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BREEDERS' DIRECTORY.

Cards of four lines or less will be inserted in the Breeders' Directory for \$15 per year or \$3.00 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.

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Write for prices of finest animals in Kansas. H. W. McAfee, Topeka, Kas.

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From this herd were furnished some of the winners at the World's Fair. Write for catalogue. M. E. MOORE, CAMERON, MO.

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Imported and prize-winning American sows headed by Imp. Western Prince 3202. 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. Some fine young boars fit for service for sale. Correspondence invited.

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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 Imitation 27185 O., also a son of Tecumseh Jr. 10207 O. 220 head in herd. Young boars and gilts yet on farm. Write or come and visit me.

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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.

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CHESTER WHITES AND POLAND-CHINAS. Light Brahma cockerels, \$1.50.

PLEASANT VIEW STOCK FARM.
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REGISTERED POLAND-CHINA SWINE
Short-horn Cattle and Light Brahmas. 100 P. and, headed by Anxiety 20251 A. Combination U. S. (Vol. 9), America's Equus 12279 S. and a son of Bolivar 24767. Eggs in season, \$1.50 per setting of 15. Inspection and correspondence invited.

W. S. ATTEBURY, Rossville, Kansas.
BREEDER OF Chester Whites
Exclusively.
Young stock at all times. Satisfaction guaranteed.

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300 head, registered or eligible. Boars in service. Modest Duke 12653 S., Wilk's Tecumseh 11760 A., White Face 12081 O. and Osgood Dandy Wilkes 12709 S. 60 young boars; 80 gilts.
J. R. CAMPBELL & SON, Avilla, Jasper Co., Mo.

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Home of the Chester White Hogs.
C. J. HUGGINS, Louisville and Wamego, Kansas.

ELM BEACH STOCK FARM
IRWIN & DUNCAN, Wichita, - Kansas, Sedgwick Co.
Breed and have for sale Bates and Bates-topped Short-horns—Waterloo, Kirklevington and other fashionable families. Also breed and have for sale the best thoroughbred Poland-Chinas that can be obtained. Write or come and see.

R. S. COOK, Wichita, Kas.,
Breeder of Poland - Chinas.
Won seven prizes at World's Fair—more than any single breeder west of Ohio.
(Breeders' Directory continued on page 16.)

CATTLE.

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

Breeder of PURE-BRED HEREFORD CATTLE. Herd headed by Wild Tom 51592, a son of Bean Real 11055 and assisted by sons of Cherry Boy 26475, Archibald 1st 32258 and Washington 22615. 200 head, all ages, in herd. Strong in the blood of Lord Wilton, Anxiety and Horace. A choice lot of young bulls and heifers, fit for any company. Correspondence solicited, or, better still, a personal inspection invited.

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Breeds and has for sale Bates and Bates-topped SHORT-HORNS. Waterloo, Kirklevington, Filbert, Cragg, Princess, Gwynne, Lady Jane and other fashionable families. The grand Bates bulls Waterloo Duke of Shannon Hill No. 89879 and Winsome Duke 11th 115,137 at head of herd. Choice young bulls for sale now. Visitors welcome. Address W. L. CHAFFEE, Manager.

SWINE.

"Wildwood" Herd Poland-Chinas.

For Sale Now! My two breeding boars, George Free Trade 21053A., by Free Trade 4420 S.; also Gen. Wilkes 1513, grandson of George Wilkes 5950 S. Both boars are 2 years old and good individuals. Can use them no longer.
L. N. KENNEDY, Nevada, Mo.

GLOVER LAWN HERD POLAND-CHINAS.
Young sows and boars and spring pigs for sale. Prices reasonable. Stock first-class.
W. N. D. BIRD, Emporia, Kas.

BROWN COUNTY HERD, PEDIGREED POLAND-CHINAS.
ELI ZIMMERMAN, Hiawatha, Kas.
46 brood sows in herd, headed by Black U. S. Nemo (Vol. 9), Model Wilkes (Vol. 9), Sunset Chip (Vol. 9) and Billy Bundy (Vol. 9). Female lines: All Right, Short Stop, King I. L. Wilkes, Free Trade, Wannemaker. Aged sows, bred gilts and fall pigs for sale.

P. A. PEARSON, Kinsley, Kansas,
Breeder of Poland-China Swine
All ages for sale. Herd headed by Dandy Jim Jr. and Royalty Medium, a son of Free Trade.

Evergreen Herd Poland-Chinas.
J. F. & P. C. Winterscheidt, Horton, Kas.
150 in herd. Boars in service: Admiral Chip 7919 S., George Wilkes Jr. 11893 S., Corbett 11859 S. and Winterscheidt's Victor (Vol. 9). 45 sows bred for coming pig crop. 10 young boars and 40 gilts ready to go. Write or come. Third annual sale, February 13, 1895.

J. R. KILLOUGH & SONS, Richmond, Kansas,
Breeders of POLAND-CHINA SWINE
The very best strains. Nothing but first-class stock will be shipped to any. Come and see us or write.

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 1682 S. About 100 selected individuals sold this season. 25 youngsters coming on now for choice. Write or come and visit my herd.

W. E. GRESHAM, Burrton, Kansas,
Breeder of POLAND-CHINAS.
Won six prizes, including first blue ribbon west of Mississippi at World's Fair. Stock all ages for sale.

HOLSTEIN-FRIESIANS
Careme 7d's Jacob Prince of Twisk 404 heads herd, backed with butter record of over 35 lbs. in 7 days. Young bulls for sale. Red pigs in pairs, heavy bone, good color, dams often farrowing 14 pigs. Males Duroc Jersey Reds ready for service. Poland-China males ready for use. Pigs of all ages in pairs not related. Young gilts, either bred, bred if desired. Pigs shipped at my risk. Pedigrees furnished. M. H. ALBERTY, Cherokee, Crawford Co., Kas. Mention FARMER AND POLAND-CHINAS.

The Stock Interest.

THOROUGHbred STOCK SALES.

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

- FEBRUARY 7—W. H. Wren, Marion, Poland-China swine.
- FEBRUARY 13—J. F. & P. C. Winterscheidt, Horton, and M. C. Vansell, Muscotah, Poland-China swine, combination.
- FEBRUARY 14—Dan W. Evans, Fairview, and J. A. Worley, Sabetha, Poland-China swine, combination.
- FEBRUARY 28—Jno. A. Dowell, Robinson, Poland-China swine.

HOG CHOLERA AND SWINE PLAGUE.

(Continued from last week.)

THE TREATMENT OF HOG CHOLERA AND SWINE PLAGUE.

Can hog cholera be cured, and if so, what remedy will restore the diseased animals to health? These are the first questions asked by the swine-grower, and to his mind this should be the objective point of all investigations. With all diseases of this class, however, prevention is cheaper and in every way more satisfactory than medical treatment. The great aim of the government and the farmers should be, therefore, to prevent the spread of infectious diseases. Every swine-grower should use the utmost precautions to prevent the introduction of these plagues into his herd. In spite of such preventive measures many herds will become infected. Until the federal government or the individual States enforce measures of eradication, it is, consequently, legitimate to ask and to answer the question as to the proper medical treatment.

Before formulating this treatment it should be explained that a remedy which will cure every case is not to be expected. There has never been discovered a remedy for a single one of the infectious diseases of man or animals which will cure every individual attack. Some forms of these diseases are so violent and rapid that the animals are dead almost before they are observed to be sick. Under such conditions there is not time for the most active remedy to produce a beneficial effect.

In many outbreaks the type of the malady is less virulent and there is time to treat the animals after they are sick, and also the whole herd after some members of it have shown that they are diseased. For a long time after beginning the investigations of the infectious diseases of swine, the writer was doubtful if any remedy or combination of remedies could be made which would produce any marked effect. The experiments of the last year, however, indicate that treatment if properly applied may be successful. With the assistance of Dr. E. A. de Schweinitz, Chemist of the Bureau, and Dr. V. A. Norgaard, Inspector, a number of formulas have been developed and used in the field with good results.

The most efficacious formula which has been tried is the following:

	Pounds.
Wood charcoal.....	1
Sulphur.....	1
Sodium chloride.....	2
Sodium bicarbonate.....	2
Sodium hypsulphite.....	2
Sodium sulphate.....	1
Antimony sulphide.....	1

These ingredients should be completely pulverized and thoroughly mixed.

The dose of this mixture is a large tablespoonful for each 200 pounds weight of hogs to be treated, and it should be given only once a day. When hogs are affected with these diseases they should not be fed on corn alone, but they should have at least once a day soft feed, made by mixing bran and middlings, or middlings and corn meal, or ground oats and corn, or crushed wheat with hot water, and then stirring into this the proper quantity of the medicine. Hogs are fond of this mixture, it increases their appetite, and when they once taste of food with which it has been mixed they will eat it though nothing else would tempt them.

Animals that are very sick and that will not come to the feed should be drenched with the medicine shaken up with water. Great care should be exercised in drenching hogs or they will be suffocated. Do not turn the hog on its back to drench it, but pull the cheek away from the teeth so as to form a pouch, into which the medicine

may be slowly poured. It will flow from the cheek into the mouth, and when the hog finds out what it is, it will stop squealing and swallow. In our experiments hogs which were so sick that they would eat nothing have commenced to eat very soon after getting a dose of the remedy, and have steadily improved until they appeared perfectly well.

This medicine may also be used as a preventive of these diseases, and for this purpose should be put in the feed of the whole herd. Care should, of course, be observed to see that each animal receives its proper share. In cases where it has been given a fair trial, it has apparently cured most of the animals which were sick and has stopped the progress of the disease in the herds. It also appears to be an excellent appetizer and stimulant of the processes of digestion and assimilation, and when given to unthrifty hogs it increases the appetite, causes them to take on flesh and assume a thrifty appearance.

This is a resume of the reports from the tests of this medicine during the last year, and while I should prefer, from a scientific point of view, to continue these experiments for another year before venturing to recommend it as a remedy for these diseases, the many urgent requests which have been made upon me for the formula lead me to give it in time for it to be tried by our farmers during the current year. Those who are interested in this subject are earnestly requested to try this mixture and report their results to this Bureau for the benefit of the hog-raising industry.

Success or failure with this remedy depends largely upon the manner in which it is used. If it is improperly administered, or the hogs left out in cold storms and compelled to remain day and night in mud six inches or a foot deep, under the necessity of searching through this mud to find an ear of corn in order to get anything to eat, the farmer might as well save his money and let his hogs die, as nothing which we have been able to find will save them under such conditions. If, on the other hand, the sick animals can be made reasonably comfortable, and given soft, easily digested food to eat, the medicine, of which we have just given the formula, may be used with confidence that it will give good returns for its cost and the trouble of its administration.

In treating hogs for these diseases it must not be forgotten that in nearly all cases there is more or less inflammation of the internal organs, and particularly of the stomach and intestines. To treat such diseases successfully the animals should be kept dry and comfortable, and where drafts of air will not blow upon them. The food must be such as can be digested by the irritated and inflamed organs which are charged with this function. With these general principles in mind the farmer may undertake to treat his sick hogs with a fair prospect of success. He may not save them all, but he should be able to preserve a good proportion of them.

The question now arises, What disposition should be made of the hogs during treatment, and what sanitary measures should be adopted in addition to the medical treatment? When the hogs are first found to be affected with hog cholera or swine plague the lot or pens where they have been confined should be disinfected by dusting plentifully with dry, air-slaked lime, or by sprinkling with a 5 per cent. solution of crude carbolic acid. The animals should then all be moved to new quarters. If possible, the sick and apparently well should be separated before they are moved and then put into different lots. This is not essential, but it is an aid to the treatment. The hogs should be kept in dry lots, or pens, where there is no mud, and, above all, no stagnant water. It is well to keep these lots disinfected by the free use of air-slaked lime or carbolic acid.

It is not expected by this supplementary treatment that the hogs will be entirely removed from the influence and attacks of germs. This is not necessary. The number of germs which

gain access to their bodies may be so reduced by following this plan, however, that the vital force of the system, assisted by the medicine, is sufficient to overcome them.

During this treatment the hogs gain a marked degree of immunity. No doubt this is the result of attacks of the disease from which they recover. This recovery is in spite of the continued infection of the premises, and even though the hogs which have gone through the outbreak are apparently well and thriving, new hogs added to the herd are liable to be attacked. For this reason five or six months should be allowed to pass before any new hogs are purchased and brought on the premises or before any are sold to be put among other lots of hogs. Young pigs born under such conditions in some cases are able to resist the infection, while in other cases they may suffer severely or die.

If any hogs die during the progress of the outbreak their carcasses should be immediately burned or deeply buried, and the places where they have lain or the ground over which they are dragged should be disinfected with carbolic acid or lime according to the method already mentioned.

PREVENTIVE SANITARY MEASURES.

The swine-grower should use every effort to prevent the introduction of the contagion of these diseases upon his premises. If he purchases hogs from a distance or sends his own animals for exhibition at the fairs, he should insist upon their being transported in clean cars, which have been disinfected if they have previously carried swine. When new hogs are brought upon the farm or when his own return from exhibition, they should be rigidly quarantined and not allowed to come in contact with the other hogs on the farm for at least six weeks.

Hogs should not be allowed to run at large in the vicinity of railroads over which swine are transported. Infected hogs are frequently shipped to market, and there are sufficient droppings from the cars in which they are carried to scatter the contagion along the railroad for the whole distance they travel.

When these diseases appear upon a neighboring farm precautions should be adopted to prevent the introduction of the contagion. No one should go upon the fields or into the pens where the sick animals are and then go to another farm where the disease has not appeared. Remember that a particle of manure or dirt the size of a mustard seed from an infected farm is sufficient to start an outbreak that will destroy a herd of swine. A particle of that size may be carried upon the shoes of a visitor, upon the foot of a dog or other animal, upon a wagon wheel, or in a multitude of other ways. Non-intercourse at such a time is therefore the safest rule.

Experience shows that hogs kept up in a pen or small lot are less subject to infection when cholera is in the neighborhood than those which are allowed to run at large or in the fields. It is, consequently, advisable, when there is reason to fear this disease, to keep the hogs in a small inclosure, which should be as dry as possible, and disinfected once a week with air-slaked lime or a 5 per cent. solution of carbolic acid. A small quantity of carbolic acid (3 to 15 drops, according to age) in the drinking water tends to prevent infection and may have a beneficial influence upon the course of the disease.

PREVENTION OF DISEASE BY PROPER BREEDING AND FEEDING.

There is occasionally a herd of swine that does not contract hog cholera even though exposed to the contagion. Two herds may sometimes run together and be exposed to the same extent; one will be nearly or quite destroyed, while the other does not suffer. These facts naturally lead to the inquiry as to whether it is possible to so breed and feed hogs as to largely or entirely prevent the most common diseases. To what extent disease may be prevented in this way, we are not in a position to state, as we are not familiar with enough experiments to enable us to reach a conclusion. It is clear, however, that something can be accomplished in this way, and as the carrying

out of the plan would also increase the hardiness and thriftiness of the swine it is certainly worthy of adoption.

The first principle of this method of prevention is to breed only from mature breeding stock which is only distantly or not at all related. The second principle is to select, if possible, animals for breeding stock which have shown, by having passed through an outbreak without becoming affected, that they possess a power of resisting hog cholera. The third principle is to feed the growing shoats upon a variety of food which will lead to normal and harmonious development of all the different organs. The application of these principles must be made by the individual breeder in accordance with his circumstances and surrounding conditions. The breeding from mature animals which are not closely related can be easily adopted by any one. The selection of stock which has shown that it possesses a power of resisting the disease is much more difficult, and in many cases it will be impossible for the general farmer, though there are many breeders who could experiment in this direction.

The diet of corn alone, upon which the hogs of so large a part of the country are raised, has done more than anything else to weaken the vital powers of these animals. With wheat selling in the markets of the country as low as corn, there is no longer any excuse for limiting the food of hogs to a single grain. Wheat is much better than corn for growing animals, but should be crushed or rolled to give the best results. Ground oats, middlings, bran and peas may also be used to give variety. It is hardly necessary to add that during the warm months of the year hogs should have plenty of young grass or clover.

By intelligently applying these principles in the production of the breeding stock a strain of animals may be developed which is hardy, vigorous, prolific, and much more capable of resisting disease than is the ordinary inbred and corn-fed stock which is now so generally used by the farmers of this country.

This bulletin is prepared for the practical use of the farmer; it is intended to be suggestive rather than exhaustive; it contains the important points necessary for identifying and controlling the infectious diseases of swine. If its teachings are intelligently and thoroughly followed the losses from these diseases may be greatly reduced. Experience having demonstrated that such beneficial results are possible, it has been deemed best to present this information in a condensed and popular form.

Cottonseed Meal as Feed for Stock.

EDITOR KANSAS FARMER:—In this country it is within the last six years that cottonseed meal has come into general use as a cattle food. It has been used for a much longer period in Europe, where its exceptionally high power as a feed, and especially the resulting manural product, were more quickly recognized. It is an exceedingly one-sided food, and in use needs to be extended or mixed with some other feed of lower power. Bran, corn and cob meal, corn meal, ensilage, cut hay or straw, form the usual supplements.

For full-feeding, seven or eight pounds daily, mixed with corn meal, or wheat meal, and so fed, will lay on flesh faster than any known food, but about sixty days is the extent of the animals' power to stand the strain and they should be then marketed. In the South they full feed it mixed with cottonseed hulls.

For milch cows it is one of our most valuable foods, but should never be used beyond four pounds daily for an average-sized cow. Three pounds cotton meal and five pounds corn and cob meal, well mixed, or as much bran, or, perhaps better, if you can, a mixture of bran and corn meal, say four pounds, with hay or corn stover for coarseness, will usually make a satisfactory ration. If you have good clover or alfalfa hay you can use a smaller grain ration with equal results. The mixed grain is usually fed dry, one-half in morning,

the balance at night, but the best way is to run the fodder or hay through a cutter and dampen and mix the ground feed with it. Of course, there isn't any iron-clad rule for forming cattle rations. Each animal is, to a certain extent, a law unto itself in its powers of assimilation, and very much depends upon the judgment of the feeder. The use of cottonseed meal stimulates and increases the milk flow, at the same time holding the quality well up. It produces a butter of fine flavor and considerable hardness.

In fact, it seems to place within the reach of the dairyman a food that he can use with some profit during these times of low prices for dairy products.

For horses it is of great worth, but about two pounds daily, well mixed with either corn chop or bran, four pounds or more, seems to be about the allowable limit. If you are using prairie hay, dampening and sprinkling over it is the best way, unless you can run the hay through a cutter.

For hogs a pound or so daily mixed with other ground food will pay, but it should never be fed alone, as evil results will follow, most likely death.

For poultry, mixed with other grain foods it is especially valuable, stimulating the egg-producing functions powerfully, but the eggs are rather smaller in size.

Cottonseed meal, pound for pound, is considerably richer and stronger than linseed oil meal, is three times the value of bran, but difficult to compare with corn meal, as one is high in protein and low in carbohydrates, and the other vice versa. At ruling prices cottonseed meal can be retailed in Topeka at \$18 in ton lots, thus affording much the cheapest available cattle feed.

Pauline, Shawnee Co. M. M.

Agricultural Matters.

EXPERIENCE IN SUBSOILING.

EDITOR KANSAS FARMER:—I said I was going to plow my potato ground and follow the plow with a subsoil plow, and that I would write up the result to the FARMER. As I had not got the patch all manured, and I failed to get a team to help me, I have been obliged to change my plans some, and perhaps it is all for the best, anyway. First, I will give a description of the new Perine plow. "It is an improvement over the old one, but works on the same principle," was written to me by Mr. Perine. It is a handsome plow and the picture in the advertisement in the FARMER is not at all representative of it as for beauty.

I had never seen a subsoil plow before and felt somewhat awkward about this one, but I put on a pair of Percheron mares of 1,400 pounds weight each, and standing the plow on its bar started for the field. I made no change of adjustment, as it was set for three horses, and I reasoned that the makers knew about how it ought to be run, and I did not have to make any change at all, which speaks volumes for the man who put it together.

