

KANSAS FARMER

ESTABLISHED IN 1863.
VOL. XXXIII. NO. 46.

TOPEKA, KANSAS, WEDNESDAY, NOVEMBER 13, 1895.

SIXTEEN TO TWENTY
PAGES—\$1.00 A YEAR.

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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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Agricultural Matters.

SOIL MOISTURE AND FALL PLOWING.

By Prof. G. H. Fallyer, of the Kansas Agricultural College.

In the past, soils have been studied principally from the chemical standpoint, and the use of fertilizers and other chemical means have been largely resorted to in efforts to improve soils or even to maintain them in their present degree of fertility. In the near future the physical or mechanical condition of the soil will receive much more attention than heretofore. As soil physics is further studied and better understood, there is no doubt that we shall learn that the productiveness of a soil may be influenced quite as much by mechanical means as by chemical ones. In fact, this is now fully recognized, for certain particular kinds of soils and situations. Further, many of our farm operations effect important mechanical changes in the soil, whether they are undertaken for this special purpose or not. Of course, a soil cannot produce in the absence of the elements of plant food and these elements must be in a condition to be taken up and used by plants. We shall not, therefore, cease to study the chemistry of soils, but shall give more prominence than heretofore to physics of soils. The two will go together and supplement each other. It has been said that the soil is a laboratory in which those chemical changes take place by which plant food is prepared. The efficiency of the soil in this respect is greatly influenced by its mechanical condition. While this has been fully realized by students of the soil and crops, it has not been acted upon to great extent by those who till the soil.

It is more than ever becoming understood that the relations of soils to water and heat are among the prime factors of their productiveness. It would be beyond the limits and scope of this article to go into the subjects of the relation of crop yields to rainfall, and of the department of water within soils. But it is within each one's observation and experience that the season, whether wet or dry, cool or warm, determines whether our crops will be light or heavy. And so, any treatment of the soil that will counteract the unfavorable conditions of a season, even partially, will increase the yield. At the opening of the growing season, there is usually much more water in the soil than is required for the young plants. If dry weather comes on, the store of water is reduced by evaporation from the soil and plants. It is known that a layer of loose earth overlying the real bed in which the plant roots expand and develop will prevent the loss of water from the latter. So that it has often been said that in dry weather frequent shallow tillage prevents the soil drying out, while deep culture aggravates the loss by evaporation from the soil.

Experiments are on record showing that a thin layer of loose soil will dry out and become dusty, while the soil below is protected. But the whole matter of soil water and the ability of plants to procure their water from soils under varying conditions of dryness have received very little study. Its importance is being appreciated, and one line of work in the field is to study the loss of water from soils under different conditions. The Chemical Department of our Experiment Station has been doing work upon this phase of the subject, as well as upon others. The work will be fully reported in bulletins of the station. We have been much interested in the condition of the soil of the several plats, which well illustrate the effects of cultivation upon the loss of water. Treated plats alternate with untreated ones, and samples of the upper foot of the soil are taken once in two days. Just before the experiment was begun a very heavy rain wet the upper soil quite thoroughly and probably evenly. It is intended to compare only two kinds of plats; those left without cultivation and those given surface tillage after each shower. There were no heavy rains during the time to which reference will be made. None

of the plats bore crops. It was found that soil, although carefully leveled off, dries out quite rapidly after each rain, if left undisturbed, while if lightly stirred, so as to keep the surface pulverized, the loss of water is much less rapid. The following figures may serve to make this clearer: The uncultivated plats contained on an average during the first week twenty and one-half pounds of water in one hundred pounds of soil; the cultivated plats, twenty and four-tenths pounds; at the end of eight weeks of not very drying weather, the mean of a week is fourteen and two-tenths pounds of water in one hundred of soil in the uncultivated plats; and seventeen and three-tenths pounds to the hundred in the cultivated plats. Plants cannot take up all the water in a soil, nor will all the water evaporate from a soil. When perfectly air-dry, a soil always contains a few pounds of water to the hundred, varying with the soil. It is probable that plants growing in the soil of these experiments will wilt in hot weather if the proportion of water falls much below 10 per cent. If this be the limit, the cultivated plats contain nearly twice as much available water as the uncultivated ones. This protection by surface cultivation is certainly due to the fact that the cultivated layer breaks up connection between the extreme outer surface and the water-bearing soil below. By breaking up capillarity evaporation is reduced. When rain falls upon a loose soil less flows from the surface than from a compact soil. This is as true during seasons when the soil is idle as during the growing season. It often happens that there is not enough rainfall during the growing period to supply the needs of the crop; but the supply of water already in the soil at the opening of the season supplies the deficiency so that a good crop is made. In view of this, it is a good plan to keep fields in such condition in the intervals between cropping that moisture will enter the soil and be retained there in that condition known as capillary water; that is, so as to make the soil look moist, but not wet. To accomplish this, the ground should be plowed as soon after the removal of a crop as the other farm work will permit, and the surface should be leveled down by harrowing, floating or rolling. A subsequent harrowing to loosen the surface will be of advantage. Wheat and oats ground should be plowed in summer; and corn ground, if corn is out and put in silo, or cured as fodder, can be plowed in fall or early winter. Our winter rainfall is usually light, but what we have is worth saving, as our falls are often dry.

There are incidental effects from this mode of treatment that, independently of this saving of soil moisture, justify the practice. By early plowing, weeds are prevented from sapping the soil of moisture and polluting the ground with their seeds. The soil is made in the best possible condition to facilitate the chemical transformations by which plant food is prepared in the soil.

The disintegrating and beneficial effects of freezing and thawing in winter are more marked in soils thus prepared than if not. It sometimes happens that in order to get the crop in early the ground must be plowed in the spring when too wet; that is, the good effects of frost are counteracted by the puddling due to stirring the soil when wet. If plowed in fall or early winter, the surface soon dries sufficiently for seeding without injury, while the wetter soil below remains undisturbed, and its loss of moisture checked by the slight surface cultivation in seeding.

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The Limit of Production.

The discussion of this subject has but just begun. Both sides have been presented in these columns, and yet the position taken by some, that the time is not near when humanity shall want more than is readily produced, has not been as well maintained as the reverse. A presentation of some pertinent considerations is made by Alva Agee, an Ohio farmer, in the *National Stockman*. He says:

"The pleasing promise is occasionally made us by statisticians that the day is near at hand when the demand for food will be fully as great as the farms can supply. We are told that little more good land is open for occupation, while our increase in population is constant. There was a time when I imagined that this generation might see a scramble for the right to own and till a little of this earth's surface. Within a short time the population of this country has been increased by 15,000,000 of people, and with small increase in acreage of tillable land for the future, if we except the land capable of irrigation in the West, it might seem that there is promise of a different adjustment of supply and demand. But the fact becomes apparent upon a little study that we have land enough to feed several fold more people than we now have, and that the man who depends upon underproduction for more remunerative prices leans upon a broken reed.

"Very few farms are run to half their capacity for producing food. Tens of millions of acres lie practically idle, producing little more than enough to pay taxes, merely because it does not seem best to put costly labor on them. Human labor to-day is the costliest item in the production of food and clothing. Wages in the country are no higher than human beings should receive, if conditions would justify them, but they are high enough to prevent the employment of half the men that could be used on farms if there was sufficient demand for food to justify all farmers in striving for heavy production. The majority of farmers—in fact, practically all farmers are not asking the question: 'How may I get the biggest possible sales from my farm?' but the question is, 'Upon what product can I put some expense with the assurance of net profit?' A very small income from a crop that entails little expense is accounted preferable, in millions of cases, to the possibility of greater income that can only come from the investment of much labor at present prices. I am not arguing that it is or is not preferable, but the fact that it is so regarded accounts in part for the failure to run most farms to half or one-fourth of their productive capacity. An illustration that will serve may be found in the case of sweet potatoes. On an acre of gravelly hillside that produces sufficient grass to make 125 pounds of dressed meat, I can grow in a good season 250 bushels of sweet potatoes, and in a poor season 100 bushels. As poor years have a habit of coming more frequently than good ones, we will estimate the average yield 150 bushels. But the growing of sweet potatoes entails heavy expense for labor. It is a crop that requires more human labor than most staple crops. On the contrary, if there be a fence around the ground there is no expense in grazing an animal. There may not be much profit from the grazing, but the risk is small. In the case of potatoes, after investing considerable money in the crop, I am wholly dependent upon demand for potatoes to get my money back before I can begin figuring on profit. This holds most men back from the production of costly crops, and holds all men back in some degree. Yet, if people needed food, 100,000,000 bushels of sweet potatoes could be produced in southern Ohio on land that is not producing much net profit; but all know that if such a quantity was produced the owners of the land would be bankrupted by reason of the very abundance of their product.

"Another illustration may be found in the case of Irish potatoes. A tremendous area of fertile but undrained land is now producing a small yield of hay, because any other crop would

THE OLDEST AND THE BEST

Cough-cure, the most prompt and effective remedy for diseases of the throat and lungs, is Ayer's Cherry Pectoral. As an emergency medicine, for the cure of Croup, Sore Throat, Lungs, Fever and Whooping Cough,



AYER'S

Cherry Pectoral cannot be equaled. E. M. BRAWLEY, D. D., Dis. Sec. of the American Baptist Publishing Society, Petersburg, Va., endorses it, as a cure for violent colds, bronchitis, etc. Dr. Brawley also adds: To all ministers suffering from throat troubles, I recommend

AYER'S Cherry Pectoral

Awarded Medal at World's Fair.

AYER'S PILLS Cure Liver and Stomach Troubles.

cause more expenditure of money in its production. Tilling is expensive because a great deal of human labor is involved in the work of under-draining, and the production of tiles and their delivery to the consumer. It has not seemed expedient to the owners of this land to invest in under-drainage, and then in costly crops of potatoes, when the people may not need them for food badly enough to even pay the bare cost of production. An immense quantity of food could be produced, if needed, on this land that now produces only a half crop of grass, which, converted into meat, furnishes an amount of food that is insignificant in comparison to the possible amount of potatoes.

"There are millions of acres of rough land in this country that hardly afford income sufficient to meet the needs of them, though the land is admirably adapted to orcharding. The owners could supply an indefinite supply of apples, peaches and other fruits, and would do so if they had assurance that the investment of money was a safe one. Orcharding involves labor, and that is high-priced. Whenever the demand justifies the risk of investment we can produce several fold more bushels of fruit than at present without any serious curtailment of other products.

"Probable profits make men bold to invest money. Just as fast as increased population desires more food, it can be furnished by the employment of more labor in the investment in under-drainage, in clover seed and fertilizers. Then, too, the yield of all staple crops can be greatly increased on their present area. It is all a question of demand. When this is assured the supply is bound to be abundant in seasonable years till our population is several fold greater than at present.

