of the area of precipitation on this continent be true, it is true of all the world, and has its source in astronomical causes.

The question of importance for us is, when is the minimum period of precipitation reached? If we answer that the drought of the plains about 1859 to 1860 was such period, and that 1893 and 1894 was another, then we have to admit that human agency has greatly modified the latter period by the artificial methods attendant upon settlement in this section. This, then, brings us to the admission that since human agency has modified the excesses of drought that it will continue to do so in an increasing degree. And so I believe. If, then, human agency is by the very necessity of its surroundings in the plains States changing the climate without unity of design, but incidentally, it is conversely in the East making the climate drier and more erratic by destroying the forests and draining the water surfaces on a great scale without design. Thus the western part of the great interior basin ought to be getting wetter and the eastern, including the Atlantic States, getting more liable to droughts than formerly. In the West, the truth of this hypothesis ought to be more and more apparent, and finally the people should unite in a general design to create artificial water surfaces and great forests, together with the concomitants of irrigation, which will regulate more completely the rainfall. In the East everything tends to the eventual destruction, through narrow selfishness, of the natural means by which their climate is regulated. The people there will probably ruin their climate and impoverish their soil, as in fact they are doing, before they will unite to restore it. In the meantime, the West may receive vast immigrations and produce great wealth from the adversities of the East. For example, look at wealthy, extravagant and luxurious Italy, once getting its bread from North Africa. The agency of man has changed all that. North Africa is, by far the greater part, a desert and Italy an impoverished soil, undergoing replacement of forests and change of climate, slowly being rebuilt as it was slowly destroyed. A desert on the earth's surface propagates itself in the degree that its area increases its power to absorb moisture, and throw it too

far away to hinder its progress on all sides till it touch the impassable sea or great elevation. In history, the desert or semi-desert has always produced the worst of savages. In all their invasions they have burst out of their evil abodes like the dreadful storms of the same places. Note the inroads of Zingis, Tamerlane and the modern Turks. Their track became a desert, but too narrow to prevent the refreshing influences of forests and streams, which they parted as they passed, from soon closing over their track. The descendants of the Huns, the Saracens and Turks, were eventually modified by water, grass and trees surrounding them. Our own long-to-be-remembered hunters, prospectors and cowboys, who first occupied the Great American Desert, at once partook of the weirdness of their surroundings. In character they were fast becoming as hot and as cold as the blasts of air which alternated over their savage abodes. Had not the railroad, the telegraph and the printing press enabled this accumulating mass of men—long on matter and short on morals—to be toned down by rapid interchange with better influences, America, like Asia, would have furnished anew the lesson of hordes of savage shepherds pouring out on civilization to devastate its wealth. Indeed, Gibbon, reflecting on this pregnant topic, predicted such future occurrences just prior to the age of steam and electric appliances to the social status.

But the muse has led us too far aside. Deserts mean savagery and *vice versa*. The even distribution of water over the earth's surface eliminates savagery because it greatly limits deserts. Rapid transit is the sure forerunner of the conquest of the desert. Instead of blowing the Gibbon-predicted Zingis with dynamite and peppering him with steel pellets shot by smokeless powder, as he descends in hordes upon the flowering fields and rich cities of Missouri and Illinois, or gets roaring drunk on sour mash whisky in Kentucky and Tennessee, we will, by the peaceful arts of applied science, sprinkle his hatching ground with copious showers of water. Instead of dragons' teeth we will sow the plains with the sweet cereals of peace and raise a better race of men.

On these plains, as in fact on most of this continent, we get, apparently, our moisture through the agency of the northeast trade winds. These winds follow the sun in its course north and are obstructed in their westerly course by the great mountain chain of the western part of this continent and also find easy access up the broad valleys of the Mississippi and all of its affluents. This deflects the trade winds far into and even north of the zone of calms of Cancer. Much of their moisture, no doubt, is carried east by the westerly winds which generally prevail on land in this zone. Naturally the motion of the earth would cause the larger volume of these winds to blow over the Rocky mountain plains, up the valleys and into the mountains. Encountering elevations and large bodies of inland waters and forests in the great valley and on the gulf shore, a great quantity of their moisture is precipitated. This precipitation tends, unaffected by human agency, to maintain and probably increase the conditions which cause it. And probably such increased conditions reached a maximum once where the forests spread in great density and so condensed all the vapor of these winds that a wide region at the base of the mountains was maintained as a desert. Then the Indians, roaming in the forests and on its westerly border, set fires to drive game and killed the trees. The dead trees, their seeds destroyed, fell to the ground and in after seasons were fired and burned over great areas, creating conditions that still further dried up and drove away the moisture. Thus the desert was extended east, probably to a greater or less extent, as far as the prairies extended east and south when the whites came. This condition destroyed the game, which in turn killed off or made the Indian emigrate, to become probably more learned conquerors or slaves in other countries. The country clear of man,

the forests spread their seeds through the agency of the winds, the lightest of them going farthest. Then the increasing fauna also spread the flora. Grasses sprang first, no doubt, and were modified and extended. These seeds provided conditions for the extension of precipitation. First up the valleys, in the general direction of the wind, the vegetation extended west. Spreading out in separate valleys, from north to south, they extended their moisture to each other, and along with it went the seeds and the whole became connected. The grass advanced along the line, first one hardy variety, followed by others less so. Streams trickled down the old channels or cut new ones as the showers fell, becoming more permanent and extended to the west. The former followed the course of water and vegetation; spread over the broad pastures; changed to meet environment. The Indian followed the food supply; they again burned the grass; roamed over the plains from north to south as the game followed the same.

At the advent of the whites the human agency was probably engaged in extending the desert to the east, after having done so many times before. On the prairies of Indiana, Illinois, even Tennessee, Kentucky, Arkansas and Texas, appeared a race in its westward advances, which, however much it has elsewhere destroyed the forests and streams, have conversely built them up and will continue to build them in all the prairie country. This race in dealing with its prairie environment will evolve an altered social economy to meet the trend of nature. This means that if it works with the trade winds, as the savages worked against them, they will aid it where they destroyed the savage.

Climates, especially those of the trade winds, can be changed by any agency capable of interfering with the growth of vegetation, which in turn interferes with precipitation, retention and diffusion of moisture. Thus the Arkansas river may several times have had on its banks, from its source to its mouth, magnificent forests, the varieties of which may be unknown, and as often lost its great volume after losing its forests more completely than it has in Kansas since Western immigration set in. Even its bed may have been so covered by drifting sands heaped across it that it was in after years turned miles out of its course when restored. After becoming denuded of forests and its waters dried up the re-extension of its waters would be possible by extending its flora.

The faster the wind, passing a given point, goes, the more moisture will go by with it. Consequently, if the spring season is late and northeast and north winds blow, bringing ice in the Mississippi basin until near June, the ingress of the trades have been checked by descending polar currents. When the trades again get the mastery they will rush into the basin and over the prairies with increased speed, piling up and pushing the foremost waves higher up than usual. They will spread farther up into the interior than usual, going all through the mountains, producing snow and rain. What will be the effect on the plains? Increased rains on the coast and Ozarks, extending over the plains to the west and north; increased rains in the mountains, resulting in floods, in conjunction with melting snow. These will flow out into the Rio Grande, Pecos, Colorado, Brazos, Red, Arkansas, Kansas, and the Platte. The waters of these streams, being of a lower temperature than the passing air, ought to condense it in great volume as they debouch on the plains. This in turn, ought to produce conditions that will spread the rain area and give us a late, wet season, with increased snowfall the coming fall and winter in the mountains and on the plains.

W. E. HUTCHINSON.
Wichita, Kas.

One dollar and sixty-five cents will pay for the KANSAS FARMER and the twice-a-week New York World. Everybody should read.

Ask your neighbor to subscribe for the KANSAS FARMER.

Water Raised 130 Feet.

EDITOR KANSAS FARMER:—I have been unable to get a dollar bill, so I send what ought to be a silver dollar. But the way the laws are at present it is merely a piece of silver with the government stamp on it and is an order for one gold dollar.

Have not had rain enough to germinate seed until last night, when we had a very good rain. Although we have had no rain we have had asparagus and pieplant since the middle of April, and peas, potatoes, radishes and other garden plants are as far along as usual in more favorable seasons. Yesterday I ate new potatoes at a neighbor's, which had been raised without rain. He has a well 130 feet to water and waters ninety head of cattle and has an acre of nice potatoes which have not been rained on until last night. Who says we are not onto our job?

C. STIMSON.

Chantilly, Kearney Co., May 30, 1895.

Weather Report for May, 1895.

Prepared by Chancellor F. H. Snow, of the University of Kansas, from observations taken at Lawrence:

A very warm and windy month. Seven Mays in the twenty-seven years have been warmer and but six have been more windy. The humidity was extremely low. There was more than an average number of hot days; the cloudiness and barometer were about normal. There were frosts of considerable severity on the 12th, 17th and 18th.