As I did not get to plow, and the marks of the cultivator were dimly visible in the field, I drove the team astride of a ridge and started the plow in, and for the first time in Allen county the bowels of the earth were being stirred. The plow went sixteen inches deep from the surface, and pulled awful hard. I went one round, after many stops to rest, and then changed double-trees and put on the big Percheron stallion. They now went easier, but in a short time I became aware that the enormous strain was too much to keep up long, so I lowered the shoe to make the plow run about fourteen inches in depth, plowing every two feet apart. This is all the change I made, except to raise the shoe again for twenty inches when crossing.

No man can form any correct idea of the work done from what I write, but should see for himself. The plow does not throw out any earth at all; simply lifts up the ground about four inches, raising it most at the plow and for two feet each way, when, of course, the ground splits or cracks in front of the

standard and allows the inch and a half standard to pass through, only leaving just such a track as a ground mole leaves, excepting this plow mole goes fourteen inches deep. When I returned, four feet away, the whole ground between the plow marks was raised up, loosened or stirred, being raised up the most where the plow had gone and at the two-foot point between it had some the appearance of a dead-furrow, but when this was also plowed into it was raised just as high as the rest. The earth seemed to travel ahead a little and raise up about four inches. It was wonderfully mellow and could have been harrowed down to a fine seed bed. I plowed three acres in one and one-half days and then cross-plowed it, going every two and one-half feet and twenty inches deep.

A great many people stopped to see the work done, and all seemed to be well pleased with it, and I actually thought it was impossible to improve it, as every inch of ground was well stirred, without turning any of it under, and it was left so I could finish manuring it when the ground is frozen in the winter. But when I came to cross-plow it, I discovered the change even more marked, and that the half had not been told. I plowed from one end, in the form of a back-furrow, going every five feet, or as close as the plow would run with the near horse close to the last mark. After this back-furrow land became about thirty feet wide I split the marks going one way, and came back five feet away as before, thus always turning one way, and as I only leaned the plow a little I plowed around the ends, in fact, the ends were the best plowed. This second plowing was down to the hard-pan but not in it.

The soil was real moist for six inches down, when from there to the hard-pan it was as dry as blotting paper, and reminded me very forcibly of cheap blotting paper, and had probably not been wet for two years or more.

Now this earth is at least six to eight inches higher than before and will take in all the rain it can hold, and this lower soil, in drying out again will, of a necessity, supply the surface with moisture, as the gumbo below it is water-proof. So loose was the soil after crossing it that the stallion, who had to always travel on the ground after the plow had passed, actually settled in from six to ten inches deep. This shows how much the plow must have raised up the soil, as before plowing I had hauled big loads of manure out with him and his mate and they did not settle in any at all.

I don't want any one to think that this was easy work; on the contrary, it is very hard work, and I was obliged to rest the horses five minutes after every other round. I would not advise any one to plow over twelve inches at first and sixteen inches in crossing, as few have from 4,200 to 4,500 pound teams to lean against the collars.

When I first saw the plow I noted that the weakest part seemed to be the draw-clevis, and, sure enough, it pulled clear in two, without anything to cause a jerk—simply a clear case of too much strain for such a piece of iron. When it broke, one end held fast and the team did not get loose from the plow, but I was not slow in getting out from between the handles, as the reins were over my shoulders, and I had "been there" once before. I put on a new clevis off of an old plow and finished with no further mishap.

I shall plow in the spring with my stirring plow, and perhaps will follow with the subsoil plow.

Now, to criticize the plow and work done. I do not see how the work can possibly be improved, and it must be seen to be understood. The plow is light, strong and very neat and attractive, but surely has too slender a draw-clevis.

Now, I paid full price for my plow and do not write this to boom this plow, but I would have given a dollar bill at any time to have the chance to read a complete description of the plow and its work. My plow is not for sale, and I would not take \$100 for it could I not get another for \$11.53.

CLARENCE J. NORTON.
Morantown, Kas.

Brown Durra.

EDITOR KANSAS FARMER:—In response to inquiries, allow me to say that brown durra is a non-saccharine sorghum. It grows a shorter stalk but larger grain than Kaffir; yields about the same per acre, at any rate not less, and is planted, cultivated and harvested in the same way. I will mail a sample package, to those who wish to try it, if postage is sent. I have none to sell.

J. W. GIDDINGS.
Crow, Phillips Co., Kas.

Can't Farm Without It--Kaffir Corn Inquiries.

EDITOR KANSAS FARMER:—I here enclose you \$1 for my renewal for the "old reliable" KANSAS FARMER. I cannot farm without it. I think it worth ten times that much to any farmer.

I would like to know how much seed of Kaffir corn to sow to the acre with a press drill. Or can we sow it with a press drill and make a seed crop? Or would it be better to plant it the same as we plant corn? I want to plant about twenty-five acres next spring, and I think if I could sow it with the press drill it would save cultivating, and I think it would be easier to cut it with the binder. I wish some one who has tried this way would let me know through the KANSAS FARMER.

JOSEPH NAILLIEUX.
Concordia, Kas.

Wants Results of Subsoiling.

EDITOR KANSAS FARMER:—We think a great deal of your paper. It is good for the farmer who farms the soil, either in grass, crops, stock or mixed. It is the genuine practice we need, not too much of the theory of those who have large capital which an ordinary farmer cannot follow. I would like to hear how Mr. C. J. Norton succeeded with his Perine subsoil plow. [Mr. Norton's letter on this subject appears in this week's KANSAS FARMER.] Does it break up the soil where it is tough gumbo or hard-pan, or just make a two-inch groove the width of plow? It is a question with me as to its working satisfactorily in the tough subsoil of Linn county, which reaches to either soapstone or rock, and is nearly water-tight. "Agricultural Depression" is not what we need just now. But you may send me that report if you have it to spare. I have written for the "Feeding Wheat" and "Alfalfa-Growing" reports, but I see from the FARMER that they are all gone. I should be glad to get all the practical information I can get about subsoiling and its results. Why did farmers not continue to subsoil years ago, after they once commenced it, if it was so beneficial to soil and crops?

Parker, Kas. S. P. BREWER.

The Subsoiling Craze.

EDITOR KANSAS FARMER:—The subsoiling craze, as I term it, was prevalent many years ago, in my boyhood days, and from some cause was abandoned. I have supposed it too costly. I have seen many of the plows lie rotting in fence corners. However, of late I see much said in the agricultural papers in favor of subsoiling. I, too, am in favor of subsoiling. However, my mode is so different from that in common practice that many may imagine me wild or visionary. The mode is easy and all men owning land will find that it pays to subsoil land by this method, which is to take any ordinary plow and stir the land deep as convenient, pulverizing thoroughly. Then sow thirty pounds of alfalfa seed to the acre, broadcast, and harrow in nicely. When you have got a good stand the roots will penetrate deep into the soil, doing better and cheaper subsoiling than can be done by horsepower, and the process will go on and on, year after year, silently subsoiling deeper and deeper, year after year, not even stopping when your head lies in peaceful slumber upon your nightly pillow, whilst bright dreams are fitting through your mind of the untold treasures that are being brought up from the hidden depths below. And your horse, as he peacefully sleeps in yonder alfalfa lot, seems to be dreaming that the mode of subsoiling is progressing

WEAK WOMEN

and all mothers who are nursing babies derive great benefit from Scott's Emulsion. This preparation serves two purposes. It gives vital strength to mothers and also enriches their milk and thus makes their babies thrive.

Scott's Emulsion

is a constructive food that promotes the making of healthy tissue and bone. It is a wonderful remedy for Emaciation, General Debility, Throat and Lung Complaints, Coughs, Colds, Anaemia, Scrofula and Wasting Diseases of Children.

Send for Pamphlet on Scott's Emulsion. Free. Scott & Bowne, N.Y. All Druggists. 50c. and \$1.

silently and more pleasantly than in days long past. I find the crop to give better returns than any other.

Agenda, Kas. D. DORAN.

Red Kaffir Corn.

EDITOR KANSAS FARMER:—Nearly every mail brings me in letters of inquiry from the readers of the FARMER, in regard to the culture of Kaffir corn, and I will answer through your columns for the benefit of all.

I have had six years' experience in the culture of Kaffir corn, though this is the first year I ever cut my Kaffir corn with a binder. The twine cost about 20 cents an acre to bind it. This makes it easier to handle, not only in shocking it up but in threshing. I have only one objection to cutting with a binder, and that is, in this part of Kansas if the first heads that ripen are cut off, new shoots come out at the first joint below and will make seed heads about one-fourth to one-third as large as the first. The objection is, if I cut with a binder we lose this second crop of seed. We can cut the first heads off and then, when the fodder is ready we can cut it with a binder. If the new machine that is talked about through the press will do this cutting the heads off, it will save a great amount of work. But we all cannot buy a machine this next season, though I can take a sharp knife and my team and, by taking two rows at a "through," the same as gathering corn, I can cut the heads off as fast as three men can husk corn, if not faster. Then I can let the balance stand until the fodder is ready to cut, if there is danger of frost, and cut it up with the binder.

The most important point in raising Kaffir corn is, not to plant too thick. If it is too thick in the row and the season is dry the heads will blast. The rows need not be over three feet apart. And in this part of Kansas (Neosho county) I drill my seed so as to have the stalks stand six to eight inches in the row, apart. But in western Kansas I would not plant thicker than ten to twelve inches apart, or two stalks every fourteen to sixteen inches apart. As soon as I have planted my seed I harrow the land over, and when the young plants begin to come up I go over the land again with the harrow. This fixes the land in good shape and keeps down the weeds. Cultivate the same as corn.

J. R. COTTON.
Stark, Kas.

"BROWN'S BRONCHIAL TROCHES" are of great service in subduing Hoarseness and Coughs. Sold only in boxes. Avoid imitations.

Mr. Chas. Bennett, Optician, 713 Kansas Ave., Topeka:

DEAR SIR:—My son, a boy of 17 years, has been troubled with his eyes since a child. I have tried different parties in having his eyes corrected, but only afforded him partial relief. After having my own eyes relieved by you, I had his eyes examined and fitted, and he has had perfect ease ever since. I take this plan of informing the public as to the relief received from your skill as a thorough optician.

R. J. STEWART,
105 Western avenue.

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

Irrigation.

PROFITS FROM IRRIGATION IN EDWARDS COUNTY.

From address of F. D. Smith, of Kinsley, before the Kansas Irrigation Association, November 23, 1894.

For this reason I have selected two examples, illustrating how much can be done under the most unfavorable circumstances, and how profusely our soil yields at the beneficent touch of even the smallest quantities of water applied intelligently and at the critical times.

The first is that of Mr. J. M. Cramblett, living twenty miles southwest of Kinsley. His plant consists of an ordinary stock pump with three-inch cylinder and a direct-stroke wooden windmill. The lift is twenty-eight feet. In addition to the irrigating that was done, the pump supplied water for over 100 head of stock. He irrigated a half acre, the soil of which is very sandy, so much so that in dry weather it shows a strong tendency to drift, but the subsoil is well adapted to irrigation. He used the furrow system entirely, and the actual work of irrigation was done by a girl 12 years old. The water accumulated in two large stock tanks and the irrigation was done early in the morning and late in the evening. Mr. Cramblett had had no previous experience in irrigation, and his success justifies the belief that every intelligent farmer who possesses a windmill may insure his family against crop failure if he will follow his example. The yield from the half acre, actual measurement, was, tomatoes 160 bushels, worth \$40; cabbage, 8,000 pounds, worth \$160, and lettuce, onions, parsnips, beets and other vegetables sufficient to supply the entire neighborhood. No particular attention was paid to raising vegetables especially for market, as such a yield was not expected. No potatoes were planted on the ground irrigated, and the result was that a certain proportion of the stuff went to waste because it was not adapted to the needs of the local market. The yield of cabbage was from a measured fourth of an acre, or at the rate of \$640 per acre. None weighed less than seven pounds, several weighed over fourteen pounds, and all were of the finest quality, crisp and solid. The cash value of the half acre's product will supply Mr. Cramblett's family with groceries for an entire year, and as the product was net, there being no expense for extra labor, as in wheat, the profit equalled that of eighty acres of wheat in an average year at the present price. Next year Mr. Cramblett expects to irrigate, with the same plant, an acre, and will devote it more exclusively to marketable vegetables, and it cannot be doubted from his success this year that his living is insured from that irrigated acre.

Number two is Mr. V. D. Billings, living one mile north of Kinsley. He used an eight-inch cylinder pump with a twelve-foot geared mill. The plant was not installed till the 9th day of June, after his crop had begun to suffer for water. There was no time to make a pond, as the immediate need of the water was too great to waste in puddling a pond. He was compelled to irrigate directly from the pump, but his soil is rather stiff and well adapted to irrigation by the furrow system, which he used. It is perhaps too early to say positively that winter irrigation will be a success in Kansas, but it is certain that in his case the soil required three times the amount of water that would have been necessary if he could have flooded it early, before his crop was in. He was only able to irrigate about one acre and a quarter, which was planted to potatoes and cabbage, and he was greatly hampered in his operations by frequent breakages in his mill and pump, two of which, occurring at the most critical time, shortened his yield considerably. From this acre and a quarter he has sold \$300 worth of potatoes, \$100 worth of cabbage, besides a full supply for his own family. The cost of his plant was \$150. Owing to the condition of his soil, the late hour at which he began and delays from breaking down, he came nearer failure than any of our

irrigators, but yet he has paid for his plant and has more cash to show for his summer work than any dry farmer in the county, no matter how large his operations may be.

Our first example, then, shows what can be done by the average farmer without experience or capital, using only the ordinary stock pump and mill. He can insure himself substantially against the frequent droughts that have kept him poor in spite of hard work and economy. The second shows what can be accomplished with a more ambitious outfit, even under conditions wholly unfavorable and working without any previous experience.

Our farmers have been in the habit of paying thousands of dollars annually for insurance against fire, tornadoes and hail storms, whose occurrence is at the worst not frequent; would it not be wise to pay a small amount for insurance against drought, whose recurrence is annual at some period of every season, certain to come and destructive of the whole year's toil? It is in this light that we have undertaken irrigation in our own county, not to irrigate large tracts, but to insure a living from a small area, while the balance of the holding is operated by dry farming. That it is a success we think the two examples just given sufficiently demonstrate.

Rainfall and Evaporation on the Plains.

From Prof. E. C. Murphy's report on "Irrigation Along the Arkansas in Western Kansas."

The rainfall in this region may be seen from the records of four places in it. Table I gives the names of these places, the mean annual rainfall, the amount and least amount of rain which falls during the four irrigating months—May, June, July and August.

Name.	Mean annual rainfall.	Rainfall in four months.	Least fall in four months.
Dodge City.....	20.91 in.	13.17 in.	8.24 in.
F. Wallace.....	13.21 "	7.69 "	4.33 "
Las Animas.....	12.26 "	7.89 "	
St. Lyon.....	12.67 "	6.95 "	

It may be seen from this table that the mean annual rainfall in nearly all of this region is about thirteen inches; in the eastern part it increases to about twenty-two inches. From 55 to 66 per cent. of this mean yearly precipitation falls during the four irrigating months.

It is well to note the fact that an inch of water in rainfall is, in general, not as beneficial as an inch of water applied to the soil by the irrigator, because the rain often falls so rapidly that 50 per cent. of it runs off in the drainage channels without soaking into the ground; and secondly, the rain does not always come at a time when most needed. If the irrigator has plenty of water, he can apply it to the soil when it will do the most good and withhold it when it is not needed. The number of inches of water required to mature a crop, minus the number of inches of rainfall during the irrigating season, gives the number of inches of water the irrigator must supply.

Very few measurements have been made of the evaporation in this region. The following, at Dodge City and Colorado Springs, were made in 1888 by Mr. T. Russell, of the United States Signal Service:

"Dodge City, yearly evaporation, 54.6 inches. Evaporation for the four irrigating months, 27.8 inches. Colorado Springs, yearly evaporation, 59.4 inches; evaporation for the four irrigating months, 23.8 inches."

The twenty-eight inches evaporated from the surface of water, minus the seven to fourteen inches of rainfall, leaves a resultant evaporation loss from water surfaces during the four irrigating months of from twenty-one to fourteen inches. This water would irrigate an area larger than that of the water surface.

The past ten years have proven beyond theory or argument that a twenty to forty-acre farm under irrigation and properly cultivated is more profitable than a quarter section farm in one-half the rain-belt section of America. No chances of drought, hot winds or failures.—*The Mid-West.*

Irrigated Farms---\$1,000!

Out of a thousand farms in **SOUTHWEST KANSAS**, of 160 acres each, we are selling a limited number equipped with an independent and permanent irrigation plant sufficient for at least ten acres on each farm. The price at which these 160 acre farms are selling is merely about what the ten acres and irrigation plant are worth.

Before buying a farm investigate this. Special terms made for Colonies. Call on us or write for particulars.

THE SYNDICATE LANDS & IRRIGATING CORPORATION,
Room 412 New England Life Building, 9th and Wyandotte Sts., KANSAS CITY, MO.

How Get Irrigation Plants?

EDITOR KANSAS FARMER:—We are a good deal interested in irrigation out here, as the crops are so uncertain, but how to get the outfit is the question. It would be well if there could be arrangements made with some manufacturer by which they could be furnished to all parties desiring to buy at about cost of manufacture, for cash, or time with mortgage on land, and then if the Legislature would put a competent man in each county of the western half of the State with machinery for putting down the plant the question would soon be settled. Let the man appointed receive a fair salary from the county or State, and let each man who wants to, and can put in a plant, get it as cheap as possible and have it work successfully. Some such arrangement would wonderfully help on in the good work, and a good many be thus enabled to save their homes who otherwise will lose them.
D. H. WELCH.
Macksville, Stafford Co., Kas.

If our correspondent will write to the firms advertising irrigation machinery in the **KANSAS FARMER** he will find that the terms he names for the purchase of machinery will about meet their views. Cash just now buys machinery very cheap. Several strong concerns are willing to give time on the kind of security mentioned by our correspondent.

It will be well, however, to have it understood, once for all, that neither the State nor the county is likely to undertake the work of erecting irrigating plants for individuals. The most that can be expected of the State is that it will develop and make available such information as will enable the thoughtful man to proceed with reasonable certainty that he will succeed.

Preventive of Hot Winds.

The farmer on the plains of this and other States not infrequently finds his apparent prospects for a fine crop destroyed in a day by an agency more irresistible than an army with banners. The hot winds sweep over his fields and his crops are dead. The subject of the origin of these winds and the question of their prevention has been made one of careful study by many residents of the plains, and while differing as to details of methods for preventing them, there is great uniformity in the conclusion that they are not visitations from some far distant land, but are of local origin.

Mr. O. J. Andrews, of Kingsdown, Ford county, has prepared a thoughtful discussion of this subject, from which the following excerpts are taken in order to give **KANSAS FARMER** readers a view of the prevailing thought in the region most affected:

"When we see millions of dollars worth of labor lost by destruction of crops by hot winds, the question becomes one of general interest. Can hot winds be prevented? I have been living on one of these broad prairies, 120 miles west of Wichita, ten years. I have conversed with many of the older settlers as I find them in almost every city and town, and presenting these theories many have not only agreed with me, but suggested that they be submitted to the public and to which I call your candid consideration. I emphatically assert that the remedy for our hot winds is in the prevention of wide extended prairie fires. West of range 22 to our State line, a belt 120 miles wide and over 200 miles north and south, the population is sparse, and during the months of March and April, in 1883, over half this part of the State was burnt over, leaving the ground bare of grass and vegetation. The hot sun shining on this bare, dry surface rendered it remarkably hot, and when heated like a bed of ashes its heat is thrown off into the air, and the prevailing course of the wind being invariably from the south and west, the hot air is carried from this hot bed over the State during the months of June and July, destroying the pollen of a large portion of our crops, and as a result a general failure.

HAVE YOU ANY PATENTS

that you wish developed, any machine made, or castings of any kind? **WE CAN DO IT.**

TOPEKA FOUNDRY,

Cor. Andrew Jackson and Second Sts.,

TOPEKA, KAS.

The fact that every two or three years the western third of the State is burnt over, more or less, that it becomes a surface on which heat is generated because of its bareness, is a fact that should interest every farmer and property owner in the State to seek a sure preventive against future crop destruction. The natural grasses west are buffalo, bunch and blue-stem. The last two can only live where fires are prevented. The buffalo survives but does not cover half the surface, in consequence of repeated fires. The rays of light not being absorbed by green vegetation, are reflected and moisture that would be retained in the earth is drawn out, vaporized and carried away.