"The present population would consume much more if the families of the idle had all the meat, vegetables and fruit they need. In our cities and towns, and in mining districts, the cost to the consumer of farm products is never small. The profit of the shipper, jobber, retailer and transportation lines usually double the first price of food, and in many instances treble it. The hope for the future does not lie in any dearth of land for producing food, but in lessened cost of distribution and cheaper production for the individual farmer. The man who can produce food at the least cost per bushel or pound, and can reach the consumer in most direct way, is the one that has the best chance. This is the hope for the individual farmer, and the hope of American farmers in competition with foreign producers; but after using all the skill one possesses, two other things are involved—cheaper labor and

less charge for carrying and distributing our products to the actual consumer. The first might not be a blessing to humanity, and the attaining of the second seems to present insurmountable obstacles. But upon these, including greater skill, seem to rest the hope of improvement for American farming."

Publications of United States Department of Agriculture for October.

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

The World's Markets for American Products—Netherlands.

Monthly Crop Report—October, 1895.—There is appended to a part of the edition of the above report the transportation rates, as required by law, together with certain railroad and transportation statistics.

The Common Crow of the United States. By Walter B. Barrows and E. A. Schwarz.—The most important charges brought against the crow are: (1) That it pulls sprouting corn; (2) that it injures corn in the milk; (3) that it destroys cultivated fruit; (4) that it feeds on the eggs and young of poultry and wild birds. All of these charges are sustained by stomach examinations, so far as the simple fact that crows feed on the substances named, but the extent of the injury is a very different matter. This report is based on the examination of the contents of nearly a thousand stomachs.

Investigations Concerning Infectious Diseases Among Poultry. By Theobald Smith and Veranus A. Moore.—This bulletin is purely technical in character and is not practicable for general distribution.

Some Foreign Trees for the Southern States.—This bulletin has been prepared with a view to calling attention to a few economic trees of the highest importance which are believed to be worthy of extended trial in the Gulf region of the Southern States and in California. The trees treated are: Cork oak, by Dr. J. D. Jones; wattle tree, by Charles A. Keffler; eucalyptus, by Abbot Kinney; bamboo, by Henry G. Hubbard.

Hairy Vetch, Sand Vetch, or Russian Vetch (Vicia villosa). By F. Lamson-Scribner Agrostologist.

Soil Moisture.—A Record of the Amount of Water Contained in Soils during the Month of June, 1895.

State Laws Relating to the Management of Roads. Enacted 1894-95.

Origin and Work of the Darlington Road League. By Roy Stone, Special Agent and Engineer.

Climate and Health, No. 1. A summary of statistics for the four weeks ended July 27, 1895.—This is a serial publication, and will be devoted to climatology and its relation to health and disease. The data that appear in its climatic charts and tables are taken from the records of the meteorologic observatories of the Weather Bureau. The statistics of mortality and morbidity are furnished by special reports of public health officials and of physicians, made directly to the Weather Bureau.

Instructions for the Use of Maximum and Minimum Thermometers. Revised edition.

Instructions for Use of the Rain Gauge. Revised edition.

Monthly Weather Review—April, 1895.

Daily Weather Map. Showing weather conditions throughout the United States and giving forecasts of probable changes.

REPRINTS.

The Rape Plant: Its History, Culture and Uses. By Thomas Shaw, Professor of Agriculture in the Ontario Agricultural College.

Peanuts: Culture and Uses. By R. B. Handy, of the Office of Experiment Stations.

Weeds, and How to Kill Them. By Lyster H. Dewey, Assistant Botanist.

Alfalfa, or Lucern. By Jared G. Smith, Assistant Agrostologist.

Souring of Milk and Other Changes in Milk Products.

Grape Diseases on the Pacific Coast. By Newton B. Pierce, Division of Vegetable Physiology and Pathology.

Giant Knotweed, or Sachaline. By F. Lamson-Scribner. Gives general character, historical sketch, general remarks on sachaline as a forage plant, and method of cultivation.

Highway Taxation: Comparative Results of Labor and Money Systems.

Information Regarding Roads and Road-Making Materials in Certain Eastern and Southern States.

Foods: Nutritive Value and Cost. By W. O. Atwater, Professor of Chemistry in Wesleyan University.

"Turn the rascals out"—the familiar party cry—may be applied to microbes as well as to men. The germs of disease that lurk in the blood are "turned out" by Ayer's Sarsaparilla as effectually as the old postmasters are displaced by a new administration.

The Stock Interest.

SIZE AS A FACTOR IN PIG-FEEDING.

The following summary and analysis of pig-feeding experiments, by F. W. Wall, of the Wisconsin Experiment Station, will be appreciated by all swine growers:

"Young animals will make greater increase in live weight than old ones, on the same amount of food. Early experimenters studying problems connected with the feeding of pigs long ago discovered this general law, but it has, perhaps, never been put before feeders in such a striking manner as it might be. I have prepared the following table of summaries from the results of more than 200 feeding trials conducted by Professors Sanborn and Henry. Over 500 animals are included in the various trials, about two-thirds of which number were fed by Prof. Henry, at this station. The animals included are divided into seven groups, according to their live weight, as given in the table, and calculations have been made of the average feed eaten daily by the animals in each group, the gain made per day per head, as well as the food required for one pound of gain, and the food eaten and gain made per 100 pounds live weight.

RESULTS OF FEEDING EXPERIMENTS WITH SWINE.

Table with 7 columns: Group, Number of animals, Average live weight, Feed eaten, Gain made, Food per pound of gain, Gain made per 100 lbs. live weight.

"The figures given in this table will bear close study. Although not perfectly concordant throughout, the results clearly reveal the general law governing the feeding of swine of different sizes. As the animal grows heavier he eats more, makes better gains in his live weight, and consumes more food to produce a unit of gain. We need not here discuss the few irregularities of the table, as they do not affect the general conclusions drawn. When we come to consider the feed eaten and gains made per unit of live weight, the relation is turned around to a certain extent, as we find that the lighter animals consume the greatest quantity of feed per day, and also make the greatest gain per day per 100 pounds of live weight, and there is a very regular decrease as we go down the two columns. The results may be put in another way, so as to enable the reader to compare better the returns obtained with animals in the various groups. If we calculate the ratio of the figures in the last six columns in the above table to one another, placing the first figures in each column = 100, we have:

Table with 7 columns: Group, Live weight, Daily feed, Gain made, Food per pound of gain, Food eaten per 100 lbs. live weight, Gain made per 100 lbs. live weight.

"We notice that while the hogs in the seventh group weighed over eight times as much as those in the first group, the quantity of food eaten by them was only 30 per cent. of that eaten by the pigs in the first group, and the gain made was only 22 per cent., in all cases quantities per 100 pounds live weight being considered. The gain made does not keep up with food eaten, comparing the groups of heavier animals with those in the preceding groups; and the best returns for the food consumed are obtained with the lightest animals. The same is shown in the first table given, where we notice that the heaviest hogs ate

2.6 times more food a day than the lightest animals did, and gained only 1.9 times more. The latter are, therefore, the more economical feeders, and the heavier the hogs grow the smaller returns they give in increase in weight per unit of live weight.

"This difference in the relative economy of the various groups is mainly, but perhaps not wholly, due to difference in size, and not to difference in age. At any rate, similar differences, as shown in the above tables, have been obtained in feeding experiments with pigs of the same age but of different weights; and the same with other classes of farm animals.

"The practical conclusion, then, is—as most farmers know already, but many do not practice—that fattening animals ought not to be fed longer than is necessary to bring them up to maturity; that feeding and trying to fatten old animals is not paying business, generally speaking, as proper returns are not obtained for the food consumed. The reasons for this, and for the facts brought forward in the preceding may all be explained on physiological grounds, but it will not be necessary to state them here. The figures given are average results of practical feeding trials with all kinds of hogs, under varying conditions of feeding, treatment and climate, and they may be safely accepted in their main features as showing the laws governing the influence of the size on the growth made by animals."

Needed Suggestions.

The Kansas Improved Stock Breeders' Association is composed of a number of the best breeders of cattle, swine, sheep, horses and poultry in America. A more representative lot of up-to-date and progressive men are seldom found anywhere. And, notwithstanding these splendid attributes, every member of this important association is guilty of inexcusable conduct. It is this: They are members in name only. They might as well be foreigners. There are so many things to be done and yet they are left undone.

The next annual meeting is to be held in Topeka, next January. It is the most important meeting, in every respect, that has ever been held, so far as the best interests of improved stock and the animal industry of Kansas is concerned. Every member has time, by acting promptly, now, to redeem himself, so far as the usefulness of the association is concerned.

Every breeder in Kansas is urged and expected to think hard and suggest any thing for the "good of the order" and write his views to the Secretary of the Kansas Improved Stock Breeders' Association, care of the KANSAS FARMER. Let us have a bountiful crop of ideas, pertinent hints and wise suggestions. Anything from ten lines to a column will be in order, so that it is forthcoming at once. Please remember that this is your last time on earth to do good or prosper. Do your whole duty and let your light shine in order that Kansas may take that high rank which properly belongs to her.

Nature and Cause of Abortion.

Abortion in cows may be caused, and frequently is, by physical violence. Professor Nocard, a distinguished French savant, in a report to the government upon the subject says: "First, it is a disease of the foetus and not of the mother; second, it is caused by a bacillus which infects the intestines of the foetus and the inner lining of the womb; third, that as long as this bacillus remains in the system of the cow it will produce abortion, but it wears out in a few years; fourth, the disease is infectious but it is not known how it is conveyed." The disease is caused and spread by foul stables, overcrowding and the breathing of poisonous air. "The best way to prevent abortion," says A. Baker in the Jersey Bulletin, "is to let in the sunshine and pure air and keep the stables clean." A cow that has aborted once from the effects of an accident is liable to do so again.

Hall's Hair Renewer renders the hair lustrous and silken, gives it an even color, and enables women to put it up in a great variety of styles.

Leather gets

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

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

How to Throw a Cow.

To throw a cow, secure her by the halter to a post, then take a rope (one-half or three-quarter-inch), fasten to head or make a collar loose around neck; now pass rope between fore legs, take a half-hitch about the body just behind the fore legs, then pass along the side to secure part of body just before the hind legs and take another half-hitch about the body; two men take hold rope, step behind cow and pull steady and soon down comes cow; secure legs and you have her and can operate on her as you wish.

The Massachusetts Experiment Station made an experiment in feeding skim-milk to calves and pigs. The result showed that it was equivalent to selling milk at 35 cents a hundred.

Cooking Stock Food.

There has, from time to time, been much experimentation along the line of cooking food for live stock, and while the early experiments were often inaccurate and misleading, it is now a well-established fact



that the process of cooking the food increases its value from 25 to 50 per cent., depending somewhat upon the starch content of the food and the care of the feeder. Prof. E. W. Stewart, in his "Feeding Animals," than which there is no higher authority, says: "By good management the general feeder may reach, with raw corn, eight pounds; with raw meal, ten pounds of live stock per bushel." The practice has been found equally effectual when adapted to the uses of other animals, and more particularly is this true of dairy cows.