Mean temperature was 66.21°, which is 1.40° above the May average. The lowest was 34.5°, on the 13th. Mean temperature at 7 a. m., 61.64°; at 2 p. m., 76.48°; at 9 p. m., 63.40°. There were three days on which a maximum temperature of 90° was reached.

Rainfall was 3.65 inches, which is 0.87 inch below the May average. Rain in measurable quantities fell on eight days. The entire rainfall for the five months. There were seven thunder storms. of 1895 now completed is 7.37 inches, which is 5.11 inches below the average for the same period in the twenty-seven years preceding.

Mean cloudiness was 40.02 per cent. of the sky, the month being 0.59 per cent. cloudier than usual. Number of clear days (less than one-third cloudy), twelve; half clear (one to two-thirds cloudy), ten; cloudy (more than two-thirds), nine. There were three entirely clear days and none entirely cloudy. Mean cloudiness at 7 a. m., 48.00 per cent.; at 2 p. m., 42.00 per cent.; at 9 p. m., 30.60 per cent.

Wind was southwest twenty-five times; northwest, four times; north, twelve times; south, eighteen times; northeast, four times; east, seven times; southeast, seven times; west, six times. The total run of the wind was 13,156 miles, which is 1,332 miles above the May average. This gives a mean daily velocity of 438.50 miles, and a mean hourly velocity of 18.25 miles. The highest velocity was 60 miles an hour, from 3:25 to 3:35 p. m. on the 11th.

Barometer.—Mean for the month, 29.055 inches; at 7 a. m., 29.082 inches; at 2 p. m., 29.037 inches; at 9 p. m., 29.045 inches; maximum, 29.385 inches, on the 22d; minimum, 28.504 inches, on the 28th; monthly range, 0.791 inch.

Relative Humidity.—Mean for the month, 60.43 per cent.; at 7 a. m., 71.90; at 2 p. m., 44.30; at 9 p. m., 65.10; greatest, 93, on the 16th; least, 18, on the 18th. There were no fogs.

Keep Off Flies.

Farmers, teamsters, dairymen, and every man owning a horse or cow, should read the advertisement of the Fleogon Oil Co., on another page, which tells of the greatest and most useful of all modern discoveries and inventions to prevent cattle and horses from being worried and tormented by flies. Fleogon Oil will not gum the hair or injure the animal in the least, but on the contrary will disinfect the corrupt matter exuded through the skin and cleanse the skin of it, tending to promote the health and better the condition of the animal, which will be demonstrated in the glossy, healthy condition of the hair. The fly season lasts over 140 days, and the loss to a steer on feed could hardly be less than a pound a day. By stopping this waste and improving the looks and comfort of the animal you can see what a practical saving Fleogon Oil effects.

Homes for the Homeless.

The opening of two Indian reservations in northeastern Utah to settlers opens up over three and one-half million acres of fine agricultural and stock-raising land for homeseekers.

The Uintah and Uncompahgre reservations are reached by the only direct route, the Union Pacific system, via Echo and Park City. E. L. LOMAX, G. P. & T. A., U. P. system, Omaha, Neb.

Horticulture.

HARDINESS OF GRAPES.

EDITOR KANSAS FARMER—Hardness is usually used to mean the ability of plants to resist the cold weather of the winter. In this country it is more important that a plant shall be able to resist the hot, dry weather of summer. Resistance to drought is of more value than resistance to cold. The one as much as the other ought to be included in the term hardiness; so that the word ought to mean the ability of a given plant to withstand all the deleterious influences which are brought to bear upon it.

Trees and vines of all sorts have suffered sadly during the past winter, but it is an open question whether the greater damage is chargeable to drought or to cold. The excessively dry weather, commencing last October and not yet broken at this writing, has doubtless killed more trees and vines and has done more to weaken those which still survive than all the cold weather and late frosts can possibly be charged with. Still further, it must not be forgotten that cold weather does much greater damage to trees and vines when the ground is very dry than when it is comparatively moist. This may be contrary to the common belief, but it is on that account the more important that it shall be understood. In countries where irrigation is practiced it is not at all uncommon to give a fall soaking to the ground in order to reduce the danger of damaging winter freezes. Thus it seems probable that the evil effects of last winter's and spring's cold weather were increased by the uncommonly dry condition of the soil.

For these reasons it is entirely incorrect to attribute the loss of buds on our grape vines to the cold weather. The cold weather undoubtedly killed some; but how much is to be charged to cold weather and how much to drought is a question which no man is prepared to answer. Practically, it makes small difference. If a certain variety of the vine is able to withstand the inclemencies of our recent fall, winter and spring, it ought to be accepted that that variety is hardy. If it has sustained some degree of damage, that is some evidence that it is in some way lacking in hardiness. No better season could be selected for a test of the hardiness of our several varieties of fruit trees and vines.

Below I give a list of the varieties of grapes planted in the vineyard of the experiment station. For each variety is given the percentage of buds killed by drought and cold during the winter. All unripe wood was trimmed away before the beginning of winter, so that buds which were unsound in the first place have not brought the computations into error. No one need be surprised at the apparently extreme damage which the figures show. It will be noticed that the varieties which are commonly grown on account of their reputed hardiness show a general high standing in these figures. This experimental vineyard of course contains a large number of tender and weak varieties. It is not to be expected that one out of a hundred shall be as hardy as the time-tested Concord. Still it might be well for persons who may still think these figures too great to make estimates for themselves on their own vineyards by counting the buds as carefully as we did.

Several varieties are shown to have lost 100 per cent. of their buds. Many of these are now sprouting up from the roots; those which are not, but which appear to be dead, root and top, altogether, are marked with an asterisk (*).

None of the grapes were covered.

The grapes in the old vineyard were planted mostly in the spring of 1892, and are the same vines reported on in Bulletin 14. The vines in the new vineyard are of later plantings and were mostly set in the spring of 1894, and are, consequently, not so well established.

OLD VINEYARD.

Alvey (per cent. of buds killed) 100, Amanda 25, Amber 60, Amber Queen 100*, Aminia 85, Antionette 50, August Giant 20,

Autochou 98, Bacchus 60, Barry 60, Beauty 90, Berckman's 80, Black Eagle 100*, Black Defiance 100, Black Pearl 5, Brant 98, Brighton 20, Brilliant 75, Cambridge 0, Campbell 100, Catawba 25, Centennial 80, Challenge 15, Champion 90, Clinton 50, Concord 0, Conqueror 80, Cottage 20, Cornucopia 99.5, Creveling 10, Cunningham 70, Cynthiana 10, Delaware 70, Devereaux 12, Diana 75, Dr. Warder 5, Dracut Amber 88, Duchess 88, Eaton 80, Early Victor 90, Eldorado 20, Elvira 0, Etta 85, Eumelan 20, Faith 20, F. B. Hayes 35, Gazelle 100, Goethe 90, Golden Gem 5, Green Mountain 10, Grein's Golden 25, Hartford Prolific 50, Heribmont 99, Herbert 5, Hermann 91, Herman Jaeger 96, Highland 20, Humboldt 75, Iona 50, Iron Clad 2, Isabella 70, Israella 90, Ives 99, Janesville 70, Jaques 60, Jessica 5, Lady 90, Lady Washington 20, Lindley 60, Lurie 85, Marion 1, Martha 75, Mary Ann 90, Mason's 80, Massasoit 50, Mills 99, Missouri Reisling 99, Merrimac 95, Montefiore 20, Moore's Diamond 20, Moore's Early 10, Naomi 100, Neosho 4, New Haven 90, Noah 10, Norfolk 70, North Carolina 80, Northern Muscadine 73, Norton's Virginia 80, Othello 40, Peabody 1, Pearl 30, Peter Wylie 60, Perkins (?), Pocklington 90, Poughkeepsie 95, Prentiss 10, Rentz 2, Requa 96, Rochester 99, Roger's No. 2 96, Rommel 20, Salem 10, Secretary 5, Taylor's Bullet 20, Telegraph 40, Transparent 60, Triumph 100*, Uhland 4, Ulster Prolific 60, Venango 25, Vergennes 100, Walter 80, Wilding 30, Wilder 10, Whitehall 30, Woodruff Red 60, Wyoming Red 91, York Maderia 20.

NEW VINEYARD.

Admirable (per cent. of buds killed) 98, America 70, Bailey 80, Beacon 83, Bell 93, Belvin 91, Big Extra 76, Brilliant 100, Campbell 99, Carman 53, Conelva 93, Crown 100, Dr. Collier 53, Elsmere 99, Elvicaud 67, Eumelan 100, Fern Munson 97, Gold Coin 97, Gov. Ross 100, Grayson 84, Heribmont 100, Herman Jaeger 96, Hopkins 97, Lansell 100, Lindherbe 100, Lucky 100, Marguerite 99.5, Mrs. Munson 100, Muench 100, Mission 100, Neva Munson 100, Newman 100, Onderdonk 97, Opal 100*, Oriole 100, Perry 100, Pres. Lyon 96, Post oak x Heribmont 100, Roanoke 84, R. W. Munson 98, Rommel 100, Unknown 83, Van Deman 100, Vinita 99, Vitis Aestivalis 100, Vitis Arizonica 89, Vitis Baileyana 90, Vitis Borquiniana 98, Vitis Candicans 99, Vitis Champini 96, Vitis Cineria 20, Vitis Cordifolia (Var. Florida) 98, Vitis Cordifolia 92, Vitis Doaniana 82, Vitis Girdiana 100, Vitis Labrusca 96, Vitis Monticola 100, Vitis Rupestris 40, Vitis Rotundifolia 100, Vitis Rubra 100, Vitis Simsoni 100*, Vitis Solonis 8, Vitis Solonis (Var. Microspornia) 20, Vitis Vinifera 98, Vitis Zinfandel 99, Vitis Vulpina 57, W. B. Munson 99.