"The evidence of this is that where the buffalo grass is not burnt off for a number of years the soil retains the moisture for weeks after the burnt off surface is hard and dry.

"I am aware many will inquire where is our 'township fire-guard law? Is it no account?' I answer, it is useless, because the population of many of our western counties is not sufficient to protect themselves from fire. The burden of taxation should not fall on the lone settler when all are alike injured. Suppose a man in Sedgwick county, or any of our centrally-located counties has forty acres of corn in fine condition, all tasseled out and the hot wind cooks the pollen before the grain is formed, would it not be infinitely better for him to pay a reasonable tax as a preventive to hot winds and save his crop, than to have a partial failure or nothing at all but fodder? What is true of corn is true of every other

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1895.

crop that is likewise affected. Local township officers are unable to obtain force enough to do justice in fire-guarding our western third of the State. State officers should look after this business, and a State tax be levied to secure a proper amount of work for a preventive of widespread fires, and legislation that falls short of this work of necessity will be a failure like our present fire-guard law on our statutes. Ten years of constant protection would more than pay all the State expenses by the sure increase of our agricultural products and increase of population because of the proper protection of the settler's interest."

A Fine-Toothed Harrow.

EDITOR KANSAS FARMER:—Will you kindly give directions for making a two-horse light harrow to be used for pulverizing the surface of ground finely so it will act as a mulch? Please state size of wire nails most suitable, how far apart, etc. Altamont, Kas. F. B. C.

Three sections of "Scotch" harrow with wire nails for teeth will answer the purpose admirably. Use nails large enough to extend two or two and a half inches through the harrow timbers and place them six inches apart and in such position as not to "follow" each other, but so that every tooth shall cut, and you will be pleased with the result.

Horse Markets Reviewed.

CHICAGO.

The strength injected into the market in consequence of the very light receipts last week has been more than maintained the opening day this week, and that, too, in the face of liberal receipts. A considerable trade both at auction and private sale was done the first day of the new year. And the bidding at auction much more from than of late. Prices were at least firm at recent advance. Draft horses were in good demand and \$10 to \$15 per head stronger than late quotations. Chunks were firm while chancey actors were very strong and correspondingly scarce. Prospects for an improved general market are better than they have been for two years.

KANSAS CITY.

W. S. Tough & Son, managers of the Kansas City Stock Yards Co.'s horse and mule department, report the market during the past week as still showing the effects of the holidays. Country shippers were a little afraid to trust the market on account of New Year's day coming on Tuesday. The receipts were only fair, with quite a good sized attendance of buyers. The majority of them filled out. There are some few on the market waiting for stock to come in next week. There was little or no improvement in prices on any class. The bidding at auction was prompt and active and the prospects are good for a good healthy trade from now on. From present indications the Southern market will be short-lived during the coming season and feeders will do well not to hold their stock too long. There was a very good demand for smooth chunks and blocks, nice, tasty drivers and a few extra expressors or draft teams. Extra good horses with hair and flesh will sell fairly well from now on.

Quite a little activity in the mule trade. There are several new dealers who have taken up their headquarters at Kansas City and expect to handle quite extensively during the coming season. There was more trading during the past week than any time this season. Prospects are good for a very fair market on good fourteen and one-half to fifteen hand mules with quality and shape. Prices, however, will get no better, on account of the low price of horses.

Beware of Ointments for Catarrh that Contain Mercury,

as mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is ten-fold to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, Ohio, contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally and is made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free. Sold by Druggists, price 75c. per bottle.

"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.

Send for our latest premium and clubbing list.

Gossip About Stock.

J. R. Campbell & Son, of Avilla, Jasper county, Missouri, report their herd of Poland-Chinas coming on in fine shape. Among other late re-enforcements is a young boar from Iowa "they say is a honey." He is a Butler's Darkness and one of the best ever brought on the farm. They are still shipping out, and among others a young chap that went last week for \$40. The reader will learn more of the breeding of the youngsters by reference to their advertisement elsewhere in this issue of the KANSAS FARMER.

DR. ORR'S BOOK.—Readers of the KANSAS FARMER will be pleased to know that arrangements have been made whereby they can obtain this concise and well nigh invaluable "Farmer's Ready Reference or Handbook of Diseases of Horses and Cattle" in combination with this paper at a slight saving in cost.

The separate prices of these are:
Dr. Orr's Book.....\$1.50
KANSAS FARMER, one year.....1.00
Total.....\$2.50

Two dollars sent either to the Kansas Farmer Co., Topeka, or to Dr. S. C. Orr, Manhattan, will secure both, making a saving of 50 cents.

E. E. Axline, breeder and shipper of Poland China swine and Barred Plymouth Rock chickens, of Oak Grove, Jackson county, Missouri, writes, and among other things states: "In my herd of Polands are twenty sows bred for February and March farrow. A little later on will have a nice lot of pigs of both sexes that are now coming on belonging to the fall of 1894 farrow. We have a few well marked Plymouth Rock cockerels for sale and will later on have eggs in season from pen No. 1, at \$1 per setting of fifteen, and from pen No. 2 at 75 cents a setting. We have added four very choice young cockerels that Mrs. Axline thinks are as good as any we ever brought to the farm."

J. S. Magers, owner of the Bourbon County herd of English Berkshires, at Arcadia, Kas., among other things reports to our field man that the herd looks 50 per cent. better than when he was there last November. Eight recruits were lately

hontas 3906 S. What better breeding could an ambitious breeder want? I hope to hear of the Kansans that are engaged in swine husbandry having a profitable time at their annual meeting, and wish them all good luck during the year 1895."

Mr. B. R. Adamson, proprietor of the Tower Hill herd of Poland-Chinas, at Fort Scott, says: "My herd is doing well and I think that they are in better shape than any I ever had at this time of the year. Thirteen two-year-old and yearling sows are bred to farrow in February and March—nine of them to Black Stop 10550 S. and four to Joker Wilkes 12682 S., the first-prize pig at the late St. Louis fair. Twenty-five of the young sows are yet to be bred. The fall farrows are growing nicely and shaping up in good style. Several of the more early ones are ready to go, and are of the broad-backed, mellow kind. Black Stop is proving himself a great breeder and a worthy son of his sire, Short Stop 6938 S. I see that a breeder reports a seven-months-old boar weighing 220 pounds. Joker Wilkes was seven months old yesterday and weighed 248 pounds; so you see, Mr. Brush, I can go him one better."

Publishers' Paragraphs.

The Secretary of the Navy has written for the *Youth's Companion* an article on "A Boy's Opportunities in the United States Navy." This is to be followed in that periodical by an article on "Promotion and Pay in the Army," by Cap. Charles King.

The Kansas Weekly *Capital* publishes more Kansas news than any other weekly paper. A free sample copy will be sent on application to THE TOPEKA CAPITAL CO., Topeka, Kas. Or send \$1.50 to this office for KANSAS FARMER one year and also *Capital* twice a week.

"The Book of the Fair," published by the Bancroft Co., Auditorium building, Chicago, is the most complete and elegant work of the kind that has yet been attempted by any firm to perpetuate the memory of the "White City" and the wonders it contained in 1893. It is issued in twenty-five parts of forty pages each, with large engravings—the finest that art can produce. Agents desiring a profitable work



THE LEAN ALL-STEEL HARROW.

added—the tops of his father's herd at La Cygne, Kas. Has bred fifteen top females for the coming spring farrow, having used four first-class boars. Among his late shipments and sales were two young boars to J. L. Sharp, of Holden, Mo.; one to V. R. Ellis, Gardner, Kas.; two gilts to John Adamson and two E. A. Huffine, both of Garland, Kas.; two gilts to Welden Darlington and a boar to Martin Darlington, near Arcadia. There are five good young boars yet and he could spare a good gilt or two.

Among others reporting to our field man, Mr. Brush, last week, was Mr. Chas. M. Cox, of Golden City, Mo., whose farm and herd of Poland-China swine are situated in southwest Dade county. He reports having bred forty aged brooders and young sows. His fall re-enforcements, including two Eastern young boars, are coming on nicely. He states, in writing of some Kansas literature that came to him through the KANSAS FARMER, "Alfalfa-Growing," "Feeding Wheat to Farm Animals" and "Russian Thistle," issued by the Kansas State Board of Agriculture: "I appreciate the little books very much, as they contain much food for thought and of practical benefit to the breeder and general farmer. Kansas is a great State and her people wide-awake and progressive neighbors."

Mr. T. J. Stemmons, of Avilla, Jasper county, Mo., an all-round breeder of the old Kentucky school, now handling Poland-Chinas, Holstein cattle and Shropshire sheep, writes that he regrets that the Missouri and Kansas State swine breeders' meetings both occur at the same time, as he thinks the breeders of both States should get together and be more neighborly. Missouri and Kansas are bound to be the equal of Indiana and Illinois and ought to pull together, as do Iowa and Nebraska. "I am busy taking care of young lambs and shipping young hogs. One of my best young sows, Minnie Bess, goes to Webster county to-morrow for \$60; also a young boar to St. Louis county. Since your Mr. Brush was here in November I have bought a tip-top young Wilkes boar that I think is hard to beat. Also a Happy Medium pig by Happy Medium 219044 S., he by Happy Medium 8397 S.; dam Lady Shaul 2d, she by Over All 6641 S.; second dam Lady Shaul, by Tecumseh Chief 2094 S. and out of Poca-

to handle will do well to write the above-named firm.

THE UNTERRIFIED.—The Topeka *Advocate* still champions the cause of the 118 000 unterrified Populists of Kansas and their brothers in other States, yet it talks politics in such an unprejudiced way that it is read by many Republicans, Democrats and Prohibitionists. You can get it for \$1 a year, 25 cents for three months. The *Advocate* and KANSAS FARMER a year for \$1.50.

Little Switzerland has played a wonderful part in the history of liberty and the development of democratic institutions. She not only has a great history, but she has a most active and strenuous political life to-day. Her legislators and her people seem as fertile and original as ever in devising the methods and machinery of freedom and progress. Mr. William D. McCrackan, the author of "The Rise of the Swiss Republic," contributes an important article to the December number of the *New England Magazine*, on "Swiss Solutions of American Problems," pointing out in a most forcible way how we may profitably learn from the little Alpine republic. It is an article which should be widely read in America at this time. Warren F. Kellogg, publisher, 5 Park Square, Boston.

BURPEE'S FARM ANNUAL FOR 1895.—Always fresh and original, "Burpee's Farm Annual" for 1895 is even better than ever before. The cover is most artistic and beautiful; lithographed in ten colors, it shows on the front an attractive bouquet of the new Sweet Peas, now so fashionable, while on the rear is a bird's-eye view of Fordhook Farm, where many of Burpee's seeds are grown and where there were conducted the past season more than 6,000 trials of vegetables and flowers grown from seed. This catalogue is really a complete book on seeds, as it contains 174 pages, besides several colored plates and special circulars. The illustrations, 400 in number, are all true to nature, being mostly engraved from photographs, while the descriptions of both new and standard seeds are noteworthy for their accuracy. Messrs. W. Atlee Burpee & Co. make the nominal charge of 10 cents for the "Farm Annual," which is less than actual cost of publication, but will be pleased to mail a copy free to any of our readers who intend

THE COLUMBIA PAD CALENDAR



You Need It.

A Desk Calendar is a necessity—most convenient kind of storehouse for memoranda. The Columbia Desk Calendar is brightest and handsomest of all—full of dainty silhouettes and pen sketches and entertaining thoughts on outdoor exercise and sport. Occasionally reminds you of the superb quality of Columbia Bicycles and of your need of one. You won't object to that, of course. The Calendar will be mailed for five 2-cent stamps.

Address Calendar Department,

POPE MFG. CO.,

Mention this paper.

Hartford, Conn.

to purchase seeds this spring. It contains much useful information which cannot be had in any other form, and we strongly recommend all who have occasion to buy seeds to consult the catalogue of these well-known Philadelphia seed-growers.

A CALENDAR WORTH HAVING.—Almost every one has use for a calendar, and by the same token, they ought to have one that is of some use. A calendar that you have to study or "set" has little excuse for existence. The one that we like best of all is that published by N. W. Ayer & Son, the newspaper advertising agents, of Philadelphia. The handsome copy for 1895 carries on its seal their famous motto, "Keeping Everlastingly At It Brings Success," which will alone each day be worth to all who use it far more than the price of the calendar. The size is generous, and the work a beautiful specimen of the printer's art. Each day, as is becoming to such an important slice of time, is printed large enough to be read across a room. Then, too, the matter on the flaps deals with a subject in which there is a growing general interest. That the demand for this calendar increases each year, we can easily understand, for we do not believe that any one who has spent one year in company with it will be willing to spend another without it. The price is 25 cents, delivered everywhere postpaid, and in perfect condition.

The Lean All-Steel Harrow.

The harrow has become an important implement, and is now being used for such a variety of farm and garden work that the selection of a tool for this purpose should receive the most careful consideration. To obtain the desirable features in a harrow, as well as other implements, requires many years of experience, and the manufacturer who attempts to make all the different farm implements, is not likely to incorporate in any of them the perfection attained by those who are giving their undivided attention to one implement. As many of the patrons of the Roderick Lean Manufacturing Co. can testify, they have manufactured steel harrows exclusively for twenty years, and this extended experience is surely sufficient to commend them to those intending to purchase harrows.

The illustration on this page shows one of the styles of steel harrows made by this company, which received the highest award at the World's Columbian Exposition. This harrow is so constructed that by means of a lever it may be relieved of trash at any moment, without stopping the team, and when desired the teeth may be adjusted to work at any angle best suited to the conditions of the soil, and made suitable for harrowing all kinds of growing crops.

It is claimed to be the most substantial lever harrow on the market, as it is constructed entirely of a special quality of steel, employs no castings and has fewer parts than any other. The teeth are diamond-shaped, forged and tempered, and will outwear and do better work than any other.

Provided these Lean All-Steel Harrows cannot be found in the hands of your dealers, you are requested to write to the Roderick Lean Manufacturing Co., Mansfield, O., for descriptive circulars and special prices.

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

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.

A WOMAN'S TEMPLE.

Unconsciously a woman builds
A temple in this world below,
And day by day a stone is laid
Of little things that come and go.
So it doth slowly rise above
The tide of years until its dome
Has reached the glory clouds of heaven,
A world within itself, a home—
She wisely builds upon the rocks
Far more eternal than the years,
The pavement is of solid truth,
Untouched, unworn by falling tears.

The walls are innocence, and grace,
Fair virtue makes them high and strong.
Within they shine with purity,
Resound with muse and sacred song;
The gates are pearls of truth and love,
Whence issue forth bright gleams of light,
Each stone a little sacrifice,
And kept in place by truth and right.
The pillars are of gentle acts,
That bear the weight of golden beams
Of life, and bound by cord of love,
And braced by faith's unlying streams.

Each nail a heart-beat set in place,
Each blow her very center shook;
The steps are trials stepping-stones
Where patience climbs with upward look;
The throne, her grand eternal soul,
Her king, the one she loves, loves best.
Her altar, where sweet incense rises,
Does hold her greatest and her best.
So day by day a stone is laid,
Until the white-capped dome
Is hid among the shining clouds,
And she has reached her heavenly home.

QUEEN OF MADAGASCAR.

The Dusky Female Ruler Has Many Little Vanities.

A member of the London Missionary society, who once gained admittance to the royal presence, tells me that he was obliged to go through the entire routine of native humble piedad on that memorable occasion. He had to kneel in the dust, rub his nose into the mud and hand Ranavalona a five-franc piece for a new pair of socks. This is no joke. In other monarchical countries taxes are levied for the queen's pin money; here, native and foreigner alike are constantly asked to clothe the royal legs in other colors than those provided by nature. The first pair of stockings worn by a Malayasy sovereign were bought of a French sailor. He paid five francs for them, that is, the courtier in attendance to the king was asked to do so. The operation pleased the royal mind (we know nothing of the attendant's feelings in the matter), and as one pair of socks would not suffice, he forthwith issued a proclamation ordering all loyal Madagascars to open intercourse with him or the government hereafter by first depositing five francs "stocking money," "Hesina," in the native tongue.

Neither extreme poverty nor birth absolves a Malayasy man, woman or child from the tax. It is levied on every



RANAVALONA, QUEEN OF MADAGASCAR.

and all occasions—at receptions and audiences, in church and in the gorgeous throne room. The "stocking money" must accompany every petition, every public document; without it no child may be registered as legitimate; no marriage nor divorce papers are granted. The queen travels in her kingdom, her train stops in every village, whose mayor is expected to deposit a five-franc piece after the speech of welcome. If he failed to do so, he would spend the rest of his life dragging behind him a fifty-pound iron ball and chain. The Hesina alone would suffice to keep the queen not in stockings only, but in all other kinds of wearing apparel, if her tastes were not so extravagant and her husband less of

a rapacious rogue than he chooses to be.

Ranavalona, as already intimated, has an idea that she stands as high in the world as Queen Victoria, for instance, and that she must not allow the German empress to outrival her in the matter of dress or jewelry. She has a running account at Duchet's, in Paris, and Worth and Redfern are also largely patronized by the little negro woman. The upper story of her palace, which is little better than an open garret, serves for the royal wardrobe. There, subject to the exigencies of rain and dust, the pleasures of rats and mice, worms and moths, hundreds of state robes and demi-toilets are hung up on ordinary nails, together with legions of hats and umbrellas, corsets of all makes and petticoats of all shades. The royal stockings, with and without hygienic garters and drawn over the models which dudes admire in the shop windows, fill several square meters of space. There are trunks full of twenty-four button gloves, mostly mauve color, and whole regiments of shoes, boots and slippers from two to three inches shorter and narrower than her majesty's tootsies.

A special section of the garret is reserved for soaps, hair restorers, paints, pomades and patent medicines. Her majesty, you must know, buys everything advertised that promises to improve the female figure divine or add to its charms or prolong its youthful appearance, and being a royal lady she thinks she owes it to her station to buy in royal quantities. So she orders a gross or a dozen of everything that comes along, simply for the pleasure of doing so, and not with any intention of utilizing the queer things billed her.

When not on official parade Ranavalona delights in wearing the national dress, consisting of a white plaided petticoat and a cotton scarf around her shoulders, without underwear or decorations of any kind or description. She leaves her palace only on moonlight nights in a sedan chair of ordinary build to visit her numerous relatives in the capital. Her attendants, on such occasions, are but few in number; she employs no outrunners, no showy liveries. Nobody is allowed to pay her reverence or take the least notice of her. Everything Ranavalona does or is allowed to do by her husband and prime minister, she does thoroughly; her incognito, when she chooses to assume it, is as dark as her state appearance is dazzling and luminous.—Cor. Philadelphia Times.

Some Things to Learn.

Learn to laugh. A good laugh is better than medicine. Learn how to tell a story. A well-told story is as welcome as a sunbeam in a sick room. Learn to keep your own troubles to yourself. The world is too busy to care for your ills and sorrows. Learn to stop croaking. If you cannot see any good in the world keep the bad to yourself. Learn to hide your pains and aches under a pleasant smile. No one cares to hear whether you have the earache, headache or rheumatism. Don't cry. Tears do well enough in novels, but they are out of place in real life. Learn to meet your friends with a smile. The good-humored man or woman is always welcome, but the dyspeptic or hypochondriac is not wanted anywhere, and is a nuisance as well.—Detroit Tribune.

Reforms in the Bedroom.

We will be a healthier and happier race when the double bed is banished. The light iron or brass bedstead, with a mattress that can be easily aired and kept clean, is the bed that ought to be generally used. And the heavy comforter ought to be banished with the double bed, for it belongs to the log cabin and the back woods. The bed covering par excellence is a light weight blanket that can be frequently washed and kept soft and white. Tucking the bedclothes tightly in is another custom handed down by dwellers in arctic wilds. The practice of making up a bed and making it almost airtight is as unhealthy as it is unclean.—Womankind.

What Benzoin Will Do.

Benzoin is one of the best friends of woman. A few drops of it in a basin of water gives a pleasant odor to the face and hands. It helps to whiten the skin and to tighten it. Tan and wrinkles are both removed by its action, and, combined with glycerine or alcohol, it is an excellent lotion.

TABLE FURNISHINGS.

Information Gathered in Europe for the Women of America.

There is no more fascinating study to the mind feminine than dainty trifles for the dining table.