All this being true, the only requirement for the successful adoption of this system is a good food cooker or boiler, and for one possessing these requirements in a high degree, we direct the attention of our readers to the "Dalley," shown herewith, and manufactured by the Mitchell Machine Co., of Kendallville, Ind.

Homes for the Homeless.

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

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

"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.

ELECTROZONE

IT KILLS THE GERM An Absolute Cure for Chicken and HOG CHOLERA

Mr. JEFF. D. CRENSHAW, of Riverton, Ala., in Southern Cultivator, of Sept. 25, 1895, says in part: "After an experience of nearly a month during which time about every hog on our premises has had cholera, we have lost three out of a forty-odd killing ones—ELECTROZONE has proven to be a specific for which I go on record as saying it will cure hog cholera, and will prove of incalculable benefit to pork producers throughout the land." See, per quart bottle. Send for circulars and complete information to THE GEO. CARLETON BROWN CO., 12 Park Place, New York City. Manufactured by E. I. Troscoe Co. Used by Board of Health of New York City

Irrigation.

PROMINENT MEN ON IRRIGATION.

The *Dakota Farmer* last week published a special irrigation edition, in which were given the views of many prominent men on this special subject. From these we present the following:

FARMING BY IRRIGATION IN SOUTH DAKOTA.

(Prof. Louis McLouth, President State Agricultural College, Brookings, S. D.)

I know that historically from the beginning of human records, the richest agricultural regions of the world have been the rainless ones, where the ingenuity and industry of man have been able to provide artificial methods of watering their fields as needed. I know that to-day the most wonderful crops are raised under artificial irrigation. Now, what I know to be true wherever elsewhere tried, analogy teaches me will be true in South Dakota, and abundant experiment, moreover, proves that it is true.

An area of ten thousand square miles in the artesian basin of this State can apparently have an artesian well on each section, that will throw continuously thirty barrels of water per minute, or enough to cover the entire area with thirty inches of water per year, or three times as much as is needed for the most abundant harvests.

The simplest irrigation engineering will distribute this water as needed, and thirty bushels of wheat per acre can thereby be raised as certainly as the seasons return.

Ample experience and scientific tests have proven that this artesian water is harmless, and we have no more reason to suppose that the supply is exhaustible than we have that the snows and rains of the eastern slopes of the Rocky mountains will cease to feed the Missouri river.

I believe, therefore, that the valley of the James river, by artesian irrigation, may be made the garden of the State.

MARKET GARDEN IRRIGATION. (J. M. Miles, Redfield, S. D.)

In our business it is almost impossible to give definite yields, as we always begin to sell from our fields whenever the crop is large enough to use. You can see then that figures of yields are out of the question; we can only estimate at best. This year we had a piece containing seventy square rods in table beets of the turnip-shaped variety. We began selling them for "greens," kept on selling them as beets all summer and fall, every day from our wagon, and then took 250 bushels to put into the cellar. This, too, on land that was not irrigated a particle this year. It was thoroughly wet down last year in raising celery, and some in the winter. We estimate fully 700 bushels to the acre. On land neither irrigated last year nor this, the yield was almost nothing, probably 100 bushels of inferior beets. Onions, not irrigated, not worth gathering, while those irrigated made from 400 to 500 bushels per acre. Tomatoes, not irrigated, were a total failure, not a quarter crop and dry rotting instead of ripening. Never saw finer tomatoes than we raised this year; vines just loaded full, and many specimens weighing a pound each, and some a pound and five or six ounces.

Probably the best crop we raised by irrigation is celery. We have established the fact that we can raise as large and fine flavored celery as the famous Kalamazoo, Mich., celery. Celery has been grown in our gardens for the past eight years. We had to fight prejudice, but we have conquered, and no Michigan celery need apply for admission to our markets after the home crop gets fit to use.

To sum up, our experience for six seasons convinces us that we can grow extra fine crops of all kinds of vegetables by the use of artesian water, and that for the past seven or eight years the only way we could raise them at all was by irrigation.

FALL AND WINTER IRRIGATION.

H. W. Meserve, who has had charge of the irrigation on the famous Hunter-Salzer farm and who has had a life-

long experience in irrigation in other countries, writes us:

No one who has given irrigation a passing thought, can have failed to note the great superiority of irrigated crops (even by the imperfect systems in vogue and the utter want of experience of the irrigators), both in quantity and quality, over the non-irrigated. It seems to me the duty of every farmer who owns water, from now on is to utilize every drop he can in irrigation, even if it is only an acre for vegetables, and study for himself the practicability of spreading and using water in South Dakota. There is no doubt that the farmer has both the soil and water which can be obtained at a very small outlay of money in comparison with other countries and States where irrigation is practiced.

The main point towards successful irrigation, is to have your ditches in the right place, and a few dollars spent in the beginning for competent engineering, will save hundreds of dollars and considerable bad temper and worry later on. It is difficult to advise any one how to place ditches, without first seeing the land, but as a rule in South Dakota, I would recommend laying out the ditches as near forty rods apart as the lay of the land will permit, and following the crest of the ridges, starting in with the lower ditch, run up back furrows every six rods from that to the line, practically making basins six rods wide, by forty rods across the field. Then commence on the lower end of the ditch, make a break in it by shoveling out about three feet of the bank, letting the water run into that basin until the ground is covered from one end to the other; then cut a similar opening in front of the next basin, put a dam across your ditch, the lower side of your opening, and so turn all the water from your ditch into the basin, repeating the same until all basins have been flooded, and so on from ditch to ditch.

By laying out your ditches in that manner, you will have in a quarter section, four fields, forty rods one way by 160 the other, making plowing and harvesting easy work, and getting around the bugbear of small fields. Respecting the width of ditches, none need be over five feet wide at the bottom, for level land, and three feet for land that has a fall of from forty to sixty feet to the mile.

The main point in ditching a level country, or where the fall is not over five feet to the mile, is to have your ditch banks high enough above the level of the ground, so that your whole body of water will flow above the level without running over the tops of the banks of your ditch. Land that has a slope over sixty feet to the mile cannot be irrigated that way. Instead of back furrows, six rods apart, make a small ditch—one round of a sixteen-inch plow is sufficient—about twenty rods apart, then turn your water into those ditches, put a dam across and let the water spread both ways from that ditch for about ten rods, repeating that way until the ground under the first small ditch is irrigated.

OPINION OF UNITED STATES SENATOR PETTIGREW, SIOUX FALLS, S. D.

The average rainfall of a large part of this State, for the last twenty years, has been but fifteen inches per annum, and experience has proven that general agriculture is not a success with that amount of moisture, but this amount of rainfall assisted by irrigation will produce wonderful results. The storm water should be used; it can be stored by the use of a dam made of earth, and let upon the land when required. I believe that very large areas can be reclaimed in this way, but our main reliance is upon the underflow waters reached by wells. The supply is great and I believe almost inexhaustible. I quote the following from a speech I delivered in the Senate last year:

"Underlying the valley of the James river at a depth varying from 1,000 feet at its north end to 600 feet at the south end, is a formation of very porous sandstone about 100 feet thick. This sandstone extends westward, tending upward to the Rocky mountains, where, at an elevation of thousands of feet above the valley, its vertical edge

reaches the surface, and is crossed by all the streams which flow down the eastern slope from the continental divide. By measurement it is known that the Missouri river, the Yellowstone and Big Horn lose a large part of their volume in crossing this sandstone. To the east this layer of sandstone ends abruptly against a wall of quartzite on the east side of the valley of the James river in South Dakota.

"Several hundred wells have been sunk into this sandstone along the whole length of this valley, with the same unvarying result. In every instance a flow of water has been struck, spouting like a geyser, varying in volume from four to ten millions of gallons per day, according to the size of the well, and showing a pressure of over 150 pounds to the square inch. Some of these wells have been running for ten years without any decrease in the volume or pressure. This tremendous force is being used to furnish fire protection to the cities and towns along the valley, to run flouring mills, electric dynamos for lighting and power, and for irrigation."

Nearly the whole valley can be made the most fertile and productive and popular of any portion of the earth's surface by utilizing this water, and I know of no such sure and safe investment for capital, as the purchase of these lands and putting down wells for the purpose of irrigation. I am aware that our people are not accustomed to this mode of farming, but irrigation by wells is no experiment and has been practiced for thousands of years. In India millions of people are supported by agriculture, made possible only by irrigation from wells. In Sind, one of the provinces, 220,000 acres are covered with water from wells; in Madras, 2,000,000 acres; in the central provinces, 120,000 acres; in Coimbatore, 200,000 acres; in the Northwest provinces, 400,000 acres. It is estimated that in the various provinces of this great empire, water is drawn from not less than one million wells for irrigation purposes.

The Punjab in India has a population of over thirty millions of people and a rainfall of about fifteen inches per year. This region could support but a very sparse population by grazing, but after expending thirty-one millions of dollars in storing storm water, but chiefly from wells, it has become the most fertile and prosperous portion of the empire. The first two crops yielded a profit that returned the whole original outlay.

In the department of the Lozere, in France, irrigation has quadrupled the value of land. In New South Wales irrigation by wells has vastly increased the capacity of the country to support a dense population; in South Africa irrigation by wells is redeeming land which has not one-quarter of the rainfall of South Dakota. The province of Vildiria, in Chili, has less water than South Dakota, and finds its redemption in irrigation. Examples could be multiplied almost without end, and these examples prove to us that the day is not distant when large areas of South Dakota will be successfully irrigated, giving homes and comfort and luxury to those who engage in the work.

Investigation of Windmills.

The question of the work that a windmill will do, is one the investigation of which from the published tables of manufacturers leads only to confusion. Prof. E. C. Murphy, of the State University, has taken up the study of this important subject, from both the theoretical and practical sides, and has published a bulletin devoted to the discussion. The results attained from the measurement of the



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work done vary greatly with the several mills tested, but all fell below what the more enthusiastic windmill men claim for their machines. The following table gives data as to the construction of the mills and their work in winds of velocities varying from six miles to twelve miles per hour:

Ft. lbs. of work per second when wind is	12 Miles		10 Miles		8 Miles		6 Miles	
	Gal.	Stroke	Gal.	Stroke	Gal.	Stroke	Gal.	Stroke
Dimensions of fans	20x12x3 1/2	34x18x4 1/2	30x18x4 1/2					
Ft. lbs. per stroke	78	21	9.5	13.3	37	156.7	84.5	27.2
Quantity per stroke	1.9	1.20	1.1	1.15	1.8	4.10	1.4	1.8
Lift	84	50	9	16	33 1/4	47	16 1/2	28
Gearing	30:15	1:1	1:1	42:17	1:1	1:1	1:1	1:1
No. fans	18	96	18	18	30	136	12	24
Angle of fans, Degrees	63	50	68	68	51	61	65	51
Size	8 ft.	10 "	10 "	10 "	10 "	10 "	6 "	12 "
Material	Steel	Wood	Steel	Wood	Wood	Wood	Steel	Wood
No. of mill	1	1	1	1	1	1	1	1

In a twelve-mile wind the first eight-foot mill gave almost exactly one-fifth horse-power, while another mill of the same size gave only one-sixth as much power. The work done by any of these mills may be converted into horse-powers by multiplying the foot pounds per second by sixty and dividing the product by 33,000.