F. A. WAUGH.

Oklahoma Experiment Station.

Prevention of Late Frosts.

EDITOR KANSAS FARMER:—My vineyard and potato patch suffered so severely from the disastrous frost of May 19, last year, that when the like conditions threatened on the 11th, the present season, I determined to see what could be done to prevent it.

Having a pile of stable manure in easy reach, I kept fires going along the windward side, from 2 o'clock until daylight. The material was bone-dry (as is almost everything else just now), but it gave out abundant smoke, which the light wind carried to the southeast, where it hung, a dense cloud, just above the ground, for a third of a mile, before it rose and scattered, and this was easily kept up. There was a light frost that morning, but I think none at all where the smoke extended. The next evening the air seemed so much milder that my sleepiness got the better of my caution, and I did not renew the fight. I was, therefore, a good deal chagrined, the next morning, to find quite a frost and considerable damage.

However, I have some valuable experience. Next season I mean to have a thermometer and not trust to the "feel" of the air. These frosts always occur, I think, on clear, moonlit nights, so there is plenty of light to work, and the wind is always north. I will have a pile of dry stuff handy, and it will be easy to load it on a wagon, haul where needed, and keep a row of smudges, a couple of rods apart, along vineyard, garden and truck patch, which should be planted together for the purpose, and thus, probably, avert the damage, should Jack Frost make us another such unseasonable visit.

Salina, Kas.

F. E. HALE.

Health and happiness are relative conditions; at any rate, there can be little happiness without health. To give the body its full measure of strength and energy, the blood should be kept pure and vigorous by the use of Ayer's Sarsaparilla.

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June Notes.

Be ready to commence the harvesting.

Do not allow clover to get too ripe before cutting.

If clover is allowed to get too dry before hauling in there will be considerable waste in handling.

It will save time, and often considerable loss, if the harvesting machinery is put in thorough repair.

It is poor economy to go to the expense of growing a crop and then waste more or less of it in harvesting.

Put all of the hay under shelter if possible. If any must be stacked out let it be timothy or red-top.

Just when the grain begins to harden is the best time to cut wheat. [Doctors differ as to this.—EDITOR.]

It is poor economy to use poor oil with any kind of machinery, and especially so with the binder and mower.

This is one of the best months for sowing or planting soiling crops. More or less will be found an advantage on every farm.

The mower, rake, hay fork and carrier will lessen materially the cost and labor of saving the hay crop in good condition.

Commencing early this month it will be found a good plan to go over the orchard regularly and examine the trees for borers.

Even if the hogs or sheep are not pastured in the orchard it will pay to turn them in occasionally to clean up the fallen fruit.

In nearly all cases it will be found to be a good plan to mulch all young or newly set trees by the middle or latter part of this month.

See that all of the stock have an abundance of good water. A failure to do this will interfere materially with their growth and thrift.

As crops mature in the garden clean them up and plant again. Keep all of the ground occupied during the growing season with a crop.

Better hire a little extra help and have all of the cultivated crops in good condition rather than to hire extra help to care for them during harvest.

Sell off all the marketable stock that are in a fit condition, as it is only in exceptional cases that it can be considered advisable to fatten stock in July or August.

With ducks and chickens in a majority of cases a better price can be realized for all that are marketable now than to feed to maturity and market in the fall.

Clover needs a longer time to cure out than timothy or red-top, and oats require more time than wheat. Be sure everything is in good condition before storing away.

As the dry weather comes on see that the pasture is not eaten down too close. Not only will the stock fail to keep in a good condition, but the grass plants will be injured.

It is of no special advantage in an ordinary season to hill up the cultivated crops, while it is a positive damage in a dry season. Keep the soil reasonably level, fine and stir frequently. This will help to retain moisture in the soil.

Eldon, Mo.

N. J. SHEPHERD.

We have recently sent out a good many "Handy Cobbler" outfits, and shall be pleased to hear from those who have received them as to how they are pleased. If satisfactory it is a pleasure to know it, and if not satisfactory we want to be informed of the facts in detail.

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Nervous system paralyzed by nicotine means lost manhood, weak eyes, and a general all-gone look and feeling that robs life of its pleasure. Tobacco is the root of many an impotent symptom, and No-To-Bac a guaranteed cure that will make you strong, vigorous and happy in more ways than one. No-To-Bac guaranteed and sold by druggists everywhere. Book, titled "Don't Tobacco Spit or Smoke Your Life Away." Address Sterling Remedy Co., New York or Chicago.

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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

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In the Dairy.

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

The Dairy Cow--No. 2.

EDITOR KANSAS FARMER:—If the readers of the FARMER who file their papers will refer to the issue of February 27, we will try to tell them more about dairy form in cows.

Be it remembered that the idea of dairy form or type has passed the theoretical stage and is to-day an accepted fact by all advanced dairymen. In this test each cow has left a record of what and how much she consumed, as well as what she produced during the test, and that there has been no guesswork in the matter nor has the experiment been made to boom any particular breed or form.

In my first paper I called the attention of the readers of the FARMER to Dido, a cow denoting the beef type, of which she is a fair representative. In form she is what the average farmer would call an all-purpose cow. The station herd consisted of twenty-three cows at the time of the experiment, consisting of cows of all breeds, sizes and colors. The cuts of the five cows which have become famous in this experiment, were considered the best specimens as to form, as well as to actual production, and their breeding was as follows: Dido, Short-horn; Beckley, grade Jersey; Bettie, Guernsey; Dora, Jersey; Houston, cross between Guernsey and Jersey.

The following table represents the amount of food consumed, in pounds, for one year, or during the time of the experiment, in whole numbers:

	Barley	Corn	Linseed meal	Roots	Ensilage	Hay
Dido	1331	796	265	341	1745	1824
Beckley	1806	874	345	450	1870	1960
Bettie	1528	800	252	384	1780	1888
Dora	1729	894	434	446	1780	2050
Houston	2064	840	306	546	1640	2150

The above table shows the amount of different foods consumed. The cost of same were reckoned at Minnesota prices, and were as follows: Bran, \$11 per ton; barley, \$14; corn, \$14; linseed meal, \$26; roots, \$2; ensilage, \$2; hay, \$5.60.

The following table shows what these cows did with the food they ate and is the principal feature in the experiment. In this table is included the weight of the different cows, as well as cost of feed, the number of pounds of milk, pounds of butter, and net cost of one pound of butter, for each of the five cows, representing the four groups at the experiment station:

	Weight of cow	Cost of feed	Pounds of milk	Pounds of butter	Cost of pound of butter
Dido	1,302	\$82.13	5,562	262.30	12.2
Beckley	942	39.42	4,949	364.82	10.8
Bettie	802	34.04	4,957	324.40	10.5
Dora	877	37.58	6,515	428.90	8.8
Houston	981	41.32	6,976	444.80	9.3

Having these figures before us, let me note some other phases of the experiment. Out of the twenty-three cows in the list, at least three of them belonged to the Dido type. Their average weight was 1,240 pounds, square, smooth and level, good udders, etc., yet they were the most expensive cows in the herd, not the largest consumers of food, yet the most expensive machines with which to make butter. With Dido it cost 12.2 cents to make a pound of butter, while Houston made a pound of it at a cost of 9.3 cents, yet there are, perhaps, thousands of farmers and dairymen who are trying their faith and playing at a losing game with "Dido" cows, because, as a farmer said to me not long ago, they look like business. I had some experience last year directly in this line. Being compelled to have a cow we bought one against our better judgment as to form, because she was highly recommended by her owner. She proved to be a cow, but a long way from being a profitable dairy cow. I believe the man was honest in his recommendations, but he

had a poor idea of what constituted a good butter cow. Let the dairy farmers of this State make a study of these types and they will profit by so doing. Elm City, Kas. M. E. KING.

Information Wanted.

EDITOR KANSAS FARMER:—The present extreme depression of prices and scarcity caused by the recent dry season is a good time to turn about for the best resource for maintaining our families and meeting current expenses until such time as propitious conditions shall cause the earth to again bring forth her increase.