The shops at present are full of quaint and pretty designs for all manner of things that one can use, in silver, china and glass.

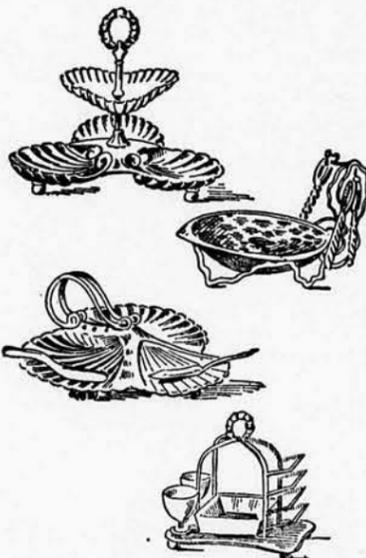
For instance, who could imagine anything more appropriate for cherries and strawberries than a silver fluted dish, with a bunch of cherries, all in silver, for a handle for the one, and a strawberry bowl fashioned like a leaf for the other?

Very attractive also is the grape stand hung with silver fruit, and for peaches and other fruit a pyramid of shell-shaped dishes.

A silver nut dish rejoices in the quite Egyptian title, "Osiris."

Louis XV. ware is still in high favor, as some of the new designs show. The vegetable dishes are rather odd in design, consisting of three partitions, drainer and hot water compartment. The entree dish and biscuit box are both very heavily chased.

One of the very newest things out is the stand. It is in silver and is designed for butter, cheese and biscuit;



PRETTY THINGS FOR THE TABLE.

cheese and biscuit form one course at every well-regulated dinner table, or course dinner. There are some ill-advised people who always want butter for their biscuit—and for these was designed this dish, which would hardly be used, however, except at the family table.

Could anything be sweeter than the silver pepper grinder with cut glass body, accompanied by a fluted mustard jug. They are simply captivating. The egg-frame toast rack and butter dish in silver cost the pretty sum of \$50.—Boston Globe.

THE CARE OF GLOVES.

With Good Dressers It Amounts Almost to an Art.

As the afterwear of gloves depends much on the way they are treated from the very beginning, new gloves should be put on most carefully. Those who know say that you should never put on gloves when you are in a hurry and just going out; rather choose another time, when your hands are cool and you have ten minutes or so to devote to them. Before beginning operations dust a little powder into each glove, for this will cause them to slip on more easily. Work the fingers well on before putting in the thumb; then work that in slowly, gradually smoothing the kid on to the hand. When the glove is carefully put on, pull it well down and button the second button, and any others there are, with the exception of the first. Leave this first button until the last. If the hands are hot remove the gloves and then turn them inside out, pulling them carefully into shape and leaving them in the air for an hour or two before putting them away.

IVORY



FOR CLOTHES.

THE PROCTER & GAMBLE CO., CINCINNATI, O.

In the preparation of new gloves for wear a glove-stretcher will be found of the greatest assistance. This, however, must be used with discretion, for a glove that is too large is quite as annoying as one that is too small. It is well in buying gloves to provide yourself with a spool of mending silk or linen exactly the color of the gloves. To clean gloves is not always easy. The gloves should not be allowed to become almost black with soil before beginning the cleaning process. All light gloves—especially white ones—can be cleaned in benzine or naphtha. Wet one glove at a time, of course. Dip it into a basin containing about a cupful of the benzine, and shake it and squeeze until some of the dirt is washed out. Then lay the glove on a clean towel or piece of muslin, and with a muslin rag rub from the wrist to the finger tips. When the glove is still moist pull gently on the hand and rub again with a rag moistened in benzine, cleaning the finger tips, thumbs and palm well. Remember that if you want your gloves to look at all well you must always rub one way, from the wrist up toward the fingers. Repeat the same process with the second glove, and place the pair in the open air for an hour or more, letting them rest on a clean towel. When they are thoroughly aired, lay them away in violet or heliotrope orris, and your gloves, when you are ready to wear them, will look like new and will smell far sweeter than when they were purchased.

Where good paste has been used it is often difficult to remove a label from a bottle. If the label be thoroughly soaked with water, and then held for a moment over a gas-flame, the paper will be loosened by the steam thus formed, and can be stripped off without trouble.

GEARHART'S FAMILY KNITTER.

Knits a stocking heel and toe in ten minutes. Knits everything required in the household from homespun or factory wool or cotton yarns. Most practical knitter on the market. A child can operate it.
STRONG, DURABLE, SIMPLE, RAPID.
Satisfaction guaranteed. Agents wanted. For particulars and sample work, address:
J. E. GEARHART, Clearfield, Pa.

FITS CURED

(From U. S. Journal of Medicine.)

Prof. W. H. Peeke, who makes a specialty of Epilepsy, has without doubt treated and cured more cases than any living Physician; his success is astonishing. We have heard of cases of 20 years' standing cured by him. He publishes a valuable work on this disease which he sends with a large bottle of his absolute cure, free to any sufferer who may send their P. O. and Express address. We advise anyone wishing a cure to address, Prof. W. H. PEEKE, F. D., 4 Cedar St., New York.

INCORPORATED OCTOBER 29, 1894.

LOCATION, 1103-1105 NORTH FOURTH AVENUE.

HOME OF REDEEMING LOVE,

WICHITA, KANSAS.

Object.—To provide a home for penitent fallen women, and to rescue them from lives of shame; to reclaim, educate and instruct them in industrial pursuits, and to restore them, when possible, unto their homes and parents. BENEVOLENT FRIENDS, this institution is non-sectarian and non-aligned—each worker freely doing her part to "rescue the perishing, lift up the fallen and tell them of Jesus, the mighty to save." God is blessing the work and good is being done. Now, we want you to "help just a little" and enable us to do still greater good. The erring daughters must be reclaimed—they are more often sinned against than sinning. The Savior said, "Neither do I condemn thee; go in peace and sin no more."
Address REV. LYDIA A. NEWBERRY, WICHITA, KAS.

The Young Folks.

"BE STRONG."

Be strong to bear, O heart of mine!
Faint not when sorrows come,
The summits of these hills of earth
Touch the blue skies of home.
So many burdened ones there are,
Close journeying by thy side;
Assist, encourage, comfort them,
Thine own deep sorrow hide.
What though thy trials may seem great
Thy strength is known to God;
And pathways steep and rugged lead
To pastures green and broad.

Be strong to love, O heart of mine!
Live not for self alone,
But find, in blessing other lives,
Completeness for thine own.
Seek every hungry heart to feed;
Each saddened heart to cheer;
And where stern justice stands aloof,
In pity, draw thou near.
Kind, loving words and helping hands
Have won more souls for heaven
Than all the dogmas and the creeds
By priests and sages given.

Be strong to hope, O heart of mine!
Look not on life's dark side;
For just beyond these gloomy hours,
Rise radiant days abide.
Let hope, like summer's rainbow bright,
Scatter thy falling tears.
And let God's precious promises
Dispel thy anxious fears.
For every grief a Lethe comes;
For every toil a rest.
So hope, so love, so patient bear,
God doeth all things best. — *Womankind.*

CRUMBS.

Up to my frozen window-shelf
Each day a begging birdie comes,
And when I have a crust my-eit
The birdie always gets the crumbs.

They say who on the water throws
His bread, will get it back again;
If that is true, perhaps—who knows?
I have not cast my crumbs in vain.

Indeed, I know it is not quite
The thing to boast of one's good deed;
To what the left hand does, the right,
I am aware, should pay no heed.

Yet in my modest verse I tell
My tale, some editor, maybe,
May like it very much, and—well,
My bread will then return to me.
— *Harper's Magazine.*

FIGHTING A FIRE.

How the New York City Fire Department Does Its Work.

It is a cellar fire—a bad one—and in a factory. Clouds of dense black smoke pour up from the basement and out of every crevice around the big folding doors that form the entrance. Bits of falling glass tell us that the pressure of smoke and of the gas generated by the combustion going on within the building is beginning to break the windows in the upper part, and if we are not active the flames will get the better of us. Our foreman is everywhere at once, directing the captains of the arriving companies to their different positions.

The watchman of the factory cannot be found. Our foreman shouts:



"OPENING UP."

"Quick! the battering ram. Break open the big doors!"

One is quickly unshipped from its place underneath the truck, and, with a man on each side, at the command of the captain, the ram is lunged forward at the big doors. Crash—the doors quiver under the impact of the com-

blined weight of the solid mass of iron and the two heavy men. A few more blows and the locks give way, the doors fly open, and into the black, stifling smoke we force our way, dragging the heavy hose with us.

We can see no fire—nothing but thick, dense smoke, choking our throats, and making the water run from our eyes in streams. Meanwhile the men from the truck company have been at work with the butt ends of their axes, and have broken open the dead-lights and grating in the front over the basement and the basement doors. The fire having shown up there, we are ordered to "back out" and "work in" the basement—an order easily given, but not so easily obeyed; for the smoke is now thick and so stifling that people in the crowd on the other side of the street are obliged to beat a quick retreat before it. But we firemen are there to obey commands, not to question them, and down we go.

A shower of glass greets us as we back out, for it is now raining glass and bits of the window-frames from above. Ladders having been raised to the upper floors, the truckmen are making an opening for the pipemen of other companies, that they may be on hand should the fire get above the first floor. Another shower, this time of red-hot plaster, greets us as we work our way into the basement; and the fire, now spreading all over the ceiling, brings more down around us. The heat is frightful there, and we turn our fire-hats back foremost to protect our faces as best we can. We slash the water around, knocking over burning beams and piles of packing-boxes, the hose squirming and quivering under the pressure of the tons of water being forced through it every minute; the united strength of three or four men is required to control it. All at once one of our number gives a gasp and tumbles down at our feet, face forward, in a pool of dirty water and plaster, overcome by the smoke and heat. Another drops his hold upon the hose and stoops to assist his fallen comrade. It is now red-hot in the basement, and we cannot breathe much longer.

If we do not back out soon, it will be all over with us, but firemen, in the enthusiasm and excitement of the moment, hate to retreat until actually driven out, so we still hold our position. At last we cannot stand it, and we retreat to the doorway.

The fireman who was overcome, assisted by one or more companions, reaches the foot of the stairs. A battalion-chief, in command on the pavement above, seeing our position, shouts: "Here! A man hurt! Down in the basement!" In a second a dozen brave fellows dash down the steps, and, lifting up our injured comrade, carry him tenderly up to the street, and then over to one of the patrol wagons, where, with plenty of fresh air and brisk rubbing, he is soon brought to his senses. — *St. Nicholas.*

Just Like the Old Man.

One morning a merchant, noted for his penuriousness, came into his office and effusively greeted his bookkeeper, who had entered his service just twenty-five years before, at the same time handing him a closed envelope with the remark: "This is to serve you as a memento of the present occasion." The grateful recipient did not venture to open the envelope until encouraged to do so by a nod and smile from his employer. When he found inside only the merchant's photograph he was dumfounded. "Well, have you nothing to say?" asked the merchant. "Sir," replied the bookkeeper, with a bow, "it is just like you."

Size of the Average Man.

In the man of average stature the height of the body is ten times the length of the face; the face from the chin to the hair is as long as the hand; the arm is four times the length of the face; the sole of the foot is one-sixth the length of the body, and six times the thickness of the hand in the thickest place equals the thickness of the body.

"What are you doing with that key, Freddie?"

"I'm goin' to try and make the baby walk with it. Seems to me if a key is smart enough to make a doll that ain't alive walk, it ought to be smart enough to make a live baby do it."

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

Royal Baking Powder

ABSOLUTELY PURE

WAYS OF THE OSTRICH.

Something of the Family Life of a Good-Sized Bird.

If any of your children should see a bird nine feet high hopping about on the pavement, picking up his dinner, you would be astonished and frightened, no doubt. It would be a wonderful sight in a city, but in the forests of Africa or South America, where ostriches are found, there are many of these great birds hunting their dinner.

An ostrich will weigh sometimes as much as three hundred pounds. His legs are very powerful as well as agile for such a clumsy-looking creature. He can run much faster than a horse and gets over the ground in great leaps, twelve or fourteen feet at a time. Using his legs as weapons, he can kill a panther with one blow. He is not a stupid bird, as some old historians would have us believe when they tell that he sticks his head in the sand and considers himself entirely concealed. He is, on the contrary, very cunning and employs strategy as well as swiftness to escape the hunters who are always after him.

For, unfortunately for him, nature has provided him with exquisitely beautiful feathers, and so hundreds of men are engaged in the business of trying to get them away from him. At ordinary times the papa ostrich finds it easy to escape from a hunter by means of his long legs. But when



THE OSTRICH.

he has a flock of children to take care of he sends the mother and brood off in one direction, while he draws the hunters along, by some strategy, in another. The ostrich rolls over the ground as if he were hurt, and the hunters, thinking to get so easy a prey, dart after him. Then cunning Mr. Ostrich keeps up this game awhile until he gets his pursuers at a safe distance from his family, when he suddenly takes to his long legs for flight, leaving his baffled would-be captors far behind.

The ostrich feeds upon grain, roots and grass, with few stones, pieces of brick, nails and such trifles, by way of occasional delicacies. The bird constructs a hollow nest in the sand, and the eggs are taken care of there by both parents. When the baby ostriches are hatched out they are said to be fed on ostrich eggs, these supplementary eggs being furnished by kindly friends of the ostrich for the use of

the young family. Ostrich eggs are said to be very good to eat. An egg weighs about three pounds, each being equal to about three dozen of the hen's. These eggs are a great treasure to the hunter finding them in the desert, the eggs furnishing not only food, but a dish to cook it in. The egg can be set on the fire, cooked in the shell and then eaten out of it. The shells are also used for cups and pails to hold water and other articles by the natives.—*N. Y. World.*

FIGHT IN THE JUNGLE.

A Bear Struggling for His Life with an Enormous Serpent.

How the denizens of East Indian jungles settle their differences has been told by an eyewitness. A hunting party was attracted by a succession of roars of rage and pain, and a prolonged hissing, like the rush of escaping steam. They hurried to the spot and saw a jungle bear fighting for his life with an enormous serpent. The snake had wound its giant folds around the bear, which dashed itself from side to side, and rolled over and over on the ground in frenzied endeavor to get free, roaring and snapping its jaws like castanets at the serpent's folds. It was unable to reach them, however, owing to the way in which they were constricted about its body. In this way they struggled until they reached the edge of the incline, down which the bear threw himself with a speed that disconcerted the serpent, for it unwound a couple of folds and threw its tail around a tree, evidently with the intention of anchoring itself and preventing the unpleasant consequences of a rapid tumble down hill. This appeared like admirable strategy, but it resulted in the serpent's undoing. The rigid line of tail, straightened out from the tree to the bear's body, gave the infuriated beast a chance to seize hold of its assailant. He promptly accepted the chance, and, with a tremendous effort, turned and fastened his powerful jaws in the snake's quivering flesh. After this the issue was never in doubt. The snake tried to get away, but the bear held on grimly, until the serpent was nothing but an inert mass.

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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.

The Kansas Swine Breeders held a successful meeting in this city, on Monday and Tuesday of this week, of which we shall have more to say hereafter.

Every farmer who desires to improve financially and in his vocation from this time on is cordially invited to subscribe for the old reliable KANSAS FARMER, a medium which will help do it.

The Improved Stock Breeders are in session as we go to press. They represent very large interests in Kansas and are benefactors whose labors will add to the profits of the husbandman for all the future.

The cheapest and best way to break up monotony and to make life and home enjoyable is to provide plenty of good reading. Take the county paper; take a State political paper; take the KANSAS FARMER; take a good monthly magazine—take these, if no more.

Every farmer in Kansas, and especially the breeders and stock-raisers, should have the greatest live stock journal in the world, the *Breeder's Gazette*, of Chicago, price \$2 a year. We make a special offer of it and the KANSAS FARMER, both papers one year, for only \$2. Subscribe now through this office.

A new candidate for public favor is the *Kansas Bee Journal*, published at 30 cents per year, by Miller & Dunham, Topeka. The editor and the publishers are practical apiarists and the KANSAS FARMER bespeaks for their new venture a liberal support from the growing honey industry of the Sunflower State.

It is said that the American farmer is to have a new competitor in the production of some of the lower grades of horses. The plains of Brazil and Argentina are reported to present attractive fields for the establishment of breeding establishments for such horses. It is also true that the A 1 horse has continued to have good sale in all markets, and he is now the only horse worth producing in this country.

Secretary F. D. Coburn, of the State Board of Agriculture, is desirous of obtaining information as to the location, depth and water-supplying capacity of wells in Kansas that have been tested for irrigation or similar purposes, and from which the pumping is done on a considerable scale by wind, gasoline or steam engines. To parties notifying him of such wells he will be glad to send a blank upon which to furnish the desired information, which will be utilized in some way most helpful to irrigation and agriculture. Those who can contribute anything of value to the fund of facts should be interested in doing so, for if what is already available from various individuals could be put within early reach of the rest of our people it should be greatly beneficial.

LOWEST PRICES EVER RECORDED.

The downward trend of prices has continued right up to the close of the year 1894. Erroneous notions as to market tendencies may be received if only one, or, at most, a few staples are considered, but, when the average of the leading commodities is considered there is little danger of being misled. In their report for last Saturday, R. G. Dun & Co., of New York, say:

"The complete review of different branches of business places in a clear light the fact that prices of commodities are at the lowest level ever known. Eight years ago in July prices averaged only 73.69 per cent. of the prices for the same articles and in the same markets January 1, 1880, and this remained the lowest point ever touched until August 10, 1893, when the average fell to 72.76. Early this year prices dropped below all previous records and have never recovered, the average December 26 being only 68.73 per cent. of the prices in 1860. The fall since a year ago has been 5 1/2 per cent., but very unequal in different branches. In iron and steel products, 14 per cent.; in wool, 13.4 per cent.; in woollens and cottons, about 15 per cent.

"The condition of industries has been largely governed by the fall in prices, and while production is much greater than a year ago, the aggregate increase being fairly measured by the increase of 8.24 per cent. in hours worked in November compared with the previous year, it has been the controlling feature in almost every important industry that consumption has not kept pace with the output and has not sustained prices. In iron and steel, the lowest prices of the year are at the close and the lowest ever known, the demand calling for less than half the usual quantity of rails, with large decrease in many other branches, though probably the use of structural forms was larger in 1894 than ever before. The woolen industry records a production for the year of about a quarter less than normal and for the last four months 28.47 per cent. less than in 1893 in quantity of wool consumed, but in value of product the decrease was of course greater.

"The year has been especially noteworthy for the lowest prices of wheat and cotton on record. Both suffer from wholly unprecedented accumulation of stocks, the crops being large. Outside this country wheat production has not increased enough to justify a price of 60 cents in New York, and the accumulation is largely due to false reports of yield intended to frighten buyers and raise prices. The same influence has been felt in cotton, which is also affected by world-wide depression in business and decrease in consumption of goods."

The comparison with 1860 does not furnish the full measure of the decline. It is well known that the average of prices that year was far below that of subsequent dates. The effects of depression are measured, like those of a fall in the physical world, more in accordance with the absolute distance of the descent than by the relation of the lodgement to some position formerly occupied. The depressing influence of the decline in prices is more easily accounted for when it is ascertained that the average price of the forty-five leading staples in 1860 was only 81 per cent. of the average of 1874 for the same forty-five staple commodities. According to the above report of Dun the decline had reached a level in 1894 that prices were only—in round numbers—69 per cent. of those of 1860, so that the prices reached in 1894 were only 56 per cent. of those of 1874, a decline of 44 per cent. This is not very far from a cut in the middle.

It is not necessary here to discuss the causes of this great decline. Some people will be interested in comparing it with the decline in the price of silver since 1874. Others will turn with aversion from such comparison. Some will attribute it to the tariff, and others will aver that the tariff had nothing to do with it in those countries in which no tariff changes have taken place and none have been even threatened.

It is certain, however, that the decline made the depression—the panic—and that the great depressions of history were likewise the followers of great declines in prices.

It is not impossible—indeed it is fully believed by thoughtful persons who have given attention to the subject—that the time is rapidly approaching, and is almost here, when the farmer who owns the land will be largely freed from the influences of depressions—when prices of farm products will be, at least relatively to other commodities, gradually increased. This will

not help the case of any other than the land-owner. It will be accompanied by increased competition for the use of farms by renters, and, as to the aggregate number of people engaged in agriculture at the dawning of the era, may bring as much hardship as blessing.