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IRVIN VAN WIE,
717-726 W. Fayette St., SYRACUSE, N. Y.

Gossip About Stock.

E. A. Bricker, owner of Pleasant Valley herd, reports that his herd is doing finely and in the best of health.

R. Scott Fisher, of Holden, Mo., writes that his pigs are doing nicely. He has some extra fine boars that are large enough for service that he is offering at very low figures.

J. S. Machir, proprietor of the Bayfield herd Poland-Chinas, reports that business is picking up and inquiries more numerous than for some months and the sales being made at satisfactory prices.

Rock Quarry herd of Poland-China swine and Hereford cattle, owned by N. E. Mosher & Son, Salisbury, Mo., is in fine shape. Just at present they have ten choice male pigs for sale, ready for service.

Col. Eli Zimmerman, the veteran Brown county Poland-China breeder, reports his coming through the September cholera tear-up with better luck than is common to the lot of Kansas breeders this year.

The lady live stock commission merchant of the Kansas City stock yards, Miss Jennie M. Goodwin, seems to appreciate the business received at the hands of stock shippers, and responds as follows: "I desire to thank all those who have patronized my house during the two months I have been in business for myself, and to say to all that aside from being my source of revenue, it is also a matter of pride with me to make this business a success."

Publishers' Paragraphs.

THE PRINCESS LOUISE and the Marquis of Lorne have collaborated in writing an article on household industries for The Youth's Companion. It will be published early in 1896.

A prize of \$150 has been awarded to D. F. Cornell, of Westfield, Pa., for an improvement in lathe carriages. The prize is the monthly award of the well-known patent firm of John Wedderburn & Co., who give this sum each month for the best and simplest invention brought to their attention

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Distinguished Contributors For 1896.

- The Princess Louise. The Marquis of Lorne. Lord Chief Justice of England. Sir Benjamin Ward Richardson. Secretary of the U. S. Navy. Secretary of the Interior. Secretary of Agriculture. Judge Oliver Wendell Holmes. Sir William Howard Russell. Frank R. Stockton. W. Clark Russell. General Nelson A. Miles. Thomas Nast. Hon. Thomas B. Reed. The Dean of Salisbury. Bishop Cleveland Coxe. Bishop W. Croswell Doane. Sir Edwin Arnold. Camille Flammarion. Justin McCarthy. Admiral Stevens. Admiral Markham. Admiral Elliot. Charles Dickens. Archibald Forbes. Frank D. Millet. Frederic Villiers. Max O'Reil. Hiram Maxim. Andrew Carnegie. Henry Loomis Nelson. C. A. Stephens. Harold Frederic.

And More than 100 Others.

uding the preceding thirty days. Cornell was brought up on a farm and had had but little experience in mechanical work when he made this invention. Other recent prize-winners in these contests are P. H. Martin, Vershire, Vt.; W. P. Gave and E. E. Katz, of San Bernardino, Cal.; Daniel Brion, Jr., of Bozeman, Mont., and A. L. Simmonds, of Geneseo, N. Y.

A complete and immediate revolution of transportation methods, involving a reduction of freight charges on grain from the West to New York of from 50 to 60 per cent., is predicted in the November Cosmopolitan. The plan proposes using light and inexpensive corrugated iron cylinders, hung on a slight rail supported on poles from a cross-arm—the whole system involving an expense of not more than \$1,500 a mile for construction. The rolling stock is equally simple and comparatively inexpensive. Continuous lines of cylinders, moving with no interval to speak of, would carry more grain in a day than a quadruple track railway. This would constitute a sort of grain pipe line. The Cosmopolitan also points out the probable abolition of street cars before the coming horseless carriage, which can be operated by a boy on asphalt pavements at a total expense for labor, oil and interest of not more than \$1 a day.

WANTED.—Buyers for blue-blooded breeding hogs. Price from \$10 to \$200. O. P. UPDEGRAFF, Topeka, Kas.

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The Home Circle.

To Correspondents.

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

THE SCOUT.

BY G. A. TANTON.

Bright is the morning Aurora has painted,
Touching the clouds with a finger of fire,
While in the east the sun is appearing,
Darkness and shadows before him retire.

How fares the courier who last night so gaily
Saddled his mustang and galloped away,
Leaving the fort and protection behind him,
Venturing alone where the red men hold sway?

Down by the river his body is lying,
Close by a cottonwood, gnarled and old,
Mangled and scalped by the hand of the savage,
Food for their hatred his life has been sold.

Only the scars on the cottonwood's bosom,
With many an empty Winchester shall,
Tell that alone, in the battle so hopeless,
The blue-coated soldier fought bravely and well.

Peace to the soldier. No grave shall receive him,
No funeral dirge, no prayers for the dead;
Forgotten by all but the Angel Recorder,
The years and the ages shall pass o'er his head.

CORNER CUPBOARDS.

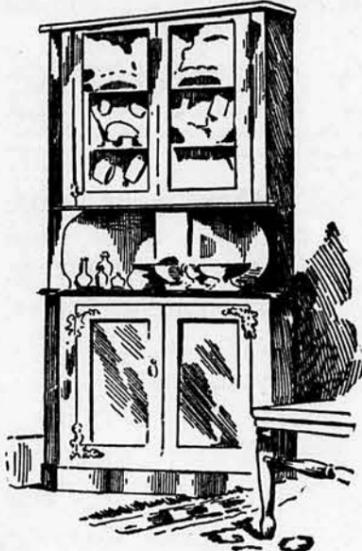
The Style of Forty Years Ago Is the Most Popular Just Now.

Corner cupboards are such extravagantly popular pieces of furniture just now that bric-a-brac dealers not only buy them readily, but send out and canvass the country in hopes of securing good specimens.

The style of forty years ago is excellent, with small panes of glass fitting the shelf space, solid brass knob for the upper door, and brass keyholes in the lower section. But they do not always appear to advantage, because frequently the owner has tried to do the cupboard over herself, and daubed its surface over with villainous red paint.

The quality of the wood can be determined by scraping off a little paint. If it shows a reddish pink it is cherry; if light color it is imitation. The idea is now to preserve the original design as nearly as possible, and to this end little renovation is made other than polishing. The windows are left intact, an extra band of molding added on the top and supports placed underneath to raise it about four inches from the floor. Claw feet, with a carved apron, surmounted by a narrow molding, are a wonderful improvement without in the least detracting from the coveted air of antiquity.

Doing over an old cupboard is very inexpensive. The article itself costs at the least from \$8 to \$12. To polish it alone amounts to \$7 more, and, adding claw feet and moldings, brings it up to a total of \$28. These prices, of course, depend to some extent on the locality,



A QUIANT BIT OF FURNITURE.

labor being cheaper in some places than others. In lieu of the claw feet balls can be used, and, indeed, many persons prefer not to have them raised at all.

Modernized cupboards are also in demand, one of the handsomest being illustrated here. The upper door was removed and a shelf cut out, leaving an open space between the lower and upper sections, and two doors with large plate-glass panels inclosing the remaining shelves. The lower doors were left intact, and brass hinges of

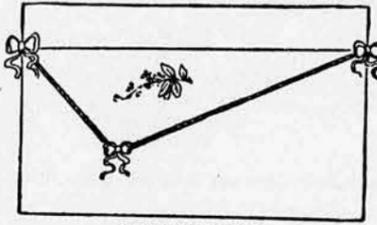
elaborate pattern serve as ornaments. The open space is lined with plate mirrors, which reflect its silver and glass contents. The interior is painted a rich cream tint, against which delicate china shows to advantage.

One carver has sent out ten new cupboards in the last two years, principally to inland cities. They have all been different in detail and splendidly handsome specimens. But the old cupboards can be made equally beautiful at less expense, and for some reason their very age makes them more desirable than the strictly modern affairs. —Kennet Wood, in Chicago Record.

VIOLET NECKTIE CASE.

Something Useful for Gentlemen of Fastidious Tastes.

A very dainty gift for a gentleman is a necktie case, and the one described cannot fail to please the most fastidious taste. The materials required are violet-colored plush and cream-colored satin, each twelve by twenty-one inches, and one and a half yards of two-inch cream color ribbon, and nearly two yards of silk cord. Cut one end of both materials as shown in the illustration, sew the two pieces together



NECKTIE CASE.

with layers of wadding, sprinkled with sachet powder between, and finish the edge with the silk cord.

Turn the revers back at one end and fasten the point to the case.

Turn two inches of the other end down over the revers and secure at each end under a bow of ribbon; place a bow on the point of revers.

A bunch of violets should be either painted or embroidered with Asiatic fillo on the satin revers before putting the pieces together.

The neckties are to be slipped in at the end.—Good Housekeeping.

Out of Love for His Mother.

A notable case of filial love came to light in Pittsburgh a few days ago, says the New York Sun, when a seventy-six-year-old son came to the office of an aid society to claim his mother, from whom he had been separated by the long illness of both. It was shown that the man had remained a bachelor all his life in order to care for his mother. They came from Ireland thirty years ago, and had lived together since that time, as they had previously in the old country, until five months ago, when both were taken sick and had to be removed to a hospital.

Dainty Table Appointments.

However simple the bill of fare, the table appointment should always be clean and inviting. With a little care directed toward removing a spot when it appears, a tablecloth may be used to serve for several occasions, and remain spotlessly clean; while a rumpled napkin or a coffee stain upon the tablecloth is accountable for many an uneaten breakfast and many a sick headache. The center of the table should always be occupied with some refreshing plant or flower. It may be fern or a slender rose in its swaying vase, but whatever it is it will act as an appetizer and tonic. A crisp bowl of lettuce or a dish of fresh radishes helps out the effect of the floral decoration.

How to Make Breadsticks.

Mrs. Rorer's formula for making breadsticks says: Pour half a pint of boiling water into half a pint of milk. Add a teaspoonful of warm water. Now stir in sufficient whole-wheat flour to make a stiff dough. Turn it out on the board, knead until soft and elastic and free from stickiness. Place in a bowl, brush the top lightly with butter, and stand aside for three hours. Then turn out on the board, cut off a small portion and roll it out under the hands about ten inches long and twice the thickness of a lead pencil. Place in greased pans, stand aside one hour, and bake in a quick oven ten minutes. Special pans come for these sticks, but they are not necessary, as they will bake in any bread pan.

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

Royal Baking Powder

ABSOLUTELY PURE

CONSIDERS THEM UGLY.

Miss Ada Sweet's Opinion of Bloomers and Bloomer Girls.