Having arrived at this conclusion in adverse seasons in the past, we turned our attention to the making of butter for several years, and while it has far exceeded the raising and selling of grain as a steady source of revenue, yet it is subject to many drawbacks, such as extensive competition from other butter-makers and oleo and butterine products, lack of cash markets or losses from business done with the ever unreliable commission man, making it a losing business, especially during the summer season. This caused me to look up the profits to be derived from turning our milk into cheese, with the result of ascertaining that cheese can be made far more profitable than butter under prevailing conditions, and at present not subject to such strong competition from fraudulent imitations. While 100 pounds of milk will make four and one-half pounds of 8-cent butter, which can be traded at the grocery for the necessary articles of every-day use, of course thus making a gross income of 36 cents per 100 pounds in trade, the same 100 pounds of milk will, if converted into cheese, produce ten pounds, which can be readily disposed of at present for 10 cents per pound, and seldom or never below 8 cents, which can mostly be obtained in cash, and will make the gross receipts, even at the lowest figure—80 cents per 100 pounds—considerable more than double that from the butter, and having the additional advantage of being far less perishable when properly made. The only disadvantage against making it being the fact that few persons have a proper knowledge of how to manufacture a salable article. With an object of obtaining what knowledge I could, I have lately interviewed several cheese-makers, with the result of getting their opinion that the making of good cheese is an art no more difficult to learn than that of making good butter, but a few nice, essential points in heating the milk and turning the curd need the personal instruction of an expert to enable the learner to succeed without perhaps several mistakes, costing the loss of either cheese or reputation or both, but easily learned by an intelligent person, and once learned will enable him to convert his milk into a cash article worth double what the butter from the same milk will produce in trade at the country store. One man who has been making the product of his own herd of from twelve to twenty cows for a number of years, tells me that the least average product from his herd for the season was \$28 per head, while he has made the season's average reach \$40 per head; all the work done by himself and family, and usually nearly enough feed raised for his herd of cows besides. I learn, however, that two or three persons can, in a properly arranged factory, handle the product of 400 to 600 cows, thus reducing very greatly the cost of making and insuring a more uniform and salable article when conducted by able managers. Information from parties having no axe to grind in regard to cost of necessary buildings and apparatus and best manner of securing most profitable returns from it would, I believe, be thankfully received through the columns of the KANSAS FARMER by many of its readers. CLARKSON HODGIN.

Dwight, Morris Co., Kas.

Will some reader of the FARMER who has had experience in cheese-making in all its bearings, please give the information desired? Others may be in the same condition as Mr. Hodgkin, and might be benefited by a timely article on this subject.—EDITOR.

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A Chance to Make Money.

I am out of debt, and thanks to the dishwasher business for it. In the past five weeks I have made over \$500, and I am so thankful that I feel like telling everybody, so that they can be benefited by my experience. Anybody can sell dish-washers, because everybody wants one, especially when it can be got so cheap. I believe that in two years from now every family will have one. You can get full particulars by addressing Iron City Dish-Washer Co., E. E. Pittsburg, Pa., and you can't help but make money in this business. I believe that I can clear over \$3,000 the coming year, and I am not going to let such an opportunity pass without improvement. We can't expect to succeed without trying.

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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) Philanthropies, 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.

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Gossip About Stock.

What Kansas breeders are going to make an exhibit at the fairs this season? So far Sunny Slope farm, Emporia, and La Veta Jersey Cattle Co., Topeka, are the only ones that have announced that they would show improved stock.

L. K. Haseltine, Dorchester, Mo., our advertiser of Red Polled cattle, is encouraged with the way stockmen appreciate the breed. Any of our readers desiring detailed information regarding the breed should have a copy of his last catalogue.

Geo. S. Prine, Secretary, Oskaloosa, Ia., writes that the annual June meeting of the Iowa Swine Breeders' Association will be held at Des Moines, June 11 and 12, in connection with the annual meeting of the National Association of Expert Judges of Swine.

Among others that have announced reduction sales of registered Poland-China swine, comes Mr. Martin Melsenheimer, the well-known and successful Brown county breeder, who will hold his annual reduction sale on his farm, near Hiawatha, Kas., Wednesday, September 18, 1895. He reports the best pig crop and of the best blood lines yet farrowed on the farm. It represents the get of seven prize-winning boars that were drafted out of the leading herds of five States. Remember the date, Wednesday, September 18.

A model breeder's catalogue has been recently issued of the Shannon Hill herd of Short-horn cattle, owned by Hon. G. W. Glick, of Atchison, Kas. It fitly represents the fine character of the herd and is a perfect hand-book of the most noted families and noted individuals, which fully come up to the standard recognized by the best breeders, in constitution, fine handlers, broad backs, mellow skin, and "the low down beefy sort." The information contained in this rare catalogue is intensely interesting and valuable to every breeder of Short-horn cattle in the land. The special chapters on the Wild Eyes, the Kirklevington, the Waterloo, the Filbert, the Princess, the Sanspareil, the Gwynne, the Lady Jane and the Belina families are invaluable contributions to Short-horn literature, as well as a large stride in the behalf of improved stock of Kansas. No breeder or buyer of Short-horns in this State should fail to have for future reference a copy of this incomparable catalogue—the best of the kind ever issued in the West.

Among others of our advertising patrons that report satisfactory returns, is Mr. E. E. Axline, the successful breeder of Poland-China swine and Barred Plymouth Rock chickens. He reports a nice, select string of fall and winter pigs that could go in order to make room for the 130 spring pigs that were sired by two as good boars as there is in all Missouri—Roy U. S. 18843 S. by Roy Wilkes 18505 A., a grandson of Black U. S. 18345 A. and out of Hill's Darkness 2d 65768 A., she by Earl Duffield and out of Maude 65760 A. His chief assistant is Western Wilkes 12846 S., a grandson of George Wilkes 14487 A., and out of Corwin Tecumseh 66680 A. by Grand Tecumseh 19243, and out of Lady Corwin 62924. Our field man reports "one of the finest lots of youngsters that he has seen this year in the two States Missouri and Kansas—and there is yet a choice string of fall and winter pigs awaiting new masters." The brood sows belong mainly to the Black Bess, Corwin and Wilkes strains and were selected for their brood sow character and ability to raise large even litters. Mr. Axline also states that their egg trade has been very satisfactory and that Mrs. Axline will make still greater efforts to please her customers during next season's trade in Plymouth eggs.

Publishers' Paragraphs.

RETAINS RUPTURE.—We especially call the attention of readers interested to our advertiser, R. I. Pearson & Co., who have the best truss that the writer ever saw, and any one suffering from a rupture should not hesitate to get the "human hand truss" and say that the KANSAS FARMER advised it.

The St. Louis Well and Machine Tool Co., whose advertisement appears elsewhere in this issue, have, during the past week, arranged with the Great Western Manufacturing Co., of Leavenworth, Kas., and Kansas City, Mo., to represent them. In writing for catalogues address the agents.

A reader of the KANSAS FARMER has inquired as to the value of Howsley's Spaying Mixture, advertised in this paper. The publishers have taken a good deal of pains to ascertain the merits of this preparation and have before them copies of letters from a number of users. These all speak favorably of their experience. We suggest that readers who are interested write, inclosing stamp for reply, to J. W. Hense, proprietor of West Side Dairy, 16th L. R. R., Kansas City, Kas.; W. C. Graham, Station A, Kansas City, Mo.; Gunn & Tyler, Bonner Springs, Kas.; J. W. Wingfield, Schlatter,

Miss., and William A. Latta, Rooms 22-29, Wyandotte National Bank building, Kansas City, Kas.

KNIGHTS AND LADIES OF THE FIRESIDE.—During the year 1893 there was organized a fraternal life insurance company known as the Knights and Ladies of the Fireside, a secret order of which the social and insurance features were especially popular, owing to the small cost of safely carrying life insurance at a moderate rate. Recently the order has been greatly strengthened by selecting for its chief officers men of well-known experience in public affairs, as well as having a successful career in insurance business. The President is Ellsworth Magee, a man who has had twenty-two years successful experience with old line insurance, and has given up his position as State Manager of the Kansas Mutual Life Association, on account of being called to the Presidency of this order. W. H. Dake, of Kansas City, is chairman of the Executive committee. The Treasurer is Hon. William Higgins, ex-Secretary of State of Kansas, and the Secretary is Hon. S. H. Snider, ex-State Superintendent of Insurance of Kansas. Organization is now being thoroughly pushed throughout the West. The society has also, in addition to life insurance, added a popular policy of accident insurance. For full particulars regarding this society and its fraternal life and accident insurance, address the Secretary, Hon. S. H. Snider, New York Life building, Kansas City, Mo.

Cheese-Making Apparatus.

This illustration shows very nicely the new improved Cheese-Making Apparatus of McK. Wilson & Co., of St. Louis. Its simplicity, durability, saving of time, ease of operating, thorough work, and reasonable price commend it as an adjunct in every well-regulated dairy. It is said to be so simple to operate that any boy or girl of average intelligence can learn the



process in a few operations. The process is as simple as making butter. It makes a perfect cheese each time.