NOT TOO AMBITIOUS.

There has been some inquiry as to the extent of the ambition of the State Board of Agriculture, and some comment in the same connection on the appearance of a bill to be introduced in the Legislature appropriating \$100,000 to be expended under the direction of this board in the interest of irrigation, but without giving details of the purposes for which the money shall be expended. It should be stated, in justice to the board, that so far as appears it is taking no part in the several efforts to consolidate under one official head and in charge of the State Board of Agriculture the various bureaus, both existent and proposed, which have to do with agriculture. That such consolidation, if it can be properly made, is desirable, should go without saying. But the efforts to that end have their inception and derive their force from without, rather than from within, the board, whose chief officer, the Secretary, has persistently refused to assist even in formulating any bill's looking towards the extension of his work and responsibilities.

In the matter of the \$100,000 appropriation suggested in a proposed irrigation bill, the amount named seems to have been a mistake. The writer has conversed with several of the gentlemen who were present when the committee passed on the bill, and the view of all is that the sum should not have been more than half as large. No doubt, and quite properly, too, the Legislature will insist on specifying the purposes for which the irrigation, as well as other appropriations, shall be expended. There is little doubt, however, of the wisdom and economy of the irrigationists' plan to have the work done under the auspices and direction of the State Board of Agriculture.

WORTH CAREFUL READING.

On pages 11 and 12 of this week's KANSAS FARMER will be found one of the most thoughtful, instructive, opportune and entertaining contributions ever laid before the readers of this journal. It is a discussion of supply and demand as related to agricultural products—more especially to wheat—in this and the other countries of the commercial world. The paper is a direct reply to some observations by the editor of a prominent agricultural paper, and is from the incisive pen of a Kansas farmer who farms, and who could doubtless have received a remunerative check for it, had he chosen to send it to a leading New York daily for which our correspondent is a frequent editorial writer.

The array of facts presented, the careful yet vigorous handling they receive, the systematic arrangement, the perspicuous, easily-understood and impressive treatment of this subject, whose importance to farmers cannot be overestimated, make this an article to be carefully read and as carefully preserved for reference. The only objection to the paper is its length, and yet, after a careful reading, the editor, who is somewhat of an expert in the use of the "blue pencil," finds not a sentence, not a line, not a word to be omitted.

Not unlikely some, perhaps many, will disagree with Mr. Davis in some respects. But as a statistician he is most conscientious, most accurate in the ascertainment and in the statement of facts, so that the most searching criticism will leave these unshaken. It will also be conceded that his reasoning is careful, able and conclusive, and that his deductions are made with due regard to variations of production from year to year.

The farmer who familiarizes himself with the facts and thought of this article will feel that he is, better than before, prepared to consider the larger problems which confront him in his business.

ORGANIZATION OF THE HOUSE.

The Kansas Legislature met at noon yesterday, January 8. In the House, the Republican caucus nominees for the several officers were selected:

Speaker.....C. E. Lobdell
Speaker pro tem.....J. K. Cubbison
Chief Clerk pro tem.....Frank L. Brown
Assistant Chief Clerk.....L. S. Sears
Sergeant-at-Arms.....A. C. Jordan
Journal Clerk.....T. J. Jackson
Reading Clerk.....C. S. Martin
Doorkeeper.....R. F. Moore
Chief Enrolling Clerk.....Mrs. L. C. Hughes
Docket Clerk.....C. F. Hostetter
Chaplain.....Elder P. T. Rhodes
Postmaster.....Mrs. E. B. Munsey
Temporary Chairman.....J. B. Remington
Temporary Secretary.....C. H. Tucker

The position of greatest importance, on account of the control of legislation, is the Speakership. The gentleman on whom this honor and responsibility falls, Mr. Chas. E. Lobdell, of Dighton, Lane county, is one of the young men of the House and is the first native Kansan ever elected Speaker. He is a man of good address and clearly defined ideas. His experience in the Kansas Legislature has made him familiar with parliamentary law and with the usages and methods of procedure of the body over which he is called to preside. He hails from the arid portion of the State and the friends of irrigation realize that in the Speaker they have an interested friend.

The appointment of the many committees by which legislation is shaped in its details devolves upon the Speaker, who is therefore the most sought for man in Topeka, and will so continue until the chairmanships and other details of the committees shall have been settled.

ELECTRICITY VERSUS THE HORSE.

With derision the horseman has heard of the advances which electricity threatened to make into the domain of the "noble animal" as the companion and servant of man. Not, indeed, until very recently has the breeder and admirer of horses admitted that anything could even partially take their place. But with the general introduction of the electric car where formerly only the horse car was used, thus displacing thousands of horses which were rapidly worn out with their hard and monotonous labor, has come the realization that the horse has a competitor. The effect on prices of horses has recently been estimated in dollars by a prominent Chicago horse dealer, who says:

"With all other branches of trade throughout the land suffering from the severe shock caused by the panic of the previous year; with general prostration and apathy in business; with uncertainty in the legislative enactments of Congress toward a settlement of the long-agitated tariff measures, the horse market at the Union stock yards opened the year 1894 most encouragingly with considerable activity and decided strength. Unlike any other year in its history, the volume of trade and the prices realized in the month of January almost equaled that of March and exceeded either February, April or May, which, taken together, embrace that period when the highest prices are realized and heaviest receipts handled. The low level of prices which prevailed in the last half of 1893 was sharply advanced 10 to 20 per cent., and with some variable fluctuation, to which all speculative articles are subject, remained the greater part of the year steady and firm, and in some particular instances and for special classes was decidedly strong. The elimination from the market of that heretofore large demand for a class known as "streeters," used to operate our street cars, but since superseded by the conversion of the same into electric motive power, has not only caused a shrinkage in value of \$25 a head, but has, by being added to the general-purpose class, created a glut, and as in all such cases a sharp decline followed."

It is not to be forgotten that the electricians who solved the problem of the successful use of electricity in street car service are still diligently at work and have been re-enforced by a vigorous younger set, and that the question of using electricity for many other purposes—possibly some of the purposes of the farm—is in process of solution.

Under such circumstances the wise man will breed high-grade, special-purpose horses, under a realization that in every competition the plug and the generally inferior first give way.

The Kansas State Poultry show is in progress all of this week and is exhibiting some 600 fine birds. The awards have not yet been made but we hope to report them next week.

BANKRUPTCY BILL.

The KANSAS FARMER has received an urgent appeal from a commercial body at Dallas, Texas, soliciting the influence of this journal in favor of the passage by Congress of "the bankruptcy bill." The writer confesses that he don't know much about bankruptcy bills and is anxious to know nothing about bankruptcy itself. But as the writer understands it, such bills have for their object the release of such debtors as come under their provisions from the obligation to completely discharge their debts, the conditions being that a certain proportion of their indebtedness shall be paid, as also some large fees and perquisites to court officials, etc.

It may be urged that since farmers rarely, if ever, come under their provisions, they can have no objection to such bills, and ought, as sympathizers with unfortunate fellow-creatures, to help the passage of the bankruptcy bill. But let us see. If the farmer owes money he generally has to pay it and it is not easy for him to understand why other people should be excused. It is understood, also, that these debts represent value which the debtors have received and that if excused from paying the loss must fall upon somebody who has trusted them, and that in the adjustments of business such losses must be made good out of profits made from business done with those who pay, ultimately farmers and other producers who never get bankruptcy benefits. The following sentence is a sample of the urgency of the Commercial club's appeal:

"The influence of your well-known pen and journal is most urgently invoked to speed the passage of this bankruptcy bill, and we beseech you to editorially aid in the consummation so devoutly wished for. The fate of the bill is now imminent and your assistance, we most earnestly hope, will not be delayed."

But under the circumstances it will have to be denied.

WEEDS KILLED BY ELECTRICITY.

The boy on the farm who has inquired of his father what is the good purpose, if any, for which weeds were ever permitted to exist, and who has mentally wrestled with the question of removal without the accustomed sweat of the brow, will be pleased to learn that a new and efficient agent in their destruction without the use of either hoe or plow has lately been brought into use.

It was noticed that when telegraph wires touch the limbs of trees they are gradually killed. Of course it was not the wire that killed the tree, neither the information which proceeded along the wires. But it was the agent used to convey the information—lightning, electricity. It was reasoned that if the very mild current used in telegraphing kills gradually, a more powerful, or, as the boys might say, a "wicked" current should kill quickly.

Now, the railroad man, who was, not unlikely, at one time a farmer's boy, was not thinking of how to kill weeds on the farm, but how to kill those which cause so much trouble and expense along the railroad track, and his device was planned to meet the wants of the railroad work, rather than that of the farmer. Of course the farmer boy would bless him more if he had attended to his weeds first. But once we have learned to cultivate railroad tracks by electricity it need not be long until corn rows and garden beds are attended to in a similar way.

This is how the railroad man did his work, as related in the *Chicago Record*: "A dynamo was mounted on a car and driven from steam taken from the locomotive boiler, and electricity at a pressure of from 8,000 to 24,000 volts was caused to leap from a brush projecting out behind the car down through the vegetation to the roots. Grasses and weeds of every description were instantly killed by the current, and it was found that a train gang with a device of this kind could destroy vegetation at an expense of less than one-twentieth the cost of former methods employed. Extensive machines are being built for general use during the coming season."

It has been suggested that some such method will be available for the destruction of the Russian thistle. It is

not unlikely that these methods will ultimately be the delight of the farmer boy, who, mounted on some suitable device, will ride over the fields after harvest and rejoice at the destruction, root and branch, of every weed before plowing for the next crop.

SUFFRAGE RESUBMISSION.

The suffragists are not by any means all overthrown by the adverse vote of the last election in this State. The question on which they are divided, however, is the one as to whether the present Legislature shall be labored with to immediately resubmit the proposition or whether it may not be better to take a rest and again press the question for at least a partial answer at the next election of members of the Legislature.

Our attention has been called to a vigorous open letter from a Kansas City attorney, Nathan Cree, in which he states clearly the most urgent reasons for immediate resubmission. Space forbids the publication here of the full text of Mr. Cree's letter, but the leading ideas are contained in the following excerpts:

"Almost 100,000 men voted, on the 6th of November, last, against the continuance of the political disfranchisement of one-half of the adult population of the State. In the estimation of those voters, as well as in the estimation of tens of thousands of women, the question of the enfranchisement of woman is one of fundamental right, not to be abandoned or put down.

"A large number of the suffragists feel that work on the true and permanent line of policy had as well be commenced at once. To not do so exposes the suffrage movement to the danger of sinking into a sort of torpid and hopeless condition.

"Some of our best workers, who have the spirit requisite to lead a forlorn hope, will not brook a policy which seems to them like an indefinite postponement of the real work before the friends of woman suffrage. They will not delay the attempt to force the issue. The most sanguine of them can scarcely hope to secure a resubmission this winter; but why not begin to work for it now? Should the amendment be resubmitted now, need we shrink from the task of changing a little more than 17,000 votes in two years? Those who would do so must have little of the enthusiasm and energy necessary to carry to success a great movement; they must have but little confidence in their cause. But as immediate resubmission is not probable, the significance of the demand for it lies in the fact that in no other way—except by such demand—can the friends of woman suffrage evince to the world their fixed determination to advance the banner 'full high,' and to abate no jot nor tittle of heart or hope, and no particle of effort until full success be won!

"The demand for immediate resubmission, therefore, saves the suffrage movement from all danger of a sort of temporary paralysis, and from the risk of relapse into a sort of inanition, for the time being, at least. It is well to make it, and the movement will do good.

"But after the 4th of March next"—at which time the incoming Legislature will take its departure—there will nothing be left to do, but for all to join hands in an effort to bring about resubmission by the Legislature to be chosen in 1896; and we hope that all parties concerned will have the prudence to shape and temper their action with this contingency in view."

[*The term of the Kansas Legislature is fifty days. It may sit longer, but without pay. It convened January 8 and the fifty days will have terminated February 26. The present session of Congress will end March 3.—EDITOR.]

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

The visible supply of wheat at the close of 1894 was 88,561,000 bushels, against 80,228,000 a year ago, but receipts for the last week of the year were less than half of those of the corresponding week the preceding year.

During December and January many of our readers in renewing their subscriptions desire also to send for other periodicals and get them at a combination rate. If such will send us a postal card, asking for price on a given list of papers, we will be pleased to answer, and can furnish subscription to any periodical published in America, even if it is not in our regular clubbing list as advertised in our supplement.

Meteorological Summary for 1894.

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

The year 1894 was distinguished, meteorologically, by its high mean temperature, its high barometer and its low percentage of cloudiness. In all three of these respects it surpassed all preceding years of the record.

Each of the four seasons exceeded its average mean temperature, and the mean temperature of every month in the year, except February, was higher than the average—two unprecedented meteorological facts.

February had the largest single snowfall on our twenty-seven years' record, amounting to sixteen inches.

The fine, open autumn weather extended nearly to Christmas. A Pteris butterfly, fresh from the chrysalis, was captured on the university campus on December 23; and out-of-door building operations were continued until December 26.

The rainfall was six inches below the average, this being the second successive year of deficient precipitation. The wind velocity was above the mean, but no extraordinary gales occurred with damaging effect.

Mean temperature of the year 55.81°, which is 2.89° above the mean of our twenty-seven years' record. The highest temperature was 102.5°, on July 14; the lowest was 14° below zero, on January 24, giving a range of 116.5°. Mean at 7 a. m., 49.23°; at 2 p. m., 65.06°; at 9 p. m., 54.46°.

Mean temperature of the winter months, 31.38°, which is 2.02° above the average winter temperature; of the spring, 57.73°, which is 4.18° above the average; of the summer, 77.79°, which is 2.38° above the average; of the autumn, 56.35°, which is 2.75° above the average.

The warmest month of the year was August, with mean temperature 79.37°; the warmest week was August 8 to 14, mean 86.07°; the warmest day was August 14, mean 87.5°. The mercury reached or exceeded 90° on fifty-two days (fifteen above the average number). Of these fifty-two hot days one was in April, two were in May, ten were in June, fourteen in July, twenty-one in August and four in September.

The coldest month was February, with mean temperature 27.52°; the coldest week was January 22 to 28, with mean 14.05°; the coldest day was January 24, with mean 4.38° below zero. The mercury fell below zero on four days, of which three were in January and one in December.

The last hoar frost of spring was on May 19; the first hoar frost of autumn was on September 19, giving an interval of 123 days, or exactly four months, entirely without frost. This is thirty-one days shorter than the average interval.

The last severe frost of spring was on March 29; the first severe frost of autumn was on October 30, giving an interval of 215 days, or fully seven months without severe frost. The average interval is 200 days. The late May frosts did some damage to early fruits and early potatoes.

The entire rainfall, including melted snow, was 30.01 inches, which is 6.06 inches below the annual average. Either rain or snow, or both, in measurable quantities, fell on eighty-four days—fourteen days less than the average. On fourteen other days rain or snow fell in quantities too small for measurement. The heaviest rain of the year was 3.25 inches on June 24-25. The number of thunder showers was thirty-seven.

The entire depth of snow was twenty-one inches, of which 15 inches fell in January, 16 1/2 inches in February, and three inches in December. This is the exact annual average. Snow fell on twelve days, on six of which the quantity was too small for measurement. The last snow flurry of winter was on February 21; the first snow of autumn was on November 16.

The mean cloudiness of the year was 35.10 per cent., which is 8.60 per cent. below the average. The number of clear days (less than one-third cloudy) was 193; half clear (from one to two-thirds cloudy), 107; cloudy (more than two-thirds), 65. There were forty-eight entirely clear and eighteen entirely cloudy days. The clearest month was October, with a mean of 22.27 per cent.; the cloudiest month was February, mean 46.20 per cent. The percentage of cloudiness at 7 a. m. was 38.24; at 2 p. m., 37.87; at 9 p. m., 29.19. There were sixteen fogs during the year, which is three more than the average.

During the year, three observations daily, the wind was from the southwest 310 times, north 178 times, south 161 times, northwest 128 times, southeast 119 times, east 86 times, northeast 69 times, west 44 times. The south winds (including southwest, south and southeast) outnumbered the north (including northwest, north and northeast) in a ratio of 590 to 375.

The number of miles traveled by the wind during the year was 136,530, which is 1,606 miles above the annual average. This gives a mean daily velocity of 374.08 miles, and a mean hourly velocity of 15.59 miles. The highest velocity was sixty miles an

hour from 3 to 4 p. m. February 17. The highest daily velocity was 880 miles, on the 28th of March; the highest monthly velocity was 15,708 miles, in March. The three windiest months were March, April and December; the three calmest months were June, July and August. The average velocity at 7 a. m. was 14.24 miles; at 2 p. m., 17.35 miles; at 9 p. m., 15.09 miles.

Mean height of barometer column, 29,153 inches, which is 0.044 inch above the annual average. Mean at 7 a. m., 29,169 inches; at 2 p. m., 29,139 inches; at 9 p. m., 29,150 inches; maximum, 29,887 inches, on December 27; minimum, 28,412 inches on February 9; yearly range, 1,475 inches. The highest monthly mean was 29,252 inches, in December; the lowest was 29,068 inches, in October. The barometer observations are corrected for temperature and instrumental error only, the altitude being 874 feet above the level of the sea.

Publications of United States Department of Agriculture for December.

[All applications for the publications of this department should be addressed to the Secretary of Agriculture, Washington, D. C.]

Instructions to Special River Observers of the Weather Bureau. Pp. 49, figs. 7.

Temperatures Injurious to Food Products in Storage and During Transportation, and Methods of Protection from the Same. Pp. 20. (Bulletin No. 13, Weather Bureau.)

Instructions for Obtaining and Transcribing Records from Recording Instruments. Pp. 40, figs. 3. (Circular A, Instrument Room (revised edition), Weather Bureau.)

Proceedings of the National Road Conference, held at Asbury Park, N. J., July 5 and 6, 1894. Pp. 63, figs. 3. (Bulletin No. 10, Office of Road Inquiry.)

Experiment Station Record, Vol. VI, No. 3. Pp. v, 175-254. (Office of Experiment Stations.) Contains editorial notes; report of the Convention of Association of Official Agricultural Chemists, 1894; recent work in agricultural science; notes.

An Act to Provide for the Construction of Roads in New York. Pp. 3. (Circular No. 15, Office of Road Inquiry.) This act will be of interest to legislators, as it is considered the best development of the State-aid plan of road construction.

Highway Taxation: Comparative Results of Labor and Money Systems. Pp. 5. (Circular No. 16, Office of Road Inquiry.) Contains extracts of letters from town clerks of New York on the above subject.

Hog Cholera and Swine Plague. Pp. 16. (Farmers' Bulletin No. 24, Bureau of Animal Industry.) It is the object of this bulletin to tell the farmer how to identify these diseases, how to treat them and how to prevent them.

Proceedings of the Eleventh Annual Convention of the Association of Official Agricultural Chemists, held at Washington, D. C., August 23, 24 and 25, 1894. Pp. 403. (Bulletin No. 43, Division of Chemistry.)

Monthly Weather Review—September, 1894. Pp. 351-392, charts 6.

Charts of the Weather Bureau. (Size 19 x 24 inches.)—Weather-Crop Bulletin (series of 1894), reporting temperature and rainfall with special reference to their effect on crops. (No. 31, for the month ending November 30, 1894.) Semi-daily Weather Map, showing weather conditions throughout the United States and giving forecasts of probable changes. Snow charts, showing depth of snow on ground at 8 p. m. on Monday, December 3, 10, 17 and 24, 1894.

REPRINTS.

Report of the Secretary of Agriculture for 1894.—Preliminary. Pp. 75, fig. 1.—The Secretary discusses foreign markets for American farm products, and farm products and the money they bring; reviews of the work of the several bureaus and divisions of the Department, giving a table of appropriations and expenditures from 1878 to 1892, inclusive.

Proceedings of the Seventh Annual Convention of the Association of Official Agricultural Chemists, held at the United States National Museum, August 28, 29 and 30, 1890. Pp. 238, figs. 21. (Bulletin No. 28, Division of Chemistry.)

Proceedings of the Ninth Annual Convention of the Association of Official Agricultural Chemists, held at the National Museum, August 25, 26 and 27, 1892. Pp. xvii, 243. Bulletin No. 35, Division of Chemistry.)