"Bloomers are so ugly and unbecoming," said Miss Ada C. Sweet, ex-United States pension agent at Chicago and one of the leading spirits in all movements for the advancement of women, to a Chicago Tribune reporter, "that I am sure in a short time women will cease to wear them; thus the bloomer question will settle itself. Neither bloomers nor knickerbockers for me, and I think the latter are as unbecoming to men as to women. The most sensible costume to my mind is a moderately short skirt worn over knickerbockers and a comfortable waist and hat. Everyone should suit themselves as to the length of their skirts. Any immodesty may be prevented by the use of gaiters. If the skirt is short, long gaiters should be worn; if it is a good length, shorter ones will suffice. At all events bloomers are unmitigatedly ugly. I never saw a woman yet they were becoming to. Then these baggy sleeves one sees are as unbecoming as the baggy trousers. A reasonably full sleeve looks well, but the loose, floppy sleeves added to the bloomer costume make a perfect spectacle of the woman wearing them." Miss Sweet laughed heartily when asked if she thought the morality of the community was affected by the bloomer costume.

"Certainly not," said she, and then she added: "It don't affect mine."

"No, but how about the people wearing the bloomers?" was the next question.

"I am sure it doesn't affect theirs. either. I don't see how anyone's dress could affect their moral character. Dress is the index of character; in fact, an outgrowth of the character, but dress does not affect character. A



ADA CELESTE SWEET.

modest woman will dress modestly everywhere and at all times. If by chance a modest woman gets on an immodest dress and finds it out she'll take it off. A well-dressed woman is never conspicuous, and will be well dressed and never conspicuous on a wheel as well as on the street. When all the badly-appearing women in bloomers find out people of good taste regard bloomers as not in good taste they will take them off. I regard the matter purely an esthetic one, and a matter of taste and not of morals. It is the same in other details of dress. Once convince the woman who who wears white shoes on State street that she is guilty of bad taste for good and sufficient reasons and she won't walk again in white shoes. I don't believe in ridiculing the bloomer girl or in calling her immodest or immoral. I like all girls and I want to see them happy, healthy, joyous and good to look upon. They can't be in bloomers. I want to see them take them off."

The plumes worn by the ladies who attend Queen Victoria's drawing-rooms are hired from a shop which makes a business of renting out plumes. The feathers are worth one or two pounds, and the rent of them is five or six shillings for each occasion.

THE ARAB BELLE.

Her Intricate Process for Perfuming Her Body and Raiment.

This is how an Arab lady perfumes herself: In the floor of the tent or hut, as it may chance to be, a small hole is excavated, sufficiently large to contain a common champagne bottle. A fire of charcoal, or of simply glowing embers, is made within the hole, into which the woman about to be scented throws a handful of drugs. She then takes off the cloth, or "topa," which forms her dress, and crouches over the fumes, while she arranges her robe to fall as a mantle from her neck to the ground, like a tent.

She now begins to perspire freely in the hot-air bath, and, the pores of the skin being thus open and moist, the volatile oil from the smoke of the burning perfumes is immediately absorbed. By the time the fire has expired the scenting process is completed, and both her person and her robe are redolent with incense, with which they are so thoroughly impregnated that I have frequently smelt a party of women strongly at fully a hundred yards' distance when the wind has been blowing from that direction.—Pearson's Weekly.

Toothsome Breakfast Cakes.

One quart of sour milk, one teaspoon of soda, two eggs well beaten, flour enough to make a good batter, bake in griddles, make each cake about as large as a pie plate. When each cake is done butter well, and spread with sugar and cinnamon, pile up like a layer cake, then cut down in quarters. It is fine.

The Art of Pouring Tea.

Few hostesses understand the art of pouring tea and coffee, simple as it appears. As a rule the guest of honor is offered the first cup, which is the weakest, and the children, if served at all, are given the last and strongest. When it is desirable to have all the cups of uniform strength one should pour a little into each and then begin over again, reversing the order. In England this is so well understood that a pourer of tea or coffee does not begin to replenish the cups till are before her.

Draping the Backs of Pianos.

The upright piano is now placed universally, as it should be, with its back to the room, instead of to the wall. The back of the instrument has therefore become an objective point for the display of a rich or quaint piece of embroidery. A bit of old Indian wool embroidery, a queer, brilliant-hued mandarin robe, a piece of oriental satin embroidered in many hues, or almost any picturesque piece of work, can be utilized for this purpose. A very pretty effect may be obtained by selecting a satin in one of the leading tones of color in the room, and embroidering it with flowers in a free, sketchy way, and then draping it gracefully over the back of the piano, rather than hanging it stiffly.

New Idea for Church Weddings.

A novel idea for a church wedding has set the fashion in a rural village in New England. On a recent occasion, following the bride and her maid of honor were two charming little girls six or seven years of age, who made a beautiful picture. In their hands they carried straw baskets gaily trimmed with ribbons. These baskets were filled with every kind of flowers, field grasses, and delicate ferns. As the bride came down the aisle these little girls at quite a distance in front of her, threw these flowers right and left in her pathway, until they reached the church door. They then separated, letting the bride and her party pass by. This pretty bit was most cleverly done, having been rehearsed many times before the event took place.

The Young Folks.

A CONTENTED FAMILY.

A one-eyed fish, and a three-legged frog,
And a tadpole without any tail,
All live together this autumn weather,
In Bobby's mamma's pail.

The pail is the wide, wide sea to them;
For the lop-sided frog and fish,
When straight they're bound, swim round and
round,
And are happy as heart could wish.

While the tallest tadpole floats at his ease,
And could do no more—could he?
For with no hind end he couldn't swim,
Though he lived in a boundless sea.

And mamma says, "Lop-sided folks,
Who swim around and round,
Are not very rare"—so, Bobby, beware,
And go straight where you are bound.
—Frank Leslie's.

TOMMY'S DREAM.

"No, Thomas, no," his good nurse said,
"Indeed you shall not take
At tea-time such a very large
And plummy piece of cake."

In vain it was for nurse to speak,
Young Thomas paid no heed;
The slice of cake, both plum and crumb,
He ate with eager greed.

But, ah! that night, when all the house
Was wrapped in slumber deep,
Then Thomas had a dreadful dream,
For he was fast asleep.

He dreamed that he was a plummy cake
Of most enormous size;
The icing was his nose and mouth,
And currants were his eyes.

He dreamed the door swung softly back,
The dream man entered in,
And spectacles were on his nose,
And bristles on his chin.

He held a great knife in his hand,
And tiptoed to the bed,
"Oh, pray don't eat! I'm not a cake,
I'm Tommy," Thomas said.

In vain to speak, for Thomas knew
He looked too brown and nice;
He saw the dream man raise his knife
As if to cut a slice.

And then—young Thomas shrieked and woke,
And sat up straight in bed,
"Oh, dear! I'll never eat rich cake
Again at night," he said.

VIDOCQ'S MANY TRICKS.

A Black and Tan Whose Intelligence Is
Really Remarkable.

Julius Mentz, of Bay Shore, L. I., has
a black and tan ratter which he calls
Vidocq, because he thinks his dog is
as sharp as any detective that ever
lived. Vidocq is none of your common,
ordinary dogs, with only dog sense
enough to bark when a ragged tramp
comes to her master's door, and she
is not only educated, but accomplished.
She was never a circus dog, but always
kept good company, and her tricks are
only performed for the amusement of
her master's friends and such visitors



VIDOCQ SINGING.

to Bay Shore as, having heard of the
dog, may wish to see her. Vidocq is the
mother of four puppies, and all her
children do their mother and their mas-
ter proud by the accomplishments
they have mastered in their one brief
year of life.

Vidocq does twenty different tricks.
They are, prayer, roll over, dead dog,
sit up, walk on hind legs, dance, sing,
smoke, just like grandpa, loss of one
arm, loss of both arms, ashamed, every-
body's dog, watch him, jump through
hoops and over bars, speak, good girl,
next Vidocq.

It is very amusing indeed to see her
go through some of these tricks. Her
master says: "Come, Vidocq, it is
time for you to say your prayers."

Up on a chair the little dog jumps,
puts her little head down between her
paws, closes her black eyes and waits
for the amen, when she jumps down
from the chair and runs to her master,
her face expressing clearly her joy
that church is out. When told to sing
she commences a something in the dog
singing line which might be consid-
ered a burlesque of the dead march in
"Saul." One of her most fetching
tricks is when she poses as ashamed.
She puts her two black paws up over
her nose, shuts her eyes, and looks for
all the world as if she had been doing
something she was ashamed of. Then
her master says: "Well, what have
you been doing now? Have you been
doing something naughty in the house?
Never mind, I'll forgive you." At the
words: "I'll forgive you," Vidocq runs
to her master and jumps joyfully
around him expressing in her dumb
way how sweet 'tis to be forgiven for all
offenses.

The trick which cost him the most
time and patience, for it required a vast
amount of patience, was a trick in
which the dog poses as a blind beggar.
Vidocq jumps up in a chair, Mr. Mentz
puts a ticket on her neck, upon which is
printed: "Please help the blind." Un-
derneath this placard is a little tin box
in which the pennies of the generous
can be dropped. This box the dog
holds between her fore feet. She
shuts her eyes and sits there begging
until her master says: "Oh, I do not
believe that dog is blind. This is only
a fake." Then Vidocq opens her eyes
and fairly grins at the joke she has
been playing.

To be "Just like grandpa" she sits
in a chair, a pair of spectacles over her
eyes, pretending to be reading. The
captivating feature about this trick is
the way she looks up over the top rim
of her spectacles, so like an old person.

Again, Mr. Mentz will say: "Now,
Vidocq, you and I have every reason to
be thankful that we live in a place in
which we can get a Sunday morning
shave and hair cut. We will do that
little job for one another. I'll com-
mence with you." At the word "next"
Vidocq jumps up into a high-backed
chair, leans back and lets her face be
washed.

Vidocq is a very friendly dog and is
apt to jump up in the lap of any caller,
but as soon as her master says: "Well,
are you everybody's dog?" she jumps
down and no coaxing or bribing can
bring her back.

Vidocq's puppies are Hector, Fido,
Bruno and Venus.—Brooklyn Eagle.

Recognized the Poet Laureate.

A singular example of absorption in
a chosen specialty is furnished by an
eminent Scotch surgeon and professor.
The late Lord Tennyson once consulted
him about some affection of the lungs,
and some years afterward went to him
again on the same errand.

On being announced, the poet was
nettled to observe that the surgeon not
only did not remember his face, but did
not even recognize his name. He men-
tioned his former visit. Still the sur-
geon failed to recall him.

Then the surgeon put his ear to his
patient's chest.

"Ah," he said, "I remember you now.
I know you by your lung."—St. Louis
Republic.

Tommy's Suggestion.

Mamma—You should always take the
smaller piece of anything offered. You
just took the larger piece of cake and
left the smaller piece for your elder
brother.

Tommy—But, mamma, as Willie is
my elder, I think the plate should have
been passed to him first.—Harper's
Round Table.