The milk is heated by a coal oil lamp, which is easily kept under control. The heating vat is so constructed that the lamp gives all the heat that is necessary. The management of the heat is the secret of success in making good cheese. The entire apparatus is so light in weight that a lady can move it from one place to another with ease. It does not take up quite as much room as an ordinary kitchen table. A lady can make cheese in the kitchen or pantry, and carry on her household work at the same time. With each Apparatus is sent simple and full instructions how to make cheese successfully.

Each Apparatus is complete with heating vat, press, curd knife, lamp and thermometer, so there is not anything additional to buy for cheese-making.

The manufacturers guarantee the Apparatus to do the work exactly as represented. Write to them if you are interested.

The Huber at the World's Fair.

In this issue we have illustrated the New Huber engine, "The prize-winner at the World's Fair."

The four tests were, economy of fuel, speed with light load, speed with heavy load and trial run through deep sand. The contest was open to the world. The New Huber not only came out ahead in each of the four tests, but so far ahead of all competitors, that it was a most glorious victory for the special features of the Huber, now so favorably known to all. It was fully demonstrated to the world that the Huber patent return-flue boiler is the most economical construction of boilers for portable engines. The Huber's saving in coal over its nearest competitor was 20 per cent., and 40 per cent. over the average of all competitors, while the saving in water was the same per cent.

Farmers and threshermen, consider the meaning of 20 to 40 per cent. investment and you will appreciate what this saving amounts to. This great saving, considered in connection with the absolute safety and

CHICAGO VETERINARY COLLEGE.

FOUNDED 1883.

The most successful college on this continent. For full particulars address the Secretary, J. H. HUGHES, M. R. C. V. S., 2537-2539 State St., Chicago, Ill.

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, \$5.00. Write to-day. Send for it. It's free. Alliance Carriage Co., Cincinnati, Ohio.

Sunny Southland Free

tural, mineral and timber lands ever controlled by one company. Send us your address, and we will mail you copies of our Piedmont region and property list, giving valuable information to those coming South. Farms of all sizes and improved plantations, up to 30,000 acres, at very low prices and on easy terms. We can suit colonies of any size and give them what they want, as our work is general and not confined to one section. Correspondence from members G. A. R. solicited. When you come to Atlanta make our office your home. J. H. MOUNTAIN, Manager, Atlanta, Georgia.

GROUND MOLES

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



Instantly and positively prevents flies, gnats and insects of every description from annoying horses and cattle. It improves the appearance of the coat, dispensing with fly-nets. Applied to cows it will give them perfect rest, thereby increasing the quantity of milk. It is also a positive insecticide for plants. We guarantee it pure, harmless and effective. Recommended by thousands using it. One gallon lasts four head an entire season. Price, including brush, quart cans, \$1.00; half-gallon, \$1.75, and one gallon, \$2.50. Beware of imitations. Made only by The Crescent Manufacturing Co., 2109 Indiana Avenue, Philadelphia.

LIVE STOCK AUCTIONEERS.

F. M. WOODS,
Live Stock Auctioneer, Lincoln, Neb.
Refer to the best breeders in the West, for whom I do business. Prices reasonable and correspondence solicited.

JAS. W. SPARKS,
Live Stock Auctioneer, Marshall, Mo.
Sales made everywhere. Reference to the best breeders in the West, for whom I have made sales. Catalogues compiled and printed. Terms reasonable.

ELI ZIMMERMAN, Hiawatha, Kansas,
Live Stock and General Auctioneer.
Pedigreed and registered live stock a specialty. Write for dates. Sales conducted anywhere in the country. Best of references and satisfaction guaranteed.

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

THE STRAY LIST.

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 Kapp, 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 29, 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 \$20.

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, blaze 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 Leher, 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.

FOR WEEK ENDING JUNE 5, 1895.

Montgomery county—Jno. W. Glass, clerk.

HORSE—Taken up by F. W. Spencer, in Caney tp., May 13, 1895, one roan horse, branded W. on left shoulder.

HORSE—By same, one iron-gray horse, branded S. on left shoulder.

MARE—Taken up by G. L. Carringer, in Caney tp., May 10, 1895, one black mare, fifteen and a half hands high, silt in right ear.

HORSE—By same, one bay horse, fourteen hands high, branded H. on right shoulder.

COLT—Taken up by W. N. Adams, in Fawn Creek tp., one black two-year-old horse colt, branded P. on left shoulder, silt in left ear and string tied around tail.

COLT—By same, one dark roan colt, some white on hind foot.

COLT—Taken up by Chas. W. Wheeler, in Fawn Creek tp., one two or three-year-old strawberry-roan mare colt.

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 \$28, 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 36
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, 426 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.

INFORMATION WANTED.—Do you know anything about Howsley's Spaying Mixture? Is it sure as stated? Is it humane? A. C.

Roscoe, Mo.

Answer.—I have never given Howsley's Spaying Mixture a trial, so cannot answer your questions.

SEXUAL APATHY.—I have a two-year-old Hereford bull that has been stabled and fed on hay and grain for two months. He is in good condition but will not serve a cow. What can I do with him? W. N. A.

Greeley, Kas.

Answer.—Your bull may be too fat from high feeding without exercise. Turn him out in the field with the cows and he may soon get all right. Drugs are not generally successful in such cases; however, you might try the following dose twice a day for a week: Fluid extract damiana, 2 drachms; fluid extract nux vomica, 1 drachm; mix and give either in drench or on feed. Nature generally does all that can be done in such cases, and when a bull is in good health and still does not give satisfaction the best plan is to convert him into beef.

WIND PUFFS—MULE.—(1) I have a yearling colt that has got wind puffs on his hock joints since I turned him out, two months ago. (2) I have a mule, 2 years old, that jerks its hind legs up and swings them out sideways for a few steps, then goes all right. It has been this way since 6 months old. Stafford, Kas. E. A. B.

Answer.—(1) If you apply a cantharidine blister to the puffs it will check their growth and they may disappear in time. (2) I cannot understand from your description whether the mule is affected with so-called "stringhalt," or whether there is a weakness of the ligaments of the patella. If it is the former nothing can be done. If it is the latter the stifles appear stiff at the start and then move off with a jerk. In this case the following liniment applied twice a day till the skin is sore will benefit them: Sweet oil, 2 ounces; turpentine, 2 ounces; aqua ammonia, 2 ounces; mix. Repeat every two weeks till the parts are strong.

Ship Sheep Shearings.

Mary had a little lamb,
How fast its wool did grow;
In spring she sold its fluffy fleece
To Summers, Morrison & Co.

A farmer, when he heard of it,
Said, "By Jacks, b'lieve I'll try 'em;"
And when he counted out his cash,
Said, "You bet, I'll stand by 'em."

He straightway told his neighbor Jones
About his lucky hit.
When Jones had heard him through, he said,
"Sam Brown, I'll never quit."

"Till all this whole blamed naberhood
Has heard that from my lips;
An' every farmer here around
Turns in right off and ships

"His own blame wool to that air firm
That treats us all so fair;
That gits us every cent they kin,
An' settles on the square."

So here and there among his friends
This honest farmer went;
And those he couldn't see himself
One of his boys he sent.

Miss Smith went out and told Miss Ayers,
Miss Flynn told Mr. Burch,
Miss Marks already knew it for
She'd heard it down at church.

'Twas all the talk the whole week through
In every set and faction,
They were not making any noise,
But they were taking action.

On Saturday they came to town,
As if there were a show;
That day a car of wool went out
To Summers, Morrison & Co.,
174 South Water street, Chicago.
All rights reserved.

"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.

We can furnish you KANSAS FARMER and Peterson's Magazine, each one year, for \$1.75. Or KANSAS FARMER and Arthur's Home Magazine for \$1.65. Send to this office amounts above named.

Vacuum Leather Oil

May as well know it. Get a can at a harness- or shoe-store, 25c a half-pint to \$1.25 a gallon; book "How to Take Care of Leather," and swob, both free; use enough to find out; if you don't like it, take the can back and get the whole of your money.

Sold only in cans, to make sure of fair dealing everywhere—handy cans. Best oil for farm machinery also. If you can't find it, write to VACUUM OIL COMPANY, Rochester, N. Y.

How's This!

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

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

West & Truax, Wholesale Druggists, Toledo, O. W. A. L. DING, KINNAN & MARVIN, Wholesale Druggists, Toledo, O.

Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price, 75 cents per bottle. Sold by all Druggists. Testimonials free.

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 charge.

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

MARKET REPORTS.

Kansas City Live Stock.

KANSAS CITY, June 3.—Cattle—Receipts since Saturday, 2,583; calves, 181; shipped Saturday, 1,426 cattle, 87 calves. Best steers were steady to strong, medium grades slow and barely steady, common stock lower. Texans steady to a dime higher. The following are representative sales:

DRESSED BEEF AND SHIPPING STEERS.					
56.....	1,310	\$5.35	44.....	1,317	\$5.05
19.....	958	5.00	17.....	1,214	5.00
23.....	1,205	4.95	88.....	1,215	4.60
1.....	1,000	4.50	7.....	1,027	3.80
1.....	9.0	3.75	25.....	968	3.35
1.....	1,110	3.00			

TEXAS AND INDIAN STEERS.					
23.....	1,193	\$4.25	22.....	1,155	\$1.10
73.....	1,091	4.10	61 I.....	1,181	4.00
8 I.....	1,083	4.00	24.....	1,011	3.90
49.....	1,012	3.80	21.....	1,019	3.60

WESTERN STEERS.					
34.....	973	\$3.90	2.....	735	\$3.00
OKLAHOMA STEERS.					