Experiments with Sugar Beets in 1890. Pp. 93. (Bulletin No. 30, Division of Chemistry.)

Experiments with Sugar Beets in 1892. Pp. 74. (Bulletin No. 36, Division of Chemistry.)

The Journal of Mycology, Vol. VII, No. 4. Pp. v, 333-478, pls. 22-28. Contents: Treatment of pear-leaf blight in the orchard (illustrated); experiments with fungicides to prevent leaf-blight of nursery stock; prune rust (illustrated); preliminary notice of a fungous parasite on *Alerodes citri*; an improved method of making Bordeaux mixture; a new method of treating grain by the Jensen process for the prevention of smut; field notes, 1892; reviews of recent literature; errata to index to literature; errata; index to Vol. VII.

Culture of the Sugar Beet. Pp. 24, figs. 9. (Farmers' Bulletin No. 3, Division of Chemistry.)

Experiments with Sugar Beets in 1893. Pp. 59. Bulletin No. 39, Division of Chemistry.)

Horticulture.

FROM OUR STATE FORESTRY COMMISSIONER.

EDITOR KANSAS FARMER:—Finding that the report of the forestry department will not be forthcoming from the State Printer until a new appropriation can be made, I beg for space in your valuable paper to address its many progressive readers whom I can hardly hope to reach with my report until too late for them to take a hand in securing such legislation as they may think is for the best interest of the people of the State.

The first thirteen pages of the report, of which I have received a proof, contain a detailed report of the forestry work, also the financial report of the department for the last two years. The remainder of the report will probably cover about twenty pages. It deals with the different forestry problems in Kansas, mentioning some that can only be solved by carefully-conducted experiments; briefly outlines different plans for irrigating trees, and recommends the appropriations for the next two years. It is a great disappointment not to be able to furnish the report immediately to the members of both houses, and all others who desire them. However, we must make the best of it, and will very briefly mention the appropriations recommended, and why, leaving the balance of the report for future delivery.

Believing the time had come when the people of more than one-half of Kansas realized that without irrigation we cannot successfully grow forests, orchards, gardens and many other crops, only in exceptionally good years, I have recommended the establishment of irrigation plants at both stations. There are problems in connection with the handling of water, and more especially from deep wells, which, in my judgment, should be solved by the State, and the solution of the problems published, that the people may be saved from mistakes, discouragement and needless expense. The location of these two stations is on the upland, near the 100th meridian, and if they are maintained for two more years as forestry stations they will belong to the State.

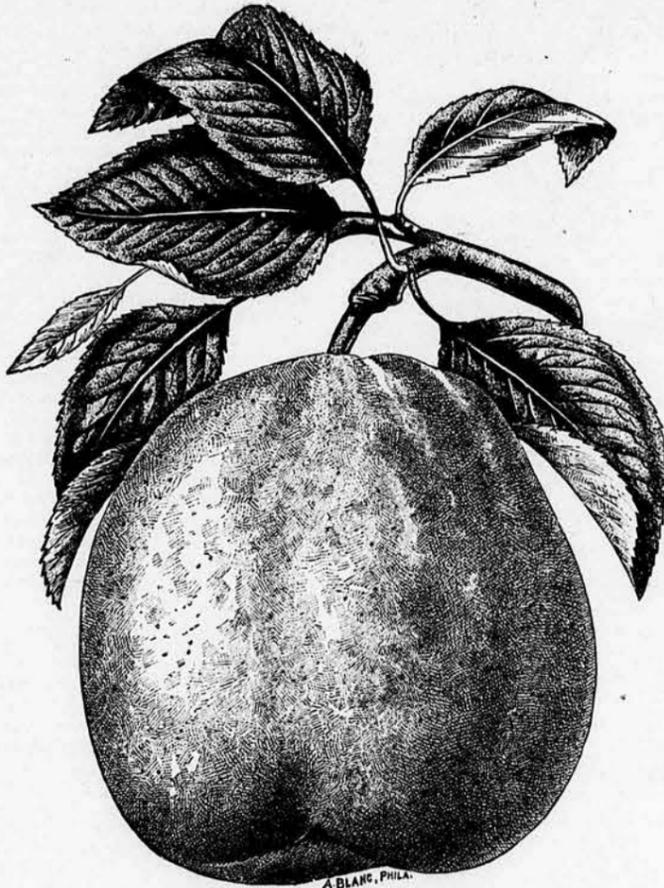
In the mountain States, where water is more abundant, they waste large quantities; in Kansas, economy of water and its most beneficial use are of vast importance. Comparative tests of growing different kinds of forest and fruit trees with and without irrigation, also different quantities of water used, and its application in different ways and with a different space of time intervening; these and many other experiments, including garden and farm crops, could be made at the stations by dividing the experiments between the two. Experiments in horticulture on the uplands will be especially desirable, as their being more free from frost will eventually cause them to lead in the production of fruit.

For the establishment of these two plants I have recommended the appropriation of \$800, and the same amount for the extra work during the rest of the fiscal year ending June 30, 1895. For the year ending June 30, 1896, for labor and incidentals of regular forestry work, \$3,000, and for carrying on experiments by and with irrigation, \$1,500, and \$600 for trees, seeds and cuttings, and the same amounts for the year following. The labor and incidental fund is the same as was appropriated four years ago and \$1,000 less than two years ago. There is no question but what \$1,000 for each station is insufficient, and that \$3,000 for the two is not more than sufficient. For Commissioner, \$1,200, the same as formerly. For the last four years it has been \$600. We surely cannot expect to find a man that can fill the place with credit to himself and to the State for less than \$1,200. I venture the assertion that there are a great many holding positions in the State of less importance who are drawing much higher salaries than that. He must be something of an expert in the two lines or he cannot fill the place. The

chances are for the future, as for the past, that a man of limited experience and doubtful adaptability would be a very poor investment for the State at any price. The efficiency of the department will hinge on the efficiency of the Commissioner. I trust that those who are interested in the future of our State will express their opinions and wishes through the public press, and to their legislators through personal communications. Very respectfully submitted. E. D. WHEELER. Ogallah, Kas., January 1, 1895.

A meeting for the purpose of organizing a State Forestry Association will be held in the rooms of the State Board of Railroad Commissioners, at the capitol, Topeka, on this, Wednesday afternoon, January 9. It is requested that all parties interested in the forestry movement endeavor to be present and assist in the organization.

The Bushberg catalogue, a grape manual of information on the grape, has made its appearance for 1895. It is a valuable book and should be in the hands of every grape-grower. It is not probable that most Kansans will care for the brief directions it contains for wine-making, but its general information as to the history, classification,



THE RUTTER PEAR—SEE DESCRIPTION.

cultivation, hybridization and general management of this valuable fruit cannot well be dispensed with by the owner of even a few vines. Published by Bush & Son & Meissner, Bushberg, Missouri.

Stock Good, Wheat Poor.

EDITOR KANSAS FARMER:—Enclosed please note \$1 on subscription for KANSAS FARMER. It is the first out of some dozen papers and periodicals that we search for when we get our mail (once a week). We are on a ranch, you see, fifteen miles from town.

Cattle looking exceedingly well, wheat exceedingly poor. Irrigation is being agitated and prepared for along some of the streams—Medicine river and others. Judge Emery was with us Saturday, the 22d, and gave one of his characteristic talks on irrigation. The Judge, with his head thrown back and eyes closed, has "visions." One is that the whole Arkansas valley will be "one garden spot" in another generation. It is highly probable, and quite possible. The water is there in the sand and our pumps are keeping up to the demand that is being made upon them, namely, "more water."

A. L. BENNETT. Greensburg, Kas.

Attend the Wichita Commercial College for a thorough business training. Y. M. C. A. building.

POTATO MACHINERY

We manufacture the celebrated Aspinwall Potato Planter, Aspinwall Potato Cutter, Aspinwall Paris Green Sprinkler, etc. Every machine warranted. These machines greatly reduce the cost of raising potatoes. Send for Free Illustrated Catalogue. ASPINWALL MANUFACTURING CO., 40 Sabin St., Jackson, Mich.

The Apiary.

The Apiary for January.

EDITOR KANSAS FARMER:—This month, where bees are on their summer stands, the bee-keeper should keep a sharp look-out about his hives and see that the entrance to the hive is not closed by snow and ice. If snow is permitted to drift in banks about the hives, the entrance is likely to be covered by it; and in turn, the warmth from the bees or sun, or both acting together, is quite liable to melt the snow about the entrance through the day, and at night it not infrequently freezes and ice closes the hive. This is liable, and, in fact, sometimes does cause the bees to suffocate. Also, keep dead bees cleared off the bottom-board and away from the entrance. It is also well to see that mice do not work their

large and uniform, nearly coreless, of fine buttery flavor. Tree a strong, vigorous grower. We take pleasure in saying to the readers of the FARMER that we believe you can plant this sort and be assured of its not disappointing you. Its lateness assures a good market, and it is of pure American blood, originating in Pennsylvania. The Mount Hope nurseries were the first to get trees of the now popular Crosby peach west of the Mississippi river. This year, for the first time, they offer the new peach, Bokara, that has stood a temperature of 28° below zero and fruited the following season. They know a good thing when they see it.

Their advertisement appears in this number. If any of our readers wish to know more of these and other fruits, let them address the Mount Hope Nurseries, Lawrence, Kas.

We have on hand three "Mary Jane Dishwashers." The price is \$3 each. But to close out we will send one dishwasher free to any one sending us five subscriptions and \$5.

ONLY 10% ABOVE ACTUAL COST.
We are the largest and best equipped of our kind in the West. We have a large stock of all styles of baby carriages, tricycles, and other children's toys. We are now offering a special sale on our baby carriages. They are made of the best material and are very durable. They are also very light and easy to push. We have a large stock of all styles of baby carriages, tricycles, and other children's toys. We are now offering a special sale on our baby carriages. They are made of the best material and are very durable. They are also very light and easy to push. We have a large stock of all styles of baby carriages, tricycles, and other children's toys. We are now offering a special sale on our baby carriages. They are made of the best material and are very durable. They are also very light and easy to push.

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

A. H. GRIEBA, Prop'r Kansas Home Nurseries, Lawrence, Kas., grows trees for commercial and family orchards—the Kansas Raspberry, Blackberries, standard and new Strawberries—also shade and evergreen trees adapted to the West.

Something New in Musk-melons

The White Persian, the largest and best flavored on earth. Nothing better to be desired. Write for prices and particulars to Larkin Commission Co., Wichita, Kas. Mention FARMER.

Mount Hope Nurseries.

27th year. Have for sale a complete assortment of fruit trees, especially of the leading commercial sorts. Also making a specialty of extra hardy peaches. Crosby, Bokara, etc., 28 deg. below zero and a crop. For circulars and prices address the proprietors.

A. C. GREISA & BRO. Lawrence, Kas.

Lee's Summit Star Nurseries.

ESTABLISHED IN 1869.

Choice fruit and ornamental trees, including small fruits, evergreens, roses and shrubbery. A specialty of supplying trees for commercial orchards. Also shade trees. Plant while you can get the best trees at the lowest prices. Send for catalogue. Address (mentioning this paper) M. BUTTERFIELD, - Lee's Summit, Mo.

BONNER SPRINGS NURSERIES

We shall offer in the spring, 1895, at surprisingly low prices, a large stock of apple trees—mostly Gano, Ben Davis and Jonathan—the apples. Also small fruits of all kinds. Greenhouse bedding plants and bulbs for spring planting; asparagus, evergreens and a general collection of nursery stock, all being of the leading and most popular kinds. Address H. H. KERN, Manager, Bonner Springs, Kas.

ESTABLISHED IN 1873.

WILLIS NURSERIES.

Contain a general assortment of choice fruit trees and other nursery stock, which we offer for sale in lots to suit. Our prices are low—stock and packing the very best. Write for free catalogue and always mention name of this paper. A special lot of choice well-grown two-year-old apple trees for sale. Address A. WILLIS, Ottawa, Kansas.

THE BINGAMAN PRUNER

The best Pruner ever made. Will cut any limb not exceeding 1 1/4 inches in diameter. One man can do more work with it than five men can with any other. Agents wanted in every State in the Union. Address—ORCHARD PRUNER CO., OTTAWA, KANSAS.

In writing to advertisers please state that saw their advertisement in the KANSAS FARMER.

way into the hive and secure a winter's lodging and board at the expense of the colony. They are fond of both honey and beeswax. I have known them to build large nests and cut away large quantities of comb and honey. Also, in case of protracted cold weather, see that the bees are not frost-bound, and on this account starve with an abundant supply of honey in the hive but at remote points at the sides or end of the hive.

G. BOHRER.

The Rutter Pear.

[See illustration.]

A few years ago the agricultural papers of the country were publishing accounts of the Idaho pear. It was said of it that it would not blight, was large, quality best, etc. Progressive nurserymen invested in it, hoping that here was another pear that they could recommend with a few others of established merit. But what a disappointment. The verdict is, "no good" for these parts. About ten years ago there was sent to the Mount Hope nurseries a few trees of the Rutter pear. They came into bearing at three years of age; since then have never missed a crop, some years bearing three bushels to the tree. They have been admired by all who have seen them, Mr. G. C. Brackett, Secretary of the State Horticultural Society, at once planting 100 trees of them. The tree is as free from blight as the Seckel, Duchess or Keiffer. This is saying a great deal and about all that can be expected of a pear. The season is last of August to middle of September. Fruit

SUPPLY AND DEMAND.

Some Fallacies of a Western Agricultural Journal.

EDITOR KANSAS FARMER:—In a recent issue of one of your Western contemporaries appears an editorial in which it is stated, in substance, that:

"Wheat can be grown pretty much all over the world; that the limits of its cultivation have nowhere been nearly reached; stimulating Russia with any considerable increase of price it could double its present production; that Argentina will probably double its production without any stimulation; give Great Britain the prices of twenty years ago and it will feed itself, and give this country encouragement enough in the way of prices, and so far as wheat is concerned, it can feed the world. In short, wheat can be grown far in excess of present production whenever it becomes worth while. On the other hand, so far as mere area is concerned the limits of corn production have been pretty nearly reached unless Australia shall give us a surprise in this respect."

Possibly it would be practicable to condense more erroneous statements and implications in the space occupied by your contemporary, but, fortunately for the cultivators whom this journal assumes to instruct, such a feat is rarely accomplished.

Instead of its being a fact that wheat can be grown nearly all over the world, its production is limited to those regions in each hemisphere lying between the 30th and 50th parallels, and in Argentina the limits are narrowed to the 30th and 40th parallels, as destructive frosts there prevent its profitable culture south of latitude 38, and, with the exception of Chile and unimportant areas on the slopes of the Andes, all that vast South American region west of the 64th meridian is so arid (the rainfall averaging less than eight inches), that wheat culture without irrigation is impossible, and the water is unavailable to irrigate 2 per cent. of these enormous areas. So much of Argentina as is, even potentially, wheat-growing lies between the Atlantic and the 64th meridian, and between the 30th and 38th parallels, or a block of land 700 miles from north to south by 300 miles from east to west. That is, the Argentine acres where wheat can possibly be grown number two and one-half times as many as do those of Kansas susceptible of being profitably employed in the production of such grain. Uruguay has about the productive power, potentially, of Nebraska, and Chile has, after having been an exporter of wheat for nearly fifty years, been able to devote but 1,000,000 acres to the wheat crop. Chilean wheat production is declining, the area shrinking by reason of the necessity of meeting the requirements of an increasing home population for other products.

While there is little doubt that Argentina will greatly increase its production of the bread-making grain, yet when the arable areas of that country shall have been brought into production and crop distribution proportioned to symmetrical national development, it is very doubtful if average annual exports of wheat can be double those of the last twelve months, as climatic vicissitudes are even greater than in Kansas. Should the world depend upon Argentina for its bread, it is not unlikely to go supperless to bed for years in succession. The aggregate product from the wheat fields of Kansas during the three years ending with 1893 (small as was our crop in that year), equalled the three concurrent crops of Argentina.

Of the aggregate area of South America less than 10 per cent. is, even potentially, wheat-bearing.

Of the world's greatest continent—Africa—only narrow belts at each extremity are suited, in any degree, to wheat culture, although it is said that wheat thrives on small mountain areas in the tropics. To-day Africa, as a whole, is an importer of wheat and is ever likely to remain such. Wheat will not ripen where the banana grows. Of maize, however, that continent is the greatest grower and consumer. While climatic conditions preclude either its storage or extended transport it is produced in the greatest profusion over areas that, in the aggregate, exceed all other maize-growing lands of the world. Even South America has four acres of land adapted to maize for every

acre of wheat land, and nearly all of Queensland, and much of other Australian provinces, are excellent corn lands, as is so much of India and other South Asiatic areas.

So far as Russia is concerned, it is altogether improbable that prices will, during the coming twenty years, be high enough to greatly stimulate production in such a manner as to add materially to the exportable surplus of wheat. Outside of Siberia and the arid deserts of Asia, Russian wheat districts are very fully occupied; neither the majority of the holdings nor the character of the Russian cultivator is such as to indicate the adoption of modern methods; the land tenure is such as to incite the peasant to land-impoverishing modes of culture; the increase of population in the village communes is so great as to necessitate frequent subdivision of holdings already too small to afford comfortable subsistence for small families; the inevitable result is the progressive impoverishment of both land and the land's occupant. Moreover, the Russian population increases at a greater rate than any other in Europe, and much faster than does or can the area under cultivation. So complete has been the occupancy of all the better lands that as long ago as 1880 it was found necessary to reduce the areas under grain in many of the most fertile and thickly-inhabited provinces in order to grow the required forage; hence we may safely assume that while a million and a quarter new Russian mouths are being opened yearly it will be impracticable to add much to the exportable Russian surplus. So far as concerns Siberia, it is, to all intents and purposes, one great stretch of frozen tundras, quaking morasses and sterile mountain tracts, the whole cultivable area little exceeding that of Kansas. In western Siberia is to be found about 25,000,000 acres of rich black earth, and, practically, this constitutes about all of arable Siberia. Russia has been colonizing Siberia since its conquest by Yermak, and it now contains some 4,500,000 to 5,000,000 people, and it is about as much as western Siberia can do to feed those of the eastern districts. As a factor in the world's food supply, even potentially, Siberia is of vastly less importance than any two States in the Missouri valley, and will so remain.

The most astounding exhibit made by your contemporary, probably the most astounding possible in this connection, is that wherein we are assured that but—

"Give Great Britain the prices of twenty years ago and it will feed itself."

If Great Britain, with but 730,000 acres more than twenty years ago under all products, has now the ability to feed itself—no matter what the price—why did it not do it when the prices of twenty years ago were current? Were not landlords and tenant farmers then just as eager for pounds, shillings and pence as now? Farm labor was enough cheaper then to more than offset the diminution in other costs of production; and yet we know, or any one can know, and the editor of an agricultural journal ought to know, that in 1874 Great Britain, even with the aid of Ireland, did not much more than half feed itself, at least so far as acre product was concerned.

The "Statistical Abstract for the United Kingdom" for the year 1874 makes it manifest that in that year 92,000,000 bushels of wheat were imported in the form of grain and flour; that the imports of barley equalled some 26,000,000 bushels; those of oats 39,000,000 bushels, while distant regions furnished 35,000,000 bushels of maize, 1,000,000 bushels of rye, some 8,000,000 bushels of pulse, and nearly 8,000,000 bushels of potatoes. Had these quantities been grown at home, even with the exceptionally high acreage yields of British fields, they would have employed 5,700,000 English acres. In addition there was, in 1874, imported meats, animals and dairy products, equivalent to the average product from 5,300,000 other English acres. In 1874 Great Britain had 9,952,000 acres under grain, pulse and potatoes, and the United Kingdom, as a whole, had some

12,740,000 acres under such crops; and yet imported, in the form of grains, pulse, potatoes and animal products the equivalent of the annual produce of quite 11,000,000 average English acres. That is, of the staples grown in the temperate zones so long ago as 1874, Great Britain imported nearly the half of what was consumed, so that it is seen that with the prices of twenty years ago Great Britain could be stimulated to grow but little more than half the food consumed; and not half, if we take into consideration rice, sugar and other tropical products; nor is it possible that conditions should obtain which would stimulate the Briton to grow all the food he requires, or even all the grain.