A Spat at the Museum.

"You are a fraud!" cried the Fat Man
to the Living Skeleton. "I can see
through you."

"Of course you can," retorted the Liv-
ing Skeleton. "That merely proves
what a living skeleton I am."—Harper's
Round Table.

How Papa Was Pinned Down.

"Papa, I've got some mending for
you to do. My roller-skates are broken."

"Well, put them away till morning.
It's too late to mend anything now."

"Why! you said this morning that it
was never too late to mend."—Harper's
Round Table.

TOMMY AND TOODLE.

The Reason Why a Pug Dog Stole a Little
Girl's Doll.

"Tommy, where is Toodle?"

Tommy sat up on his hind legs and
hung his paws beseechingly. That was
his way of saying: "I don't know
where my dear Toodle is myself, but if
you will find her for me I will be very
much obliged."

Tommy is a pug dog and Toodle is
his dolly. He loves her as much as if
he were a little girl; its mistress has
never allowed other little boys to laugh
at him for playing with a doll.

It was his mistress who was asking
him about Toodle now; she was a pret-
ty young lady named Miss Fanny.
"Tommy," she asked again, this time
very slowly and solemnly, "where is
Toodle? Poor Toodle. Tommy doesn't
love Toodle. Where is Toodle?"

Tommy saw she was not going to
find his doll for him, so he gave a sharp
little bark as he got down onto his
four legs again and ran out of the
house.

It was in the summer and he was liv-
ing in a cottage on a quiet seashore
where the front doors stood open all
day long. Tommy knew all his neigh-
bors and now he trotted over to the
next house. There there was a
little girl named Mabel. Mabel was
playing with her doll Amy. She was
bigger and prettier than poor Toodle,
who was only rubber.

"Have you seen Toodle?" asked
Tommy, but Mabel had never learned
dog talk, and she only dropped her doll
and began to run away, crying: "Tom-
my's barking at me, I'm 'fraid."

Then Tommy did a dreadful thing;
he picked up Amy in his teeth and
broke for home with her as hard as he
could go, and when Mabel saw that she
began to cry in good earnest.

Tommy went straight to Miss Fanny
and showed her the baby he had kid-
naped, but he began to run again
whenever she tried to come near him;



Mabel soon followed, panting and sob-
bing out: "He'll kill her! O, Miss
Fanny, he'll kill her!"

"Don't run after him, or he will by
accident; he doesn't mean to hurt her,"
said Miss Fanny, while Tommy walked
sedately out onto the back porch and
lay down with Amy still in his mouth.

"Do you know where Toodle is?"
said Miss Fanny, and Mabel under-
stood her, and said yes. Toodle was at
their house on the garret stairs, where
Tommy had left her. You see Tommy
had remembered leaving her there
when he went over and asked Mabel
about her.

"You go get her," said Miss Fanny.

"I'll watch him while you are gone,
and he'll give up Amy when he sees his
own dolly."

And sure enough that was just what
he did; Amy was prettier, but poor
rubber Toodle with no clothes on was
the one he loved. He gave one look
when Miss Fanny showed him to her,
and then ran and grabbed her in his
mouth, and settled himself with her
just as you see him on the picture.
Miss Fanny photographed him.

"Isn't he naughty, Miss Fanny, don't
you think he is?" said Mabel, after she
had gathered Amy to her bosom and
made up her mind to play she'd been
carried off by a lion.

"Well, he's an only child, you know,
and only children are always spoiled,"
said Miss Fanny, but the truth was
she thought he was the sweetest dog
in the world.—Chicago Inter Ocean.

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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 prices of wheat and corn, hogs and cattle are still declining.

It is reported that the recent earthquake restored the original pressure to such of the Indiana gas wells as had suffered reduction.

The consumption of meat in France is stated to be seventy-seven pounds per capita per year. In the United Kingdom it is reported to be 109 pounds.

Acting Secretary Barnes of the State Horticultural Society has engagements to speak before county horticultural societies, at Salina to-day, at Manhattan to-morrow, and at Lawrence on Saturday.

A comparative statement of the receipts of live stock at the Union stock yards, in Chicago, for the months ending October 1, 1894, and October 1, 1895, prepared by J. C. Dennison, Secretary, shows a decrease of 34,335 cattle, 5,460 calves and 604 horses, while an increase is shown amounting to 230,062 hogs and 21,557 sheep.

The twenty-ninth annual meeting of the Kansas State Horticultural Society will be held at Lawrence, December 10, 11 and 12. The program names eighteen papers, three of which are by professors in the State Agricultural college. Four addresses in addition to these papers will be presented. Chancellor Snow, of the University, is down for one of the addresses. Ample exhibition tables will be provided.

The new KANSAS FARMER binder is made expressly for the convenience of those subscribers who desire to keep their KANSAS FARMERS for reference. It takes but a few seconds to put the paper in it when received. The binder holds fifty-two numbers, and keeps the papers in as nice shape as if they were a book. The price is 25 cents, post-paid, or \$1.10 for the binder and the FARMER one year. Send your own renewal for one year and a new yearly subscriber, with \$2 for both, and we will send two binders, one for yourself and one for the new subscriber.

The KANSAS FARMER will contain, next week, one of the most interesting and important contributions yet made to the knowledge on which the highest success of Kansas agriculture is to be built. It is an illustrated description and discussion of the root growth of corn, by that untiring investigator, Prof. H. R. Hilton, of Topeka. The illustrations are made from photographs of the roots of Kansas corn of this year's growth. These roots were, by careful work, exposed to the camera without removing them from the positions in which they grew. The FARMER has been at considerable expense to present this matter to its readers, but feels sure that its value to every corn-grower will be such that this expense will be fully justified.

SOME OF THE MEANING OF THE ELECTION.

The results of the elections of last week can scarcely be called surprising in any of the details.

In Kansas, the election of Chief Justice Martin to succeed himself was a foregone conclusion, when it became evident that his eminent qualifications for this high office were recognized by all parties. So, also, his concurrence with the views of the great majority of voters of all parties in Kansas on important questions of public policy assured the support of everybody who had not some special interest to promote. Except for special interests there would probably have been no second candidate. It appears that the chief object of the candidacy of Charley Holliday was to secure an expression on the prohibitory provision of our constitution. Possibly his vote does not measure the full strength of that element in Kansas, but it is probably the most accurate indication of that strength since the gubernatorial candidacy of Hon. Charles Robinson. At this writing the full returns have not been tabulated, but it is generally conceded that Judge Martin had at least three votes to every one cast for Charley Holliday. Possibly a vote on the simple question of resubmission of prohibition to a vote of the people would make a stronger showing against this provision, but there can be no doubt of the fact that the great majority of the people of Kansas propose to hold to such temperance legislation as we have until other and more effectual can be secured.

As between the two great parties in Kansas, the Republicans and the Populists, the county election returns have not been reported with sufficient fullness to make accurate comparisons possible. Both parties claim to have made gains, and present probabilities are that these gains substantially offset each other, leaving the aggregate relative strength of the two parties about as at the last election.

In other States, in which State elections were held, the tidal wave which last year seemed to sweep everything toward the Republican fold has been repeated. It has been remarked by a prominent Democratic politician, Senator Brice, of Ohio, that the Republican convention of next year will name the next President. Indications certainly point strongly in that direction. The elections are certainly no endorsement of either President Cleveland or his party.

The legislation which may be expected is a matter of interest, as affecting industrial and financial matters. Further reduction of tariff rates may be assumed to be out of the question. It is doubtful whether any general advance in duties will be made, for party managers have not forgotten that after the enactment of the McKinley law the party went down in defeat. The defeat of the Democracy immediately after the passage of the Gorman-Wilson law may also serve as notice that while the people are willing that politicians talk about the tariff and abuse each other on account of adverse tariff views, yet they desire stability of conditions and are likely to express at the polls at their first opportunity their disapproval of violent changes.

Financial questions are really the live issues on which legislation is generally expected. The silver question is likely to be put forward in the next campaign and a strong effort will probably be made to repeal or amend the laws under which government obligations can lawfully be paid in silver. The usage of the administrative branch of the government has for some time been to treat silver as redeemable in gold. If, however, an administration should decide to exercise its option of paying silver as well as gold for government obligations, the silver question would be largely settled according to the views of the advocates of silver money. Financiers will want such legislation as make this impossible.

The present administration has favored the retirement of the greenbacks and the substitution therefor of State bank paper money. The conversion of the national bank circulation into this State bank paper has also been spoken

of. Republican ascendancy is likely to at least cause considerable conservatism in these matters. Every party has a pride in its traditions and its record. The greenbacks were created by the Republican party in days when history was made. Their validity, their utility and the great improvement they constituted over the State bank paper which they displaced, were the subjects of some of the ablest campaign addresses of the nation's leaders. It is scarcely to be supposed that the party will now favor the utter abandonment of the greenbacks. Neither is it likely to admit that State bank paper money can be as good as national bank notes. On the other hand, a demand for the retirement of the silver certificates and the Sherman notes by substituting therefor a government interest-bearing bond which can be used as a basis for further issues of national bank notes, is already suggested.

THE SHRINKAGE OF CORN.

A large experiment, determining the exact amount of shrinkage of corn in a crib, has been described, and may be summarized as follows:

Husking began October 22 and ended December 17. Every day while it was going on one of the proprietors remained at the office, and weighed every load of corn that went into the crib, and recorded its weight. The quantity footed up exactly 16,155 bushels, of seventy pounds each. From November to March the price offered for corn by local dealers was stated to be 38 cents per bushel of seventy pounds. June 1 the price went up to 52 cents, and the corn was sold, to be delivered at an elevator three and a half miles distant, early in July. When the time for delivery arrived, the same proprietor who had weighed the corn in took charge of the scales and weighed it out as it came from the crib; it was again weighed at the elevator, the total weights varying only a few pounds. The amount taken out was 14,896 bushels, showing a total shrinkage of 1,259 bushels, or a little more than 7 7/8 per cent. It is stated that the season was not an extra good one for corn, and the crop averaged only medium. When the husking began the corn was in fair condition. Very little rain fell during the winter, and only a few showers in March and April, and May and June were very dry. The question of the profit of holding is easily figured, in dollars and cents, from the above data.

If the corn had been sold immediately, as husked, at the current price—38 cents per bushel—it would have netted \$6,138.90. By holding until it was sufficiently cured to handle safely in bulk, \$7,746.12 was realized, or an advance of \$1,607. A large experiment of this kind is far more significant than any with small quantities, and made in other than the usual way of cribbing corn. It should not be assumed, however, that 7 7/8 per cent. will be the exact loss, but if the corn is well protected, both from the weather and from the rats and mice, it is probably safe to assume that a shrinkage of less than 10 per cent. will surely occur between gathering time and the next summer. With well-matured corn, in a dry climate, most of this shrinkage occurs quite rapidly soon after gathering, but in damp weather corn absorbs considerable moisture, even if it has been well cured.