OKLAHOMA STEERS.			
27.....	1,022	\$3.90	

TEXAS AND INDIAN COWS.					
10.....	1,012	\$3.25	8 I.....	762	\$3.15

10.....	1,012	\$3.25	8 I.....	762	\$3.15
17 I.....	807	3.15	26.....	605	2.50
2.....	870	2.50	2.....	855	1.75

2.....	870	2.50	2.....	855	1.75
COWS AND HEIFERS.					

COWS AND HEIFERS					
2 mix....	900	\$4.25	29.....	751	\$4.00
2.....	1,180	4.00	3.....	623	3.95

2.....	1,180	4.00	3.....	625	3.55
1.....	1,170	3.85	1.....	1,160	3.75
31.....	779	3.75	3.....	746	3.60

Horses—Receipts since Saturday, 10; shipped Saturday, 24. There was little business this morning. A good many onlookers were at the barns and some of the buyers who went away last week have returned and have a few orders to fill. The receipts are falling off daily compared with those of a year ago.			
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St. Louis Live Stock.

ST. LOUIS, June 3.—Cattle—Receipts, 4,070; shipments, 600; market steady for good cattle, but poor stuff sold 10 to 15c lower; native shipping and beef steers range \$4.50 to \$5.50; light to good butcher grades, \$3.25 to \$4.50; stockers and feeders, \$2.50 to \$4.00; cows, \$2.50 to \$3.50; some

heifers of 1,300 to 1,400 pounds brought \$5.00; fed Texas steers, \$3.75 to \$4.75; grass steers, \$2.80 to \$3.85; cows, \$2.00 to \$3.25. Hogs—Receipts, 3,700; shipments, 1,400; market steady on tops; but 5 to 10c off for poor grades; top price, \$4.75; bulk of sales, \$1.40 to \$4.50; light, \$3.75 to \$4.40. Sheep—Receipts, 1,700; shipments, 2,200; market steady on good grades, but poor stuff hard to sell; natives sold at \$3.00 to \$4.00; south-west, \$2.50 to \$3.65; lambs, \$3.50 to \$4.75.

Chicago Live Stock.

CHICAGO, June 3.—Hogs—Receipts, 38,070; official Saturday, 18,760; shipments, 2,450; left over, 1,000; market active, steady to 5c higher; light, \$4.25 to \$4.55; mixed, \$4.40 to \$4.70; heavy, \$4.35 to \$4.75; rough, \$4.35 to \$4.50.

Cattle—Receipts, 12,000, including 2,500 Texans; official Saturday, 172; shipments, 400; best, steady, others weaker.

Sheep—Receipts, 8,000; official Saturday, 2,435; shipments, 400; market strong to 10c higher.

Chicago Grain and Provisions.

	June 3.	Opened	High'st	Low'st	Closing
Wht.—June....	77½	77½	77½	77½	77½
July.....	79	79	79	79	79
Sept.....	80	80	80	80	80
Corn—June....	51½	52½	52½	50½	51½
July.....	52½	53½	53½	51½	52½
Sept.....	53½	54½	54½	52½	53½
Oats—June....	29½	29½	29½	29½	29½
July.....	30½	30½	30½	29½	30½
Sept.....	30½	30½	30½	29½	30½
Pork—June....	12 50	12 50	12 50	12 50	12 50
July.....	12 52½	12 60	12 42½	12 61	
Sept.....	12 52½	12 67½	12 70	12 87½	
Lard—June....	6 57½	6 57½	6 57½	6 57½	6 57½
July.....	6 70	6 70	6 65	6 67½	
Sept.....	6 87½	6 90	6 82½	6 87½	
Ribs—June....	6 21	6 23	6 25	6 25	
July.....	6 32½	6 35	6 30	6 32½	
Sept.....	6 52½	6 52½	6 47½	6 52½	

Kansas City Grain.

KANSAS CITY, June 3.—There was very little demand for wheat this morning and few samples were on sale. Prices were nominally a cent lower than Saturday. Very little wheat could be bought in the country. Elevator men were offering red wheat at 84½c for a time.

Receipts of wheat to-day, 15 cars; a year ago, 26 cars.

Sales of car lots by sample on track, Kansas City: No. 2 hard wheat, 1 car 80½c; later 79c was bid; No. 3 hard, nominally, 78c; No. 4 hard, nominally, 77c; No. 2 red, 2,000 bu. 81c early; No. 3 red, nominally, 82c; No. 4 red, 1 car good 81c; rejected, nominally, 78½c.

The corn market was badly demoralized. The rains in the west made buyers indifferent and led to considerable offering from the country. A good many samples were on the floor and they were held 1 to 2c above bids. A few cars sold on orders, but most of the samples were carried away unsold. Prices were 1 to 2c lower.

Receipts of corn to-day, 19 cars; a year ago, 20 cars.

Sales by sample on track, Kansas City: No. 2 mixed corn, 4 cars 46c; No. 3 mixed, nominally, 45c; No. 4 mixed, nominally, 44½c; No. 2 white, 4 cars 49c; No. 3 white, nominally, 48c. Oats sold slowly. Prices were slightly lower.

Sales by sample on track, Kansas City: No. 2 mixed oats, 4 cars 28½c; No. 3 oats, nominally, 27½c; No. 4, nominally, 27c; No. 2 white oats, nominally, 31c; No. 3 white oats, nominally, 30c.

Hay—Receipts, 22 cars; market steady; timothy, choice, \$9.00; No. 1, \$8.00 to \$8.50; No. 2, \$7.00 to \$7.50; fancy prairie, \$8.00 to \$8.50; choice, \$7.00 to \$7.50; No. 1, \$6.00 to \$6.50; No. 2, \$4.50 to \$5.50; packing hay, \$3.00 to \$3.50.

Kansas City Produce.

KANSAS CITY, June 3.—Eggs—Receipts light; 9½c for candled stock.

Poultry—Receipts, light; market steady. Geese are not wanted. Hens, 6½c; springs, 18 to 20c a pound; "peepers" not wanted; roosters, 15c. Turkeys sell slowly; gobblers, 6c; hens, 7c. Ducks, 5½c to 6½c. Geese, dull and not wanted; alive, 3½c to 4c. Pigeons, firm; \$1.00 per doz.

Butter—The feeling is weaker, with a good supply on hand. Dairy butter is weaker, while packing stock is firming up a little; extra fancy separator, 15c; fair, 12 to 13c; dairy fancy, 11c; fair, 8 to 10c; store packed, best, 10c; fair, sweet packed, 8c; packing, old, 4 to 5c; stale butter finds no sale.

Strawberries—The supply this morning was entirely home grown. There was only a limited number on sale. Missouri, Kansas and home grown, choice to fancy, \$1.75 to \$2.25; common stock, \$1.00 to \$1.25; hold-over stock, from 50c up, according to quality.

Fruit—Apples, supply moderate; market steady on good apples; best fancy stand, \$5.00 to \$7.00; common to choice varieties, \$2.00 to \$4.00. California cherries, choice, slow, 50c to \$1.50 per box; Arkansas and home-grown, \$1.00 to \$1.50 per crate. Gooseberries, \$1.50 per crate. Texas plums, \$1.00 per crate.

Vegetables—Potatoes, market steady on new and strong on old stock; new, \$3.00 to \$3.25 per bbl.; 90c to 1.00 per bu.; Colorado, market firm, 70 to 75c per bu.; good to choice, 65 to 70c; common to good, 50 to 60c. Sweet potatoes, slow; red and yellow, 25 to 30c per bu.

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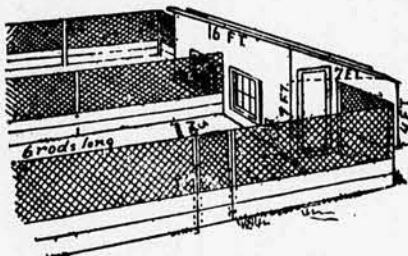
The Poultry Yard.

POULTRY HOUSE PLAN.

Beginners Can Gain Much Valuable Advice from This Article.

Any of your readers who may be intending to embark in the poultry business this spring or those who contemplate building new houses and yards may perhaps be interested in the following description of my poultry house:

My runs are large enough to accommodate from twenty to thirty hens. In building a house first select as high a location as you can get with sufficient room for yards on south side of house. Have if possible a south slope to the ground. If a good blue-grass sod can be had to build a yard on it is better. The house is 7x16 feet and 7 feet high at front side and 4 feet at back with shed roof, and can be built of 2x4's for frame, covered with common rough or (if you desire to paint) dressed boards and battered on the outside with planed or rough patterns. Shingles are best to use for roof, as tarred paper will blow off and does not make a lasting roof. To make it warm the house should be lined inside with tarred paper and should have at least



POULTRY HOUSE AND YARDS.

two 9x13 six-light windows in south side near center of building. A half dozen flat stones can be used for foundation set just even with surface so as to allow sills just to clear the ground. For floor use gravel or cinders to the depth of 6 inches so as to keep out all surface water in winter and early spring. Cover gravel or cinders with sand so as to make a good smooth surface.