While the production of wheat, barley and pulse has greatly diminished in Great Britain since 1874—when the wheat acreage was nearly at its maximum—there are few or no idle acres. Many of the acres employed in growing grain in 1874, when the population was about 20 per cent. less than now, have necessarily been devoted to the growth of products required at home that are neither as cheaply nor as conveniently transported as are the products they have displaced. That is, Great Britain has changed its crop distribution in order to meet home requirements for products whose character precludes long and costly transport, just as we have changed our crop distribution, and as is being changed the crop distribution of every country whose lands are more or less completely occupied.

The changes in the distribution of British crop areas have, since 1874, been as follows:

	Crop Acreage, 1874.	Crop Acreage, 1894.	Increase.	Decrease.
Wheat.....	3,800,000	1,900,000	.....	1,900,000
Barley.....	2,600,000	2,200,000	.....	400,000
Oats.....	41,400,000	4,500,000	400,000	.....
Rye, beans and peas.....	940,000	570,000	.....	370,000
Potatoes.....	1,400,000	1,800,000	.....	400,000
Turnips, etc.....	3,500,000	3,200,000	.....	300,000
Hay and hops.....	180,000	130,000	.....	50,000
Fallows and uncropped.....	670,000	480,000	.....	190,000
Meadow.....	23,900,000	24,700,000	8,540,000	.....
Pasture.....	.....	.....	.....	.....
Totals.....	47,050,000	47,780,000	3,640,000	3,210,000

The productive area of the United Kingdom has increased some 730,000 acres in twenty years, and the added acres, as well as 3,210,000 acres formerly devoted to the production of grain, pulse, etc., have been diverted to the growth of such forage crops as oats and grass. British changes in crop distribution are seen to proceed upon the same lines, and, we may assume, results from like causes, as have changes of crop distribution in the United States and all the countries of western Europe. That is, it has been found necessary to increase the supply of forage and of such perishable products as milk, cream and the more delicate fruits and vegetables.

How, in the name of common sense, can Britain feed itself when every available acre is already occupied in growing products that are indispensable? Your contemporary's proposition lacks even the merit of that of a former prominent official of the Department of Agriculture, who gravely assured us that Great Britain would cease to import our grain and animal products when the Briton had converted his parks and game preserves into grain fields. This astute official, as well as the editor of your contemporary—who may have seen this official dicta, and, being official, believed it was correct—has forgotten to inform us that the total areas of land and water in the United Kingdom aggregate but 77,800,000 acres, and that of this 48,047,000 are actually employed in agriculture, leaving but 29,753,000 acres for towns, roads, lakes, canals, streams,

parks, buildings and game preserves. We may assume that half this will always be unavailable for culture, either because of its use as highways, for building sites, or because of its being but water, in which case half the people of Britain must derive their sustenance from less than 15,000,000 acres.

But your contemporary puts on the cap-sheaf when it assures us that given sufficient encouragement in the way of prices the United States could feed the world with wheat, at least.

Including only those of European lineage, the world's bread-eaters number some 489,400,000, who annually consume, and have for more than ten years, the product of some 188,000,000 acres of wheat. Of this enormous aggregate no more than 35,000,000 acres are now to be found in the United States, while our entire cultivated area, devoted to staples, aggregated less than 220,000,000 acres. That is, if we are to provide the wheat which your contemporary says we can, we must devote to its production all but 18 per cent. of the cultivated acreage; and our people, each of whom now consume the product of three acres of staples annually, must subsist from the product of about half an acre each or proceed at once to irrigate and reduce to cultivation some 160,000,000 acres of the arid plains and mountain plateaus.

As a matter of fact, we have found it necessary in recent years, owing to the exhaustion of the arable areas, in order to provide the forage, fruits, dairy and animal products required by a population increasing by aggregates of 1,400,000 yearly, to reduce the areas devoted to both wheat and corn. In 1889 the corn fields employed 78,300,000 acres, or some 2,000,000 acres more than we have planted in any subsequent year, and the wheat harvest of 1891 was made from 6,600,000 more acres than was that of 1894. In the last ten years we have added about 22,000,000 acres to the cultivated area, and all these additions, save 1,000,000 acres, have been added to the meadows. Such additions as have been made to the cotton fields and those producing oats, potatoes and the minor grains required by the home population, have been taken bodily from the wheat and corn fields.

Adding at least 1,400,000 population units yearly, we require to add for each individual, providing domestic consumption shall be maintained at the same standard as heretofore, one and one-tenth acre of corn; forty-three hundredths of an acre of wheat; a like quantity of land employed in growing oats; no less than eighty-three hundredths of an acre of meadow; one-tenth of an acre of cotton, and fifteen hundredths of an acre under rye, barley, buckwheat, tobacco and potatoes. This for purely domestic consumption. That is, adding 1,400,000 units to the population yearly, our annual requirements augment in the equivalent of average acreage yields from more than 4,200,000 acres, and adding less than 800,000 acres to the areas under staple crops in each of recent years, we must lower the standard of living or yearly divert from the growth of exportable staples no less than 3,400,000 acres. With a population that for the mean of the 1895-96 harvest year will number at least 70,000,000, and that increases by an annual aggregate of 1,400,000, and having not more than 200,000,000 acres employed in growing food and forage, it is obvious that with no better than average acreage yields the area now devoted to the production of food for export will soon be absorbed by home requirements and we shall cease to contribute materially to the food supply of other nations unless our people speedily adopt a much lower standard of living.

That the world can, without the most serious inconvenience and a great elevation of the level of prices, dispense with American wheat (and other foods) seems wholly improbable in view of the fact that during the last eleven years the bread-eating populations have augmented by additions aggregating more than 60,000,000. Such augmentation implies an increase of more than 240,000,000 bushels in the world's annual wheat requirements, or the average net product from 23,000,000

acres yearly. Yet during ten years the world's wheat-bearing lands have, as appears from the subjoined table derived from official sources where such exist, increased barely 1,260,000 acres:

additions annually made to the world's requirements by the increase of population, so great was the yield per acre—world yield—in 1892, in excess of the ascertained average of thirteen years,

	1884. Wheat Acreage.	1894. Wheat Acreage.	Increase.	Decrease.
France.....	17,430,000	17,220,000		210,000
All European Russia.....	35,050,000	35,500,000	450,000	
Italy.....	10,980,000	11,120,000	140,000	
Austria-Hungary, Croatia.....	9,930,000	10,600,000	670,000	
Germany.....	4,740,000	4,900,000	160,000	
United Kingdom.....	2,750,000	1,900,000		850,000
Spain.....	7,100,000	7,000,000		100,000
Roumania.....	2,900,000	3,440,000	540,000	
Turkey in Europe.....	2,300,000	2,380,000	80,000	
Bulgaria and Roumelia.....	970,000	1,370,000	400,000	
Belgium.....	680,000	680,000		
Holland.....	2,000,000	210,000		10,000
Portugal.....	690,000	630,000		
Servia.....	520,000	600,000	80,000	
Denmark.....	130,000	110,000		20,000
Sweden and Norway.....	160,000	180,000	20,000	
Greece.....	540,000	600,000	60,000	
Switzerland.....	180,000	150,000		10,000
Bosnia, Herzegovina, etc.....	400,000	390,000		10,000
All Europe.....	97,570,000	98,980,000	2,420,000	1,210,000
United States.....	39,490,000	33,390,000		6,100,000
Canada.....	2,380,000	2,480,000	100,000	
Mexico.....	1,200,000	1,300,000	100,000	
Australasia.....	3,660,000	4,170,000	510,000	
India.....	26,470,000	27,380,000	910,000	
Japan.....	1,000,000	1,000,000		
Southern Asia.....	500,000	5,700,000	5,200,000	
Algeria.....	3,100,000	3,000,000		100,000
Egypt.....	1,290,000	1,250,000		40,000
Tun's.....	1,200,000	1,200,000		
South Africa.....	350,000	400,000	50,000	
Argentina.....	1,350,000	5,350,000	4,000,000	
Chile.....	1,000,000	900,000		100,000
Uruguay.....	250,000	500,000	250,000	
Asiatic Russia.....	2,100,000	2,300,000	200,000	
World totals.....	188,000,000	189,270,000	8,890,000	7,630,000

As annual average unit requirements of the bread-eating populations have, during the last thirteen years, equalled the annual average net product of 0.42 of an acre of wheat, it follows that with such peoples numbering but 429,000,000 in 1884 a wheat acreage of 188,000,000 was some eight million acres in excess of current requirements whenever the yield was an average one or above an average. With bread-eating populations aggregating nearly 490,000,000 for the 1895-96 harvest year, and with a world wheat-bearing area of no more than 189,300,000 acres, it follows that if the yield shall not exceed the world average of the last thirteen years (about 12.5 bushels an acre) and consumption per capita equals that obtaining during the same period, then the world's wheat-bearing acreage will be found deficient by as much as 16,000,000. As each year's addition to the populations of European lineage implies additional requirements equalling the net average product from 2,500,000 acres, the editor of your contemporary has—without attempting the work of feeding the world—assumed the pleasant task of telling his readers where, in the United States, can be added the lacking trifle of 16,000,000 acres, and where we can, after that, yearly add some 2,500,000 acres to our wheat-bearing lands. While he has his hand in he might tell us where we can annually find the required 1,500,000 new acres required for corn, and the other 1,160,000 new acres which must be added to the meadows of the United States in order to furnish the new population with a supply of maize and hay equaling that consumed by the older settlers.

Taking the world as a whole, acre yields of wheat have been above an average during each of the last four years (the excess of the four years exceeding 500,000,000 bushels), just as world yields were below an average for each of the three years from 1878 to 1880 inclusive, and just as they were below an average in 1883, 1885, 1886 and 1889.

During all these years, up to and including 1887, the world's wheat acreage was largely excessive. This acreage excess was the primary cause of the gradual fall in price, and resulted in the accumulation of vast stores of grain that carried the bread-eating world safely to the 1890-91 harvest year, when, with the practical exhaustion of the reserves, the price advanced materially. While the defective acreage of 1891 told somewhat on the price, the yield per acre in that year was so much above the average (six-tenths of a bushel, or an aggregate of some 115,000,000 bushels) as to provide an adequate supply and admit of a partial reconstitution of the great reserve of previous years. Notwithstanding the

that the reserves again assumed such proportions that it has been the work of three years to reduce them, and it will probably require another year to quite dissipate them. Happily, for the farmer, population has now so increased that these great stores are rapidly going into consumption, and as there is not the most remote probability of the world's wheat acreage ever again being excessive we may assume that the existing acreage deficit, a deficit that annually increases by quite 2,000,000 acres, assures the farmer that he is now seeing the last very cheap wheat. This by reason of the fact that with no more than average yields from every acre of the world's wheat-bearing lands in 1895 the aggregate product will be 160,000,000 bushels less than the world's requirements for the harvest year. Existing stores of wheat may supplement such yield in such a manner as to prevent dearth and high prices for twelve months after harvest, but a second crop no more than an average in (world) acreage yield would result in scant supplies and high prices. The inexorable law of averages assures such a result in some nearby year.

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If You Will Cut This Out and Send It with \$1 money order to the John A. Salzer Seed Company, La Crosse, Wis., you will get free thirty-five packages earliest vegetable seeds and their great seed catalogue, or for 6 cents postage a package of FOURTEEN-DAY PARIS RADISH SEED and their seed catalogue.

See Chicago Sewing Machine Co.'s advertisement in next week's issue.

Forestry Notice.

Those wishing to receive a share of the free distribution of seedling forest trees by the State Forestry Department can make application at any time previous to March 1, 1895. The report of this department is now in the hands of the State Printer and will be furnished applicants as soon as printed. Owing to a lack of sufficient printing fund they may not be finished before the last of January. County papers please copy.

E. D. WHEELER, Commissioner of Forestry. Ogallah, Kas.

New Books.

To write a good book for the little folks is a very difficult task, more difficult, even, than to write an acceptable one for us elders. Only a genius can write for the juvenile mind. It calls for a peculiar quality of erudition and tact which is seldom found. That, only, is good juvenile authorship which warms and entices the young mind to bud and bloom and fruitage as the sunshine entices the orchard to inflorescence and ripe apples.

On our table lies a little volume entitled "Two Little Maids and Their Friends," by Mrs. J. K. Hudson, wife of the veteran, stalwart editor-in-chief of the Topeka Daily Capital. This is not Mrs. Hudson's first venture into book-world, for she has already achieved an enviable reputation in authorship in "Esther the Gentle" and "A Child of Erin."

In "Two Little Maids," Mrs. Hudson shows herself, like John Alden in Longfellow's "Miles Standish," "endowed with the graces of speech and skill in the turning of phrases," and writes down to the little folks as graciously as she does up to the bigger ones, within more pretentious covers. From the front cover, on which is handsomely traced the suburban villa home of the little maids, to the good-bye picture of Mary and her doll, the book is a charm to the elders and a fascination to juvenility.

Another Kansan's book on our table bears the business title of "Paths to Wealth," by Mr. John D. Knox. The book has a similar trend to "Thrift," by Samuel Smiler, which has a world-wide reputation, and "Getting on in the World," by Prof. Matthews, which is equally as deserving.

This later book of the trinity has many features not found in the other two. As men differ in personality, so do their books differ in characteristics. While the themes of all three are alike, yet their treatment of the subject matter shows a wide divergence. The book before us, by Mr. Knox, might well be called "The Book of Business Proverbs." A few years ago some author said that the proverbs of the world had all been written and the book closed. But it was not so, for here is a relatively new book—not a dozen years old—which is full of proverbs, both old and new. It contains more proverbial business aphorisms to the page than any book we have seen outside of the Bible. The apt and admirable quotations from the ablest writers of all ages evinces a wide range of reading by the author, and both an analytical and synthetical mind. The whole philosophy of acquisition is plainly and charmingly set forth in a rhetoric that is terse and strong and almost as epigrammatic as that of Emerson, the profoundest of all philosophers. This book ought to be in the library of every farmer and business man in Kansas. His sons would, or could, derive two life-long advantages from its careful study—one, the fundamental principles of business prosperity, and the other a good literary and rhetorical style.

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"Bright alike outside and inside." Mailed FREE on application. With each copy we will send (flat) a beautiful painting of New Sweet Peas until the 500,000 have all been called for. Send a postal to-day. W. Atlee Burpee & Co., Philada.

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New NEBRASKA IRON-CLAD—made 80 bushels per acre in Nebraska in 1894, without irrigation. A cross between the well-known Golden Beauty and Early Yellow Dent. Sample ear, 10 cents, postpaid. Early Thompson and King of Earlies, 60 bushels per acre, without irrigation in Nebraska. Send for our new catalogue.

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These charming new types of Chrysanthemum from Japan bloom the first year from seed. They embrace all styles, varieties and colors, including the exquisite new Ostrich Plume types, Rosettes, Globes, Embellished, Miniature and Mammoth. Sow the seed this spring and the plants will bloom profusely this fall, either in pots or in the garden. From a packet of this seed one may have a most magnificent show of rare beauties. Price 25c. per pkt. or FOR ONLY 80c. WE WILL MAIL ALL OF THE FOLLOWING:

- 1 pkt. NEW JAPANESE CHRYSANTHEMUM Seed.
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JOHN LEWIS CHILDS, Floral Park, N.Y.

In writing to our advertisers please say we saw their advertisement in the KANSAS FARMER.

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.

SICK HOGS.—We have some hogs that act strangely; two have died. They become weak, stagger and fall about. They do not eat anything; they try to wedge their heads into a crack or some tight place.

Answer.—Your description indicates some brain trouble, probably inflammation, but as you say nothing of the condition, feed or surroundings of the hogs we are unable to give anything definite as to cause or cure.

SICK PIGS.—Several months ago two of my spring pigs began to swell at the throat, had diarrhea and got thin. We turned them out and one got well, but the other got worse when shut up again.

Answer.—Your pigs may have suffered from dry, dusty pens, from cold and sore throat, or they may have had a mild attack of swine plague. It is impossible to form a definite opinion from your description.

IMPACTION IN COLT.—A four-year-old colt was taken with symptoms resembling colic. He had been running on sod wheat. I gave him soda, then nitre, then melted lard; but after three days he died.

Answer.—The horse has only one stomach. The duodenum or first intestine after the stomach is sometimes called the second stomach, but it does not hold twelve quarts.

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"Pansies, Poppies, and Sweet Peas." A bright booklet. .10

MARKET REPORTS.

Kansas City Live Stock. KANSAS CITY, Jan. 7.—Cattle—Receipts since Saturday, 5,336; calves, 137; shipped Saturday, 1,337. The market was slow; native steers steady to 10c lower and Texas 10c lower; cows, bulls, calves and stockers unchanged; good feeders strong. The following are representative sales:

Table with columns for DRESSED BEEF AND EXPORT STEERS, WESTERN STEERS, COWS AND HEIFERS, TEXAS AND INDIAN STEERS, TEXAS AND INDIAN COWS, STOCKERS AND FEEDERS.

Hog—Receipts since Saturday, 5,779; shipped Saturday, 984. The market was lower for good and 5@10c lower for common hogs. The top was \$4.35 and the bulk \$4.10@4.20, against \$4.45 for top and \$4.10@4.30 for bulk Saturday. The following are representative sales:

Table with columns for Chicago Live Stock, Chicago, Jan. 7.—Hogs—Receipts, 43,000; official Saturday, 17,993; shipments, 8,277; left over, 5,000; market for heavy grades steady; others weak and 5c lower. Light, \$3.80@4.20; mixed, \$3.90@4.60; heavy, \$4.00@4.70; rough, \$4.00@4.20.

Cattle—Receipts, 18,000; official Saturday, 1,394; shipments Saturday, 697; market slow; prices 5@10c lower. Sheep—Receipts, 18,000; official Saturday, 2,604; shipments Saturday, 280; market slow; prices 10c lower.

Chicago Grain and Provisions. Table with columns: Jan. 7., Open'd, High'st, Low'st, Closing. Rows include Wheat, Corn, Oats, Pork, Lard, Ribs.

Kansas City Grain. KANSAS CITY, Jan. 7.—There was about the usual light demand for wheat by sample today. The few cars offered sold at about Saturday's prices.

Receipts of wheat to-day, 11 cars; a year ago 88 cars. Car lots by sample on track at Kansas City at the close were quoted nominally as follows: No. 2 hard, 52c; No. 3 hard, 50@51c; No. 4 hard, 48@49c; rejected, 46@47c; No. 2 red, 51@52c; No. 3 red, 50@51c; No. 4 red, 48@49c; rejected, 46@47c.

Corn sold slowly and was weak at the close though early in the day there was a rather good demand for mixed at about 1/2c higher prices. Receipts of corn to-day, 15 cars; a year ago 71 cars.

Sales by sample on track at Kansas City: No. 2 mixed corn, 9 cars 41 1/2c, 4 cars 41c, 1 car 40 1/2c; No. 3 mixed, nominally, 40c; No. 4 mixed, nominally, 39 1/2c; No. 2 white, 41 1/2c bid 42c asked; No. 3 white, 1 car 41c, 3 cars 40 1/2c. Receipts of oats to-day, 8 cars; a year ago 3 cars.

Sales by sample on track at Kansas City: No. 2 mixed oats, 6 cars 31c; No. 3, nominally 30c; No. 4, nominally, 27@28c; No. 2 white oats, nominally 33c; No. 3 white, nominally, 32c. Hay—Receipts, 29 cars; market firm. Timothy, choice, \$9.00@9.50; No. 1, \$8.00@8.50; low grade, \$6.00@7.50; fancy prairie, \$8.50; choice, \$7.50@8.00; No. 1, \$6.50@7.00; No. 2, \$5.50@6.00; packing hay, \$4.00@5.00.

St. Louis Grain. ST. LOUIS, Jan. 7.—Receipts, wheat, 6,907 bu.; last year, 23,000 bu.; corn, 54,000 bu.; last year, 213,500 bu.; oats, 42,000 bu.; last year, 52,800 bu.; barley, 12,750 bu.; flour, 3,130 bbls.; shipments, wheat, 603 bu.; corn, 1,638 bu.; oats, 8,644 bu.; flour, 3,792 bbls. Wheat—Cash, 52 1/2c; January, 52 1/2c; May, 55 1/2c; July, 56 1/2c. Corn—Cash 42 1/2c; January, 42 1/2c; May, 44 1/2c; July, 45 1/2c. Oats—Cash, 30 1/2c; January, 30 1/2c; May, 30 1/2c @30 3/4c.