The question of the best time to sell corn cannot be answered in any general way. The eccentricities of markets are such that losses are sometimes realized, as well as gains, from holding, but in general the speculator who holds corn expects to make money out of his holding, and, though sometimes disappointed, it may be safely assumed that those who make a study of markets do not universally misjudge the market. It is certainly bad policy to force corn on the market when nobody wants to buy it, and the fact that corn can be kept with moderate loss in weight is one to be taken into consideration by every corn-grower in determining whether it is better to hold or to sell at present prices. As to the present season, it is becoming generally known, now, that the crop of corn has been

largely over-estimated, and it seems not unlikely that before corn can again be grown considerably better prices will be realized than are now to be had.

A FAIR EXCHANGE.

There occurred last week, at New York, a marriage which has set two continents to talking and which has been dignified by calling it an international wedding. Besides a marriage of a young woman of American birth and breeding to a young man of English nativity, it was a union of a princely American fortune and one of the most prominent ancestral titles in England. The fact that these two young people concluded to get married was not, of course, the occasion for all the comment. But the fact that \$10,000,000 and some other millions, with some odds and ends, among which was a young lady—an estimable young woman, for aught that is known of her—were acquired by the Duke of Marlborough, who in turn makes the lady a Duchess, is a trade of some moment.

It may be recalled that some years ago the father of the present Duke of Marlborough, being a grass widower and also in need of cash with which to keep up his ducal establishment, married an American woman of large fortune, who has generously devoted the needful dollars to the repair and rehabilitation of the house of some two hundred rooms and to rescuing the place from incipient ruin. When this woman's husband, the late Duke of Marlborough, died, and the woman married another peer, the divorced wife became the dowager Duchess. The first wife's son, who, with his mother and other members of the family had lived in unobtrusive fashion after the divorce, became, on his father's death, Duke of Marlborough, and came with his family into possession of Blenheim castle, notwithstanding the fact that the second wife had expended a vast sum—estimated at some seven millions of dollars—upon it. Strangely enough, the second wife liked the first wife's children, and her interest in the young Duke was very great. Some months after her marriage to another English Lord, she took in hand the making of a wealthy match for the young Duke of Marlborough. Her success in matching him with Miss Vanderbilt has just culminated. It has been suggested that a commission of two million was paid to her for this piece of match-making, but this is doubted, for, notwithstanding her immense expenditures in England, she is still extremely wealthy.

To the match between the two young people there is no apparent cause for objection. The hereditary title of Marlborough, one of the highest in England, needed money. Mr. Vanderbilt was willing to settle it in vast amounts with his daughter.

The question as to whether it will prove a happy marriage, if answered on the probabilities, would have to be answered in the negative. The young Duke, if not already a fast young man, will be an exception to the average in such cases as his if he does not sooner or later—probably sooner—become such and break her heart. But, then, what could the young woman do? The wealth is hers through no fault of her own. Had she bestowed it upon some obscure young man that obscure young man would, with almost unerring certainty, be ruined by it and he, too, would break her heart. Young men of sufficient character to withstand the surroundings in which such a marriage would place them are not to be had for the money. The possession or prospect of so great wealth made it nearly impossible for her to engage in any pursuit other than the pursuit of pleasure. She has probably done the best she could. The young Duke, her husband, has done well in marrying money enough to run his costly castle. But the young woman who is not a mere adjunct of an immense fortune, who may marry the man she loves and with him fight the battles of life, with him establish a home of love and happiness, with him accomplish life's work and partake of life's joys, has an incomparably more-to-be-envied lot than has the young lady who is now a figure under the name and title, Her Grace the Duchess of Marlborough.

KANSAS CROPS, 1895.

The State Board of Agriculture issued yesterday (November 12) its final crop bulletin for the year, in which the item of foremost interest is, of course, that showing the yield of corn.

The following table shows by counties the acres reported to assessors in March as then likely to be planted; also the acreage as reported to the Board by its correspondents, June 15, after much of the land previously sown to wheat or oats which failed had been replanted with corn; the yield given is based on the entire acreage reported planted at the later date:

Table with 3 columns: Counties, Acres returned by assessors in March, Acres reported June 15, Product in bushels. Lists counties from Allen to Wyandotte with corresponding acreage and product values.

*Acreage for 1895 estimated.

It will be somewhat disappointing to those who have not revised their estimates made in June or early July and largely justified by the conditions prevailing at that time; also to those who, in the face of facts plain to the careful, unbiased observer, have loudly insisted that the output would be double what the men who raised and who are harvesting it—and who of all others must know—now declare.

her proud position as one of the four banner corn States of the world. The total product is 201,457,396 bushels, an average yield on the entire area planted (8,394,871 acres) of twenty-four bushels per acre.

Total yield of winter wheat amounts to 15,512,241 bushels on the 4,056,514 acres sown, or 3,179,908 bushels more than the growers at the beginning of harvest estimated for the acreage then regarded as likely worth cutting.

The area sown to winter wheat the present season is estimated as about 70 per cent. of last year's sowing, or 2,839,559 acres. This notable decrease is accounted for by everywhere low prices of the product, inability in many localities to secure a supply of satisfactory seed, and unfavorable condition of the soil, except in a very few counties, from extreme dryness at sowing time, for either plowing, seeding or germination.

The total yield of rye is 1,655,713 bushels, on 179,871 acres; worth 37 cents per bushel, or \$623,625.13.

Irish potatoes, 7,635,866 bushels, on 96,228 acres; worth 33 cents per bushel, or \$2,506,358.

Sweet potatoes, 372,429 bushels, on 4,321 acres; worth 37 cents per bushel, or \$137,714.41.

Oats, 31,664,748 bushels, on 1,606,343 acres; worth 17 1/2 cents per bushel, or \$5,620,188.

Barley, 1,690,545 bushels, on 118,805 acres; worth 26 cents per bushel, or \$441,431.

Buckwheat, 6,598 bushels, on 873 acres; worth 47 cents per bushel, or \$3,101.

Sorghum planted for forage or seed, 233,137 acres; value, \$1,894,356.

Sorghum planted for syrup or sugar, 29,593 acres; value, \$639,596.

Kaffir corn, 184,198 acres; value, \$1,668,389.

Jerusalem corn, 31,923 acres; value, \$262,278.

Millo maize, 16,377 acres; value, \$125,451.

Millet and Hungarian, 638,232 tons, on 301,672 acres; value, \$3.21 per ton, or \$2,048,761.

Broomcorn, 30,255 tons, on 134,487 acres; worth \$40.40 per ton, or \$1,222,300.

Timothy hay, clover, alfalfa and prairie hay cut in 1895, value (approximately), \$9,807,000.

Cheese made, 729,494 pounds; value, \$76,596.87.

Butter made, 31,190,365 pounds; value, \$4,054,747.45.

LIVE STOCK.

The numbers of the different classes of live stock in March and their values based on their average prices for the year is as follows:

Horses, 852,789 head; average value, \$28; total value, \$23,878,092.

Mules and asses, 95,160 head; aver-

age value, \$34; total value, \$3,235,746. Milch cows, 517,254 head; average value, \$24; total value, \$12,414,096. Other cattle, 1,258,919 head; average value, \$19; total value, \$23,919,461. Sheep, 136,520 head; average value, \$2.40; total value, \$327,648. Swine, 1,666,221 head; average value, \$5.50; total value, \$9,164,215.50. Total value of live stock, \$72,939,258.50.

There are no diseases of live stock reported except the so-called "cholera" among hogs, and this is common in counties where they are most numerous; the losses from this little-understood scourge have been enormous.

Kansas is overflowing with both forage and grain and could winter to great advantage vast numbers more of cattle and swine than are now obtainable at prices likely to permit a profit.

SUGAR BEETS AS HOG FEED—SOME CHEMISTRY OF FEEDING.

EDITOR KANSAS FARMER:—Can you or any of the readers of the KANSAS FARMER give me any information as to the merit of sugar beets for hog feed in the fall and winter, and cannot you fatten a hog on them as well as with corn? What do you consider the best manner of feeding them? Can you also give me the chemical analysis of it, showing its nutritive value? If answered through the columns of the FARMER, please inform me of the date of the appearance of the answer.

C. M. LESLIE.

Hoxie, Kas., November 5, 1895. Experience with feeding sugar beets to hogs, while not large in this country, is in favor of their use as a part of the ration.

Chemically, feeding stuffs are analyzed with reference to their contents of water, ash, protein, fiber, nitrogen-free extract or carbohydrates, and fat. Water derived from feed is no better than that pumped from a well, and with the ash and fiber is treated as of no value in feeds. Protein is generally designated as the flesh-former, while nitrogen-free extract and fat are regarded as the fat and heat-producers. Nitrogen-free extract includes sugar, starch, glucose and kindred substances—also called carbohydrates—and, while not equal to fat in producing fat and heat, the fact that these substances and fat serve much the same purpose in nutrition, they are usually considered together. The substances in feeds are thus reduced to two groups. The relative quantities of these determine what is called the nutritive ratio, and when other things are equal, the effect of the feed varies with this ratio. The usefulness of foods for specific purposes is not, however, dependent upon this alone, but has to do also with digestibility and other conditions.

The accepted averages of analyses of sugar beets, as raised for feed, and some of the well-known grains, are as follows:

Table with 6 columns: Water, Ash, Protein, Fat, Nitrogen-free extract, Fat. Lists values for Beets, Corn, Barley, Oats, Wheat.

It may be supposed, from the large percentage of water contained in beets, that they constitute what is sometimes called a "washy" feed. They are excellent, however, as a corrective to the excessive dryness of grain and cured forage, and are fed to advantage as a part of the winter ration to all kinds of stock. The sugar in them tends to fatten, but their composition, aside from the water, ash and fiber, is such as to make them less an ideal fattening food than corn. In the several feeds enumerated in the above table the ratios of the protein (flesh-former) to the carbohydrates and fats (fat-formers) are as follows:

Table with 2 columns: Feed, Ratio. Lists ratios for Beets, Corn, Barley, Oats, Wheat.

The table marks beets as a good milk-producing feed, provided they are not fed in such quantities as to impart an unpleasant taste to the milk. Beets are not so good fat-

formers as corn, barley or wheat, but are better in this respect than oats.

The proper proportions of digestible food materials for the several domestic animals has been a subject of considerable investigation, but the results generally relied upon are those deduced some years ago from a large number of experiments by Wolff, a German experimentalist. In Wolff's tables, the feeding period for swine is divided into three parts and the quantities of digestible food materials required per day per 1,000 pounds of live weight, are given as follows:

Table with 2 columns: Period, Protein, Carbohydrates and fat. Lists values for First, Second, and Third periods.

Reducing these to ratios, we have, as the proper ratios for fattening swine:

Table with 2 columns: Period, Ratio. Lists ratios for First, Second, and Third periods.