The roosts should be built on the north side of inch boards cut into 4-inch strips, and should have the edges mude rounding and set flat side down in notches cut in brackets extending from back side of coop. The perches are 2½ feet above floor, and under them is suspended a platform to receive the droppings, which can be easily cleaned every morning or twice a week. The floor of this house can be kept clean by using a common garden rake and raking up all the droppings that may be scattered during the day. Chickens kept in this kind of a house will not freeze their combs in the severest weather, and with proper feed will lay eggs all winter.

The material for this house complete costs (exclusive of floor and paint) about \$12.

To build the yards connected with the house set posts 12 feet apart and board up 2 feet from the ground with common rough 12-inch boards; then above that use 2-inch mesh poultry netting 36 inches wide. This makes a fence 5 feet high and no fowl, except some of the small breeds, will ever fly over it. The boards at the bottom are to keep the cocks from fighting through the fence. If desired this house can be used for breeding fowls to accommodate two yards of twelve fowls each by running a partition through the center and having each yard connect with one end of the house. The yards should be 3 rods wide and 6 rods long, built the longest way north and south, with north end connecting with house. If a large number of fowls are to be kept, a number of these houses can be built along in a row, all facing the south, far enough apart to admit of the runs or yards being built three rods wide. In this case a tight fence can be built between the houses on the north side to keep the cold wind from the fowls.—J. G. Brookings, in Breeders' Gazette.

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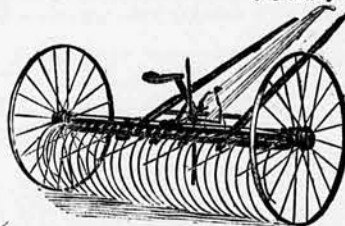
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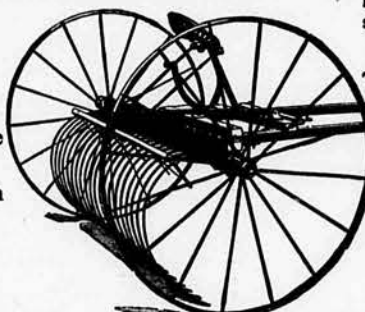
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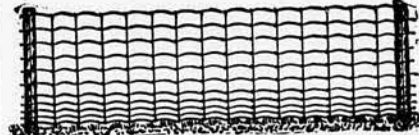
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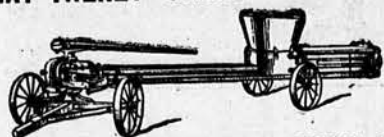
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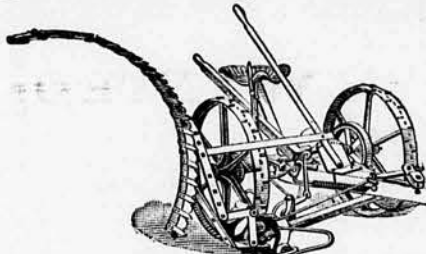
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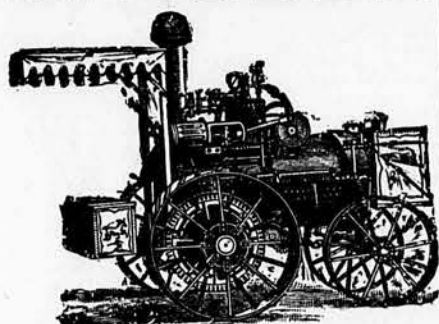
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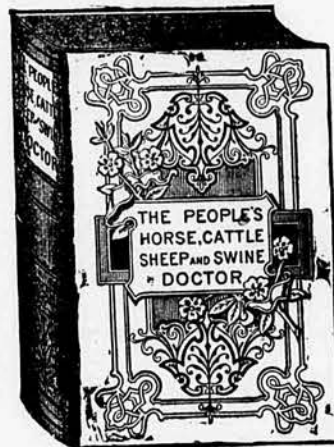
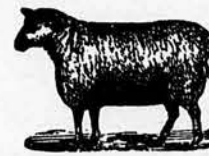
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(Continued from page 1.)

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TWO-CENT COLUMN.

"For Sale," "Wanted," "For Exchange," and small
advertisements for short time, will be charged two cents
per word for each insertion. Initials or a number
counted as one word. Cash with the order.
Special:—All orders received for this column from
subscribers, for a limited time, will be accepted at one-
half the above rates, cash with order. It will pay. Try it!

FOR A GOOD HAND-SEWED BUCK, CALFOR
F. kid glove or mitten, address Mrs. Ed. Warner,
Lexington, Clark Co., Kas. Reference: KANSAS
FARMER.

HAY, GRAIN, POTATOES.—Consignments solic-
ited. Vining & Snyder, 1130 12th St., Kansas City,
Mo. Reference: Metropolitan National Bank.

PET RABBITS—BLACK AND WHITE.—Fifty
cents per pair. Can be sent by express to any
point in Kansas or other State. Address Lucile
McAfee, 314 West Fifth St., Topeka, Kas.

WANTED—A second-hand well drill or boring
outfit. Must be cheap. Address, with full par-
ticulars, H. B. Waldron, Cameron, Harper Co., Kas.

HOLSTEIN BULL.—Three years old, of extra
quality and breeding, for sale for much less
than he is worth. H. B. Cowles, Topeka, Kas.

FOR SALE—In Holton, Kansas, a nice residence
property, with a good greenhouse attached; a
good opportunity for a practical florist to secure a
good home and business in this fine town at much
less than real value. Price \$1,200. Terms to suit
purchaser. T. E. Bowman & Co., Topeka, Kas.

I HAVE FOR SALE—A carload of choice high-
grade Holstein-Friesian cows. Write for prices
and terms. M. S. Babcock, Nortonville, Jefferson
Co., Kas.

ADDRESS JOHN WISWELL, COLUMBUS, KAS.,
for descriptive circular of his fine-bred, regis-
tered Scotch Collie dogs. Pups for sale.

500,000 SWEET POTATO PLANTS—For sale
during the months of May and June.
Ten best kinds at very low rates. N. H. Pixley,
Wamago, Kas.

REDUCED PRICES—PRIZE-WINNING POUL-
TRY.—M. B. Turkey eggs from World's Fair
and Missouri State poultry show prize-winners, \$3
per twelve. Light Brahma eggs from selected birds
in flock of two hundred and fifty, \$2 per fifteen.
Choice selected Barred Plymouth Rocks, eggs \$1.50
per fifteen. Address Mrs. Thomas W. Ragsdale,
Paris, Monroe Co., Mo.

FOR ALFALFA SEED, DIRECT FROM THE
grower, address E. G. Jones, Syracuse, Kas.

BERKEEN-ANGUS BULLS—Sired by the \$850
Erica Boy and out of imported cows. Two and
three-year-olds. Individually very choice. Wm. B.
Rutton & Son, Russell, Kas.

FOR SALE—Hereford bulls sired by a son of Mr
Funkhouser's celebrated Hesiod. Apply to
Peter Sim, Wakarusa, Kas.

SUB-IRRIGATION PIPE.—Do not be disappointed
for not ordering 100 feet of 3/4-inch galvanized
sheet-iron pipe. Cost, \$1.25. Address Alex Richter,
Hollywood, Kas.

WANTED—Sale bills, horse bills, catalogues and
other printing. A specialty at the Mail Job
printing rooms, 900 North Kansas Ave., North Topeka.

LIGHT BRAHMAS AND S. L. WYANDOTTES.—
Eggs from pure Felch strain Light Brahmas and
selected S. L. Wyandottes at \$1 per fifteen or \$1.75
per thirty. Wm. Plummer, Osage City, Kas.

THE FINEST HONEY—Is gathered from alfalfa
and clover blossoms. You can buy it of the
bee-keeper, cheap and in any quantity, by freight,
and know it is genuine. Address Oliver Foster, Las
Animas, Colo.

BERKSHIRE SOWS—Safe in pig to imported
Lord Comely. Individually and breeding the
best. Wm. B. Sutton & Son, Russell, Kas.

FOR SALE—The tried and grand breeding boar,
Kansas King 8911 S., sired by Dandy Jim 5442 S.
and out of Broadback (11913). Weighs 700 pounds.
He is a desirably-bred hog, extra good in conforma-
tion, having broad back and extra good ham. Sunny
Slope Farm, Emporia, Kas.

VALLEY FALLS POULTRY YARD—Light Brah-
mas, Buff Cochins, Partridge Cochins, Black
Langshans, White and Barred Plymouth Rocks, S.
and R. C. Brown Leghorns, White and Black Mi-
norcas, Silver-spangled Hamburgs. Choice birds,
\$1 each. Eggs, \$1 per fifteen. W. B. McCoy, Valley
Falls, Kas.