Kansas City Produce. KANSAS CITY, Jan. 7.—Eggs—Receipts light; market is quiet and unsettled, yet unchanged; strictly fresh, 16c. Butter—Receipts, light; the market is firm; extra fancy separator, 22@23c; fancy, 19@20c; fair, 18c; dairy, fancy, 15@16c; fair, 13@14c; fancy roll, 12@15c; fair roll, 10 1/2@11c; packing, steady, 7@8c; old, 5@6c. Poultry—Receipts fair; the market for chickens is firm; hens, 5c; mixed springs, 5 1/2c; small, 6@6 1/2c; roosters, 12 1/2@15c; dressed chickens, 5@6 1/2c; turkeys dull and steady; gobblers, 4@4 1/2c; hens, 5@5 1/2c; dressed turkeys, dull, 5@5 1/2c; ducks, firm, 5 1/2@6c; geese, scarce, 5 1/2@6c; pigeons, dull, 75c per doz.

Apples—Receipts light, supply small; the market is dull and steady; standard packed ranged from \$2.50@3.00 per bbl.; others, \$2.25@2.50; fancy stand, \$3.25@3.50; Jennettings, \$1.50@2.25 per bbl. Lemons, weak, \$3.25@4.50. Oranges, scarce, quiet, firm; Mexican, \$2.75@3.00. Cranberries, firm; Cape Cod, \$10.00@11.00 per bbl.; Jersey, \$10.00@10.50. Vegetables—Potatoes, receipts light; market exceedingly dull; ordinary kinds, common, 45 @55c per bu.; sweet potatoes, red, 15@20c per bu.; yellow, 25@30c per bu.; Utah and Colorado, choice, 55@60c per bu. Cabbage, plentiful, market firm, 75c per 100; Michigan, \$18.00@20.00 per ton. Cauliflower, small, 45@50c per doz.; large, 75c per doz.

THE STRAY LIST.

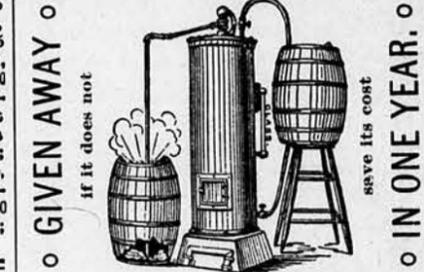
FOR WEEK ENDING DEC. 26, 1894. Coffey county—T. N. Bell, clerk. COW—Taken up by J. W. Allen, in California tp., November 1, 1894, one red and white spotted cow, 10 years old, branded on right hip with letter D; muley; valued at \$12. Shawnee county—Chas. T. McCabe, clerk. STEER—Taken up by E. Higgins, Mission tp., P. O. Topeka, one black yearling steer, small ring in right ear, left ear clipped; valued at \$13. Greenwood county—J. F. Hoffman, clerk. COW AND CALF—Taken up by Cella Oliver, in Eureka tp., December 10, 1894, one dark red cow, white under the belly, dehorned, 6 or 7 years old, indistinct brand on left hip like T; also roan bull calf; valued at \$20. TWO PONIES—Taken up by E. E. Bollenger, in Eureka tp., December 12, 1894, one dark bay mare pony, 4 years old, weight 800 pounds, and one light bay mare pony, 4 years old, weight 800 pounds; valued at \$15. Neosho county—W. P. Wright, clerk. HORSE—Taken up by C. F. Bogle, in Canville tp., December 8, 1894, one dark bay horse, fifteen hands high, 8 years old, heavy mane and tail, white spot in forehead and on tip of nose, hind feet white, branded on right thigh; valued at \$25. Chautauqua county—G. W. Arnold, clerk. HORSES—Taken up by G. M. Norris, Niota, one dark bay horse 2 years old and one light bay horse 4 years old, both marked with O; valued at \$20. Wabaunsee county—J. R. Henderson, clerk. STEER—Taken up by C. D. Poulter, in Rock Creek tp., one red steer 1 year old, no marks or brands, white spot in each flank, small white spot on right hip and white in face; valued at \$13. Wilson county—V. L. Polson, clerk. MARE—Taken up by A. J. Shetler, of Cedar tp., P. O. Altoona, on November 19, 1894, one iron gray mare 3 years old, two white spots in face, fresh wire cuts, one on knee and one on breast. FOR WEEK ENDING JANUARY 2, 1895. Chautauqua county—G. W. Arnold, clerk. STEER—Taken up by J. B. Kincaid, in Little Canyon tp., one pale red steer, 4 years old, under-slope in each ear, indistinguishable brands on both sides.

Chase county—M. K. Harman, clerk. MARE—Taken up by W. M. Kendall, in Toledo tp., P. O. Cottonwood Falls, December 10, 1894, one bay mare, black legs, no visible marks or brands; valued at \$20. Ottawa county—J. S. Richmond, clerk. STEER—Taken up by Peter H. Gabhart, in Durham tp., P. O. Oak Hill, November 18, 1894, one brown two-year-old Western steer, branded with two parallel semi-circles on each shoulder and letter H on left hip; valued at \$14. FOR WEEK ENDING JAN. 9, 1895. Sumner county—Chas. Sadler, clerk. MARE—Taken up by H. S. Jerome, in South Haven tp., P. O. South Haven, December 22, 1894, one mare, 12 years old, sixteen and one-half hands high, dark brown, little white in forehead. MARE—Taken up by L. D. Hilbert, in Gove tp., December 10, 1894, P. O. Mulvane, one mare, 9 years old, sorrel, bald face, white stripe on each side of neck, white on left side and hip, four white feet; valued at \$20. Cherokee county—P. M. Humphrey, clerk. THREE MARES—Taken up by I. Riesling, three mares, one black, fourteen hands high, and one dun; no marks; valued at \$10 each. Chautauqua county—G. W. Arnold, clerk. TWO HORSES—Taken up by T. Gregory, in Belleville tp., P. O. Chautauqua, December 22, 1894, one bay horse, 5 years old, and one gray horse, 7 years old; no marks or brands. Smith county—A. C. Smith, clerk. HORSE—Taken up by A. J. Bass, in Lane tp., P. O. Athol, December 18, 1894, one horse, 900 pounds, 3 years old, bright bay, white star in forehead; valued at \$15. Lyon county—C. W. Wilhite, clerk. STEER—Taken up by John A. Williams, in Emporia tp., November 24, 1894, one three-year-old red steer, no marks or brands visible; valued at \$15. Greenwood county—J. F. Hoffman, clerk. STEER—Taken up by Mrs. W. T. Prather, in Bachelor tp., December 11, 1894, one red steer, 2 years old, branded W on left hip, both ears cropped; valued at \$20. Thomas county—Jas. M. Stewardson, clerk. SIX HORSES AND TWO MULES—Taken up by I. Shallenberger, in Hale tp., P. O. Brewster, December 20, 1894: one sorrel horse, 12 years old, 1,300 pounds, light mane and tail; one bald-faced sorrel horse, 6 years old, 1,300 pounds; one bay horse, 10 years old, 1,300 pounds, no marks or brands; one bay horse pony, 7 years old, 500 pounds, white on left hind foot; one dark bay mare, 7 years old, 1,300 pounds, no marks or brands; one bay mare, 8 years old, 1,200 pounds, wire scar on left front foot; one bay mare mule, 8 years old, leather halter on; one bay horse mule, 8 years old, leather halter on. COW—Taken up by H. Harstine, in Smith tp., P. O. Rexford, October 10, 1894, one white dehorned cow, 6 or 7 years old, branded H on left side; valued at \$10.

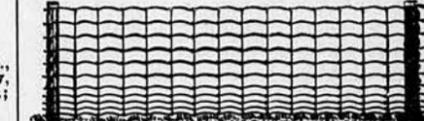
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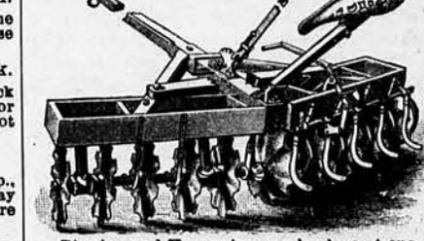
MARTIN & MORRISSEY MFG. CO., Agents wanted. OMAHA, NEB.



Non-Support No Cause for Divorce.

About a dozen agents from distant states were visiting the factory about Christmas. They insisted on seeing some old Page fence, and were driven out and alongside one of the first put up near Adrian. There it stood straight, taut, and as pleasant to look upon as though just erected. But one of the party was bound to get his hands on it that he might tell his customers. A few shakes of the fence brought the whole party out, for there in succession, were four posts, twenty feet apart, rotted entirely off, and the fence didn't seem to know the difference. PAGE WOVEN WIRE FENCE CO., Adrian, Mich.

ENTIRELY NEW.



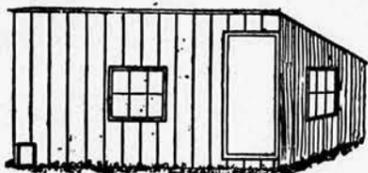
Plowing and Harrowing can be done at one operation with CLARK'S CUTAWAY REVOLVING PLOW. It Produces a Perfect Seed Bed. Send for Special Circular. Agents wanted in every county. THE CUTAWAY HARROW COMPANY, Higganum, Conn. New York Office, 18 Cliff Street.

The Poultry Yard

CHEAP POULTRY HOUSE.

If Possible It Should Be Built with a Southern Exposure.

Many plans of poultry houses are given, and most of them are too elaborate for the farmer and ordinary poultry keeper. An expensive poultry house is no better than a cheaper one for real service. The following illustrates a simple, cheap poultry house that anybody can build by simply looking at the illustration. The house should be built if possible with a southern exposure. In the south or middle states the house just as it appears will answer all purposes. In the north there should be tarred paper between the studding and boards, and in the extreme north double walls would be better. Inside place the roosts low and as numerous as may be needed. Nests may be constructed at the back of the house and covered with a slanting lid so that they can be reached without entering the house. The small door at the lower left-hand corner is for the egress and ingress of the



CHEAP POULTRY HOUSE.

poultry. Should there be a run, however, we would built it at one end of the house, with a small door in the end similar to the one shown in the front, and it is desirable to have this partly covered and protected on the sides. In other words there should be a shed for use in stormy weather. This house may be built high enough to permit a chamber or second story for the storage of the feed. The drainage, remember, should be good.—Farmers' Voice.

All Poultry Needs Salt.

It is a common error that salt is fatal to poultry. This arose from the ill-effects of allowing poultry to get at salt when they have not had it as a part of their rations, and once they got access to it they ate enough to kill them. All soft food given to poultry should be salted about as much as the same amount would be for human use, and if this is done they will never eat salt to excess if they are allowed to run where they can get at it. Salt is one of the necessary elements of the blood, and if it is not furnished in some shape the health of the fowls will be impaired and their productiveness lowered.—American Farmer.

Fowls on the Farm.

It is impossible to get the best results from fowls kept cooped in a pen, especially during hot weather. Disease and vermin get a foothold among them unless they have ample range to sun and dust themselves by contact with fresh earth. A yard, no matter how small, that can be plowed or cultivated once a week during the summer will make a rolling place for them. It will be all the better if their grain feed is given on this plowed surface, and the fowls obliged to scratch for it. They may lose a little grain, but most of it will turn up at the next cultivation, or if it germinates its green sprout will be eaten. On farms the better plan is to let the fowls range everywhere, protecting the garden by a fence, and reserving that for hens with small chickens.

Killing Lice with Suds.

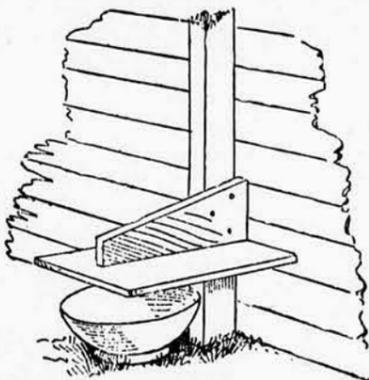
Refuse suds from the washtub will drive lice from the poultry house. Make them stronger by adding a pound of lye to the tub and apply while hot with a watering pot or spray pump, everywhere about the coop, especially on and around the roosts. If boiling hot, the soapsuds can be used to make a kerosene emulsion by adding three quarts of oil to the tub and running the mixture rapidly several times through a garden or force pump. The emulsion is a good lice destroyer.

To set a hen when the weather is hot and dry, a good plan is to put an inverted sod in the bottom of the nest.

WATER FOR POULTRY.

A Device by Which It Can Be Kept Clean at All Times.

Every poultry owner has realized how difficult it is to keep the water clean where the fowls can stand on the edge of the vessel or roost above it. An ingenious plan for avoiding this difficulty is shown in the accompanying engraving from a sketch by J. M. Canfield. A board bracket is nailed to a post or to one of the studding timbers and on the under side of it is horizontally fastened a square piece of broad board which serves as a shelf to keep the droppings from falling into the drinking vessel below. The vessel should be of such a height that the



DEVICE FOR KEEPING WATER CLEAN.

fowl cannot get between it and the shelf so as to roost on the edge of the vessel. Blocks may be placed below it for this purpose. At the same time the shelf should be sufficiently high that the fowl need only to stoop very slightly to drink. This simple contrivance will be found of great service in protecting the drinking water which must be given to the fowls in their houses on stormy or very cold days.—Orange Judd Farmer.

The Poultry and Egg Industry.

The census report for 1890 shows the value of eggs produced annually to be over \$100,000,000, while the value of poultry (chickens, turkeys, ducks and geese) amount to about the same. Or, to make it plain, the total annual production of poultry and eggs amounts to \$200,000,000. At the present prices of wheat, the poultry and eggs are the more valuable, and the market is here at home. It is safe to say that the report does not include all, as a large number of persons were not visited during the enumeration of poultry and eggs, but the figures are sufficient to enable those interested to arrive at a partial knowledge of the poultry and egg production. In a single decade the poultry and eggs of the United States amount to enough to pay off our national debt, and the money invested in that direction finds its way into all other business channels.

Heating the Poultry House.

Artificial heat in the poultry house causes the hens to take cold when they go outside; but the suggestion given by us last year might be mentioned again for the benefit of some who may not have noticed it. It is to hang a lighted stable lantern in the pantry house on very cold nights. It will not create much heat, but will raise the temperature sufficiently to dry the interior and make the hens more comfortable. Care should be exercised, however, to suspend the lantern by the use of wire, and to use every precaution to avoid liability of destruction by fire.—Farm and Home.

How to Handle Poultry.

The Kansas Farmer says: Never seize a fowl by the tail, if a fine one, nor touch the back, but grasp both legs at once with a firm, tight, quick hold, and then raise free from the ground or perch and hang the body down clear of any obstacle. This method does not ruffle the plumage or turn a feather, which in a fine bird must be avoided. When the web of the feathers is once broken it can never be united again, and where much handled this often occurs, giving the bird a ragged appearance.

NEW 68 PAGE CATALOGUE AND GUIDE TO Poultry Raisers for 1895. Contains over 180 fine illustrations showing a photo of the largest henery in the west. Gives best plans for poultry houses, sure remedies and recipes for all diseases, also valuable information on the kitchen and flower garden sent for only 10 cents. John Bauscher, Jr., P. O. Box 44 Freeport, Ill.

[Mention KANSAS FARMER.]

In the Dairy.

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

THE NEW YEAR.

It is fitting that at least once a year we should come to a halt, a sort of stepping-stone, as it were, and take a retrospective glance backward in order to make sure that our plans for the future may not be intercepted by errors that have been committed in times that are past. New Year's day may be considered as a dividing line in the progress of our lives towards the goal of our ambition, as in the absorption of business and pleasure we are apt to forget the true principles upon which the most prosperous communities are founded.

It is well, perhaps, that we, as Americans, never know the full meaning of the word failure, or the splendid achievements of this generation, living in the hope of "better times," would never have been accomplished. Although the past year has not been as fruitful to many farmers as could be wished, still it is useless to make a parade of events which are still fresh in the minds of our readers. We do not propose to irritate the feelings of those who have been unfortunate in their undertakings, but simply to admonish such to look on the bright side of life and profit by whatever losses may have been scored to their discredit. It is best not to indulge in too much speculation, but to employ sensible business methods in all our transactions as the demand of the hour presents itself.

The editor hardly feels it his duty to write a homily on the spirit and customs of the day, but that each one should begin the present year with new and advanced ideas, bearing in mind, let the times be what they may, dairy farmers and others interested in the dairy business have more to encourage than at any time in the past, and while at intervals clouds may obscure our progress, the future is always full of promise.

The United States Supreme court decision on the oleo question, we believe, will have a very beneficial effect on legislation in this State looking to the suppression of imitation and fraudulent goods, and certainly with such laws as the dairymen of Kansas demand, our farmers who are interested will have reason to take new courage in this growing industry.

Let us rub out the old chalk marks and start afresh with a determination that the year 1895 will eclipse all our past records, and see us well on the road to prosperity. On these propositions the KANSAS FARMER wishes each and every one of its readers that measure of success which forgets the past, with all its disappointments and mistakes, and points to a future bright with the promise of seedtime and harvest.

How the Recent Decision Affects Oleo.

It is stated on good authority that the branch agencies of Armour & Co. and Swift & Co. have been removed from Massachusetts, and the supplies of butterine recalled from the sub-agencies throughout the State. In Connecticut, where a law similar to the Iowa law is in force, the Dairy Commissioner has been active, and the agents for the butterine factories have been ordered to ship their supply of the imitation goods out of the State. Everything indicates that oleomar-

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garine, by the recent decision of the United States Supreme court, has received its death blow in those States which have properly enforced laws forbidding its sale except under its own name.

The very fact that such men as Geo. B. Swift, one of the largest manufacturers of oleo, says that this ruling of the court practically shuts them out of States having such laws as that of Iowa, shows the villainous intent of the traffic.

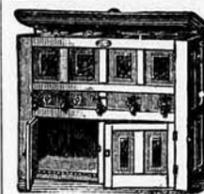
Fraudulent Butter Detected.

Dairy Commissioner Boardman, of Iowa, recently seized about 8,000 pounds of butterine from creameries in Delaware and Clayton counties, that had been sent from Philadelphia to mix with butter at the above-named places. Analyses showed that the material shipped in contained only the slightest trace of butter. About one part to twenty-five parts of foreign fats. When heated the odor was nauseating and foul. The mixture, which was being sold as pure creamery butter, contained from 25 to 30 per cent. of foreign fats. Mr. Beyer, the man accused, has admitted his guilt in the affair and indicated his intention to make no defense. It is quite likely that settling with the State will not end his troubles, as the United States officials are after him for manufacturing butterine without a license. Mr. Beyers is a prominent business man of Edgewood and stands high in the community, which makes the affair seem all the more strange. The fact that Mr. Beyer began to adulterate his butter only a few weeks before he was detected speaks well for the watchfulness and energy of Dairy Commissioner Boardman. With him in office the consumers of Iowa butter may rest assured that they are getting the pure, unadulterated article.

Proposed Dairy Legislation.

One section of the proposed Kansas milk law provides that the Dairy and Food Commissioner shall have authority to inspect all premises and stables and prohibit any milk from being sent to market from farms that do not come up to a certain standard of sanitation, which is not more than is imposed upon those who supply milk to the creameries, and from any point of view, is only the protection of the consumer, who cannot know in respect to the conditions of things, whence the milk supplies come. It is right that the law-makers should give attention to this subject, looking to the better management of the herds that furnish the city's milk supply. The health of the private city dairy cow should also be looked after. Many of the cows housed in close, damp and illy-ventilated quarters are subjected to conditions highly favorable to tuberculosis.

Have any of our readers had any experience with wheat as cow feed? We should like to hear from you if you have. If your results from such feed have not been satisfactory, let us know it. Wheat-feeding is comparatively new as a ration for milk, and we want all the information we can get.



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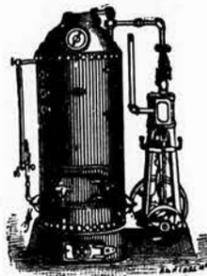
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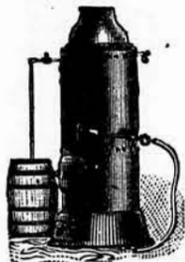
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