It should be remarked that Wolff's experiments were made with hogs which had not been bred to the use of corn as have ours in America. But it is quite possible that American swine would be more healthy if fed at least during their younger days on food containing larger percentages of protein than are found in corn. For this purpose beets are good. Skim-milk is also unsurpassed. The reader will not fail to notice that the average nutritive ratio of beets almost exactly coincides with the ratio of Wolff's standard for fattening swine during the first period. Corn or wheat with an admixture of sugar beets may be made to exactly meet the requirements of the second period. For the third period there is no food that exactly corresponds with the requirements, but corn, both in theory and practice, is found to be excellent.

RUSSIAN WHEAT RESOURCES.

In its paternalism the Russian government excites the condemnation of the rest of the world by the severity of its treatment of political offenders. This same paternalism appears to take pretty good care of its farmers, as is shown by the following, which is quoted by the New York Journal of Commerce from the London Statist:

"If Russia could export 10,000,000 quarters of wheat a year from the crops of 1889 to 1892, which averaged 31,600,000 quarters, she could have exported twice that amount in each of the last two years, the crops of which amounted respectively to 43,000,000 and 48,500,000 quarters. But the exports were only about 15,000,000 quarters, leaving a surplus of 10,000,000 quarters for the two years to be added to the current crop, which is said to be little above the average from 1889 to 1893. In spite of the surplus, Russians are not selling freely at present low prices; the government makes loans to the farmers on easy terms to help them carry their grain, and it supplies them abundantly with information regarding the condition of the wheat market of the world, so that the Russian producers and exporters are not in haste to part with the grain they have."

WANTED.—Buyers for blue-blooded breeding hogs. Price from \$10 to \$200. O. P. UPDEGRAFF, Topeka, Kas.

KANSAS FARMER and Semi-Weekly World (N. Y.), you can have for \$1.65 one year.

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

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

Every breeder in Kansas should have the Breeder's Gazette (price \$3 a year) and the KANSAS FARMER (\$1 a year). Both journals are furnished by us for the price of one paper, viz., \$2.

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

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

Get up a club for the FARMER.

Horticulture.

KEEPING SEED POTATOES.

EDITOR KANSAS FARMER:—In keeping Irish potatoes over for seed, there is one great object to strive for, *i. e.*, to keep them dormant all winter, and have them at planting time without any sign of a sprout, thus retaining within the tuber all the vigor it ever had. We all know that seed that has been sprouted is not so vigorous as un-sprouted seed.

Few farmers seem to understand that a freshly-dug potato *must* have some curing, or drying out, or else it will sweat and start to heat or sprout in the pit. Therefore, it is always best to first put them in the cellar, as the picking up and handling of them over seems to dry them out, and the cellar is cooler in the fall than it is out of doors. I have never seen potatoes dug out of the fresh earth and piled in a pile in the field keep very well. They always are more sprouted than those kept in a cellar. After proper curing out the great object is to *keep them cold*. I keep mine in the cellar until cold weather has surely set in, about the time we may expect the ground to freeze up and stay frozen—November 15 to December 10, or thereabouts.

On a cold day, when the wind is north, and it gives promise of the ground freezing up at night, I pile my potatoes in a rick, first putting down hay and boards three feet apart to form the sides of the bottom. Now when a writer says three feet he does not mean our feet, and I will explain that if the rick is made four feet wide at the bottom, the pressure of the pile and covering will crush the bottom ones and full 20 per cent. will be lost. I have had just this same experience, and by reading the FARMER and avoiding my mistakes, you will save one bushel in every five. Now when you have the boards properly arranged and put the potatoes in a rick, a bushel at a time, the cold wind that is below freezing will thoroughly chill the potatoes, and it *must* be your object to *keep* them chilled. Now here is where many farmers make a big mistake. They seem to think the potatoes must be kept *from* being chilled, and they bury them up to keep the chill out, or to keep them *warm*, and they could not possibly aid the potatoes to sprout more in any other way. I have seen them dug in October and buried at once, that showed the tops growing through the pile of dirt before Christmas, and the farmer blamed the variety, saying it is not a good keeper.

Now, when we have the rick all made, we put hay around the bottom, then a layer of hay above this, thus shingling the rick with hay, lastly putting a layer on top. Now we begin at the bottom of the rick to shingle it over with earth, and build layer above layer until we have about four inches of earth all over the pile. This has been quite a cold job and we had to have our mittens on, and as we stand and view the pile of earth we shiver with the cold and we scatter the remaining hay over the pile to keep it from freezing—do we? No! we scatter the hay over the earth we expect to next need to shovel up, to keep that from freezing, as we cannot shovel up frozen earth to good advantage. We want the earth we have put over the potatoes to freeze, and freeze up solid, if possible, and it will probably do so that night. Now, don't lie abed in the morning, but get a move on you, and put some more hay over the pile while it is *froze*, shingling it up as before, and cover the hay with earth, say six to ten inches, and try to keep that frost in, and when the outer crust is frozen up solid, and perhaps covered with snow or ice, cover the whole thing up with manure—no, not with manure, as many do, but with hay or straw, building so large a stack that the ice will never melt under it until you are ready to plant in the spring. Now, many put on manure to keep them *from* freezing, when every endeavor should be to keep them *froze*, that is, not the potatoes but the inner crust, as frost is also a wall against frost and there is no danger of it going further in, if done prop-

erly. Now, what have we done? Did we dig our potatoes on a warm day and, without any drying out, immediately bury them and keep them *warm* all winter? No; we thoroughly dried them, cooled them off in a dry, cool cellar, and buried them on a *cold* day and kept them perfectly *cold* all winter. In the spring, when the apple trees are in bloom, we take off the stack of straw and find we have to use the axe and crowbar to get the chunks of frozen earth off, and when we reach the potatoes, we find them just as we left them in the fall.

I kept seed over in this manner last year, for parties who bought of me, and they will bear me out in the statement that they were all right. It is easy to bury potatoes, but there is a right way and a wrong way, and those who are so fortunate as to be subscribers for the FARMER, can now tell for themselves whether they are on the right track or not. If not, this KANSAS FARMER is worth their year's subscription, and they should show it to their neighbor who is on the wrong track.

In conclusion, we see that whether we keep the potatoes in the cellar, or in the pit, a perfect cold storage is necessary. CLARENCE J. NORTON.
Morantown, Kas.

Early Six Weeks Potatoes.

EDITOR KANSAS FARMER:—In your issue of October 30, an inquiring friend wishes to know about the Early Six Weeks potato. I have grown it for five or six years. My wife procured the seed from J. H. Everet, of Indianapolis, Ind. The potato is a half more prolific than the Early Ohio and at least ten days earlier; is nice, dry and mealy as soon as large enough to cook, and as good a keeper as any of our early potatoes. The best early potato that I know of. I have no seed for sale. LEONIDAS CARSON.
Anthony, Harper Co., Kas.

The Early Six Weeks Potato.

EDITOR KANSAS FARMER:—In reply to your Peabody subscriber, who recently asked for information in regard to this potato and its adaptability to Kansas soil and climate, I will say that some five years ago we procured a peck of pure seed and have grown them regularly for four years as main crop for home consumption. While we have not been able to grow tubers fit for the table in six weeks, we have them of fair size to begin on (largest like hen's eggs) in eight weeks from planting, and even at this immature stage they are of good quality, as a rule—mealy and dry. They do not grow very large, nor are they very productive, and yet we find them reliable, of good quality, good keepers, and, on the whole, quite satisfactory as a family potato.

We have no seed for sale and I do not know where it can be obtained. Those who are able to furnish pure seed of this excellent early variety should advertise in due time.

Oneida, Kas. GEO. T. PETTIT.

Early Potatoes.

EDITOR KANSAS FARMER:—In reply to "A Subscriber," Peabody, Kas., regarding Early Six Weeks potatoes, will say that I tested them this summer, side by side with Early Ohio, under irrigation. In looks, habits and yield they much resemble the Ohios, and are only slightly, if any, earlier. The seed, when planted, were fine eating, and those raised seem to be keeping better than the Ohios. I prefer them for the table. Yield was at the rate of 260 bushels per acre. Expect to plant about half and half of the two kinds in 1896. Purchased my seed of F. Barteldes & Co., Lawrence, Kas. No doubt any reliable dealer can supply you with pure seed.

I am a recent subscriber to your paper (having been held up by your good looking representative at the Garden City fair), and perhaps my question has been answered. Will some one give information regarding the Early Kansas potato, same to include yield, earliness, keeping and table qualities? While at the Albuquerque Congress, I met Mr. Robt. Jenkins, a former Pawnee county man, who will return to

Kansas next season, and he had been informed that they possessed more good qualities than any other early potato in existence; in fact, were in early potatoes what the old Peachblow was in late potatoes. N. O. WAYMIRE.
Garfield, Pawnee Co., Kas.

Pruning Fruit Trees.

Practice, as to pruning, varies exceedingly, from the scanty use of the knife—indeed, the comparative absence of its use—in the great Well-house apple orchards, to the careful and persistent cutting away of considerable parts of the yearly growth of all varieties of fruit trees, vines and shrubs. H. Culbertson, in *Field and Farm*, gives the following directions:

"In taking the tree from the nursery, cut it back to twelve or eighteen inches, and cut off close to the body of the trees all side branches. As soon as the trees begin to grow they should be gone over once a week for five or six weeks and the buds that are not wanted rubbed off, leaving from three to five branches to grow, being careful not to allow more than one branch from one place. After the leaves have fallen, and before they start again, do the pruning, preparing the tree for the second year's growth. Cut back the main branches about three-quarters of their length, leaving the tree in possession of one-quarter of its previous year's growth, being careful to cut off all small branches on these small limbs; not a half or two-thirds, but the whole length.

"It is well, as trees are commencing to grow the second year, to go over them once a week and rub off the extra shoots, especially where two or more come out at the same place. Two new branches on each of the three to five left from the first year's growth will be sufficient. The pruning preparatory to the third year's growth will consist in cutting back three-quarters of the previous year's growth and thinning out where more than two branches have grown on the main branch. Sometimes, however, one will be sufficient to leave. If the fruit be peaches a few of the small side branches may be left after cutting off about one-half of their length, the object being to have some fruit the first year. The pruning for the following years will depend very much on circumstances, but in general the leading branches should be cut back from one-half to three-fourths, especially so with peaches.

"Not only cut back the leaders, but cut about one-half of all small shoots, the object being to save largely in the process of thinning the fruit. It will be found that in some varieties the fruit buds are nearly all on the outer one-half, in which case it will not do to take off too much. In addition many of the little branches that bore fruit the previous year will be found dead and should be removed. The amount of thinning out of the larger branches and cutting back two or three years of growth in some cases will depend on the general thrift of the tree, being governed always by whatever will keep the tree in a strong, vigorous condition. By proper care peach trees have been known to be in good bearing at thirty years of age. The peach, it must be remembered, bears only on wood of the previous year's growth."

Notice to Farmers.

The farmers of Kansas, by sending their application, plainly written, name and post-office address, to G