THREE HOLSTEIN BULLS—A two-year-old, a
yearling and one 6 months old. Registered and
belong to the Korndyke family. For further par-
ticulars write H. L. Liebfried, Emporia, Kas.

WE MAKE A GOOD FARMER'S SPRING WAG-
on, two lazy backs and let-down end-gate, for
\$55. Warranted. Kinley & Lannan, 424-426 Jackson
street, Topeka.

IRRIGATION PUMPS.—For prices of irrigation
pumps used by the editor of KANSAS FARMER
write to Prescott & Co., Topeka, Kas.

40 POLAND-CHINA PALS OF 1894 PIGS—Both
sexes, for sale, sired by Riley Medium 12300
and Tecumseh J. Corwin 10744. Cannot well use the
latter boar longer, hence will sell him. B. T. Warner,
Princeton, Franklin Co., Kas.

WANTED—Buyers for Large English Berkshires.
One hundred pure-bred pigs, farrowed in March
and April, are offered for sale at from \$10 to \$15
each. Farm two miles west of city. Riverside
Stock Farm, North Topeka, Kas.

250 Farms for Sale—On eastern shore of Mary-
land and Virginia. Climate mild. Land cheap
and productive. Send stamp for descriptive price
list and map of peninsula. F. H. Dryden, Pocomoke
City, Maryland.

MAN AND TEAM WANTED.—A faithful, trust-
worthy man, who is able and willing to work
and who can furnish a good team, mules preferred,
is wanted to work by the month on a fruit farm in
south Missouri. The job is permanent for the right
party. Testimonials as to character required. Ad-
dress letter, giving experience and personal details,
with lowest wages accepted, to "Fruit Farm," care
of KANSAS FARMER, Topeka, Kas.

SAVE \$50 A COMBINED HAY LOADER
and STACKER, retail price
\$65, furnished direct for \$15,
freight paid, for next thirty days, and it's the best
made, too. Write for circular.

M. P. GATES, Box 568, Kansas City, Mo.

Farmers, Spray Your Sows

Mares, Cows and Gilt Dogs with Howsley's Spaying
Mixtures. No knife, no deaths. Easy to use and
absolutely sure. Price, large bottle with syringe,
\$3; small bottle \$1, syringe 25 cents extra. Large
bottle sprays thirty to fifty head of sows. Write
for testimonials and particulars. Corresponding
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THE HOWSLEY SPAYING CO. L.T'D.,
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WANTED
MILLET SEEDS J. G. Peppard
AND CANE 1400-2 Union Avenue,
KANSAS CITY, MO.

KANSAS SEED HOUSE.

EVERYTHING IN THE SEED LINE.

Our Specialties: Seed Corn, Tree Seeds, Onion Seeds and Sets, Alfalfa, Sacaline, Lathyrus Silves-
tris, Sandvetches, Spurry, Knurr and Jerusalem Corn, and other new forage plants for dry and arid coun-
tries. NEW CATALOGUE MAILED FREE ON APPLICATION.

F. BARTEDES & CO., Lawrence, Kas.

Catalogues of Cherry Orchard Poland-Chinas

Will be ready for free distribution about June 1, that will show the breeding of about 120 spring pigs
sired by the two highly-bred boars, Corwin Whiteface 9924 and Wren's Medium 12387, and
out of as fine a lot of matured sows as can be found in any herd, East or West, and will be priced as low
as their breeding and quality will allow. Correspondence and inspection invited.

W. H. WREN, Marion, Marion Co., Kansas.

THE UNION STOCK YARDS, CHICAGO.

(Consolidated in 1865.) The largest live stock market in the world. The center of the business
system from which the food products and manufactures of every department of the live stock industry
is distributed.

Accommodating capacity: 50,000 cattle, 200,000 hogs, 30,000 sheep, 5,000 horses.
The entire railway system of Middle and Western America center here, rendering the Union Stock
Yards the most accessible point in the country. The capacity of the yards, the facilities for unloading,
feeding and reshipping are unlimited. Packing houses located here, together with a large bank capital
and some one hundred different commission firms, who have had years of experience in the business
also an army of Eastern buyers, insures this to be the best market in the whole country. This is
strictly a cash market. Each shipper or owner is furnished with a separate yard or pen for the
safe keeping, feeding and watering of his stock, with but one charge of yardage during the entire time
his stock remains on the market. Buyers from all parts of the country are continually in this market
for the purchase of stock cattle, stock hogs and sheep. Shipper should ask commission firms for direct in-
formation concerning Chicago markets.

The Greatest Horse Market in America, the Dexter Park Horse Exchange.

N. THAYER, JOHN B. SHERMAN, J. C. DENISON,
President. Vice President and Gen. Manager. Secretary and Treasurer.

WALTER DOUGHTY, JAS. H. ASHBY, D. G. GRAY,
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The Kansas City Stock Yards

are the most complete and commodious in the West,

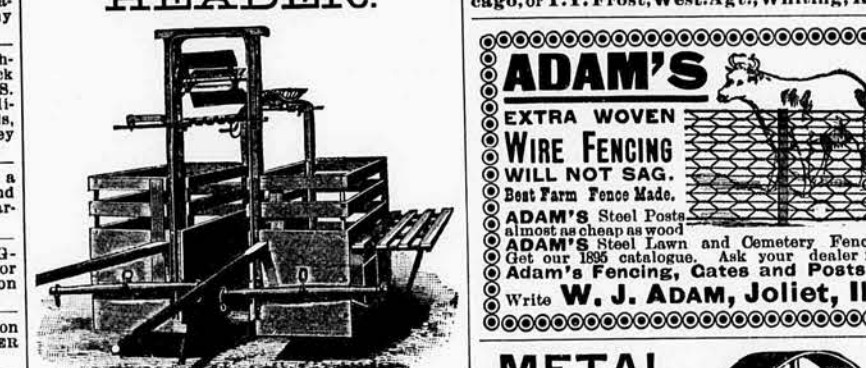
and second largest in the world! The entire railroad system of the West and South-
west centering at Kansas City has direct rail connection with these yards, with ample
facilities for receiving and reshipping stock.

	Cattle and calves.	Hogs.	Sheep.	Horses and mules.	Cars.
Official Receipts, 1894.....	1,772,545	2,547,077	589,555	44,237	107,494
Slaughtered in Kansas City.....	859,646	2,550,734	387,670		
Sold to feeders.....	308,181	11,496	69,816		
Sold to shippers.....	409,965	468,616	45,730		
Total sold in Kansas City, 1894.....	1,677,792	2,530,896	503,116	28,903	

CHARGES: YARDAGE, Cattle, 25 cents per head; Hogs, 8 cents per head; Sheep, 5
cents per head. HAY, \$1 per 100 lbs.; BRAN, \$1 per 100 lbs.; CORN, \$1 per bushel.

NO YARDAGE CHARGED UNLESS THE STOCK IS SOLD OR WEIGHED.

C. F. MORSE, E. E. RICHARDSON, H. P. CHILD, EUGENE RUST,
General Manager. Secretary and Treasurer. Assistant Gen. Manager. Gen. Superintendent.

EUREKA
Kaffir Corn and Sorghum
HEADER.

Manufactured by
R. B. FRANKLIN, Fort Madison, Iowa.

PILES and CONSTIPATION

CURED in one to ten days. The
only remedy sold that will absolutely cure so they
will not return. 873,486 bottles sold in 1894. This
preparation is used by eighty-four of the most
prominent people in the world. If you are a suf-
ferer, write us and we will send you a one-dollar
Bottle FREE also express paid.
This is no fake. We mean just
what we say. 277 This offer
is good for two weeks only.

W. W. GAVITT & CO., Bankers and Mfrs.,
Gavitt's Block, 1/2 blk. east Postoffice, Topeka, Kas.

Write for Information of the
Sunny Grand Valley of Colorado

The Home of the Peach and other Delicious
Fruits. The land of perpetual sunshine, where
there are neither blizzards, cyclones, nor malaria;
where the fruit crop never fails, and the farmers
are prosperous and happy.

THE WESTERN LAND & ORCHARD CO.
723 17th Street, Denver, Colo.

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,
832 Austin Av. Chicago

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NO MORE FLIES
The New Discovery
FLEOGON OIL

No Nets nor Blankets
for horses. One package lasts team a season. Cows
25 per cent. more milk, better flesh, less feed. Easily
applied. Good for hair and skin. All who handle
stock find it unequalled. After first application,
twice a week or less. Ask us questions or send \$1.
trial package express paid. Fleogon Oil Co., Chi-
cago, or T. Y. Frost, West. Agt., Whiting, Kas.

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EXTRA WOVEN
WIRE FENCING
WILL NOT SAG.

Best Farm Fence Made.
ADAM'S Steel Posts
almost as cheap as wood.

ADAM'S Steel Lawn and Cemetery Fences.
Get our 1895 catalogue. Ask your dealer for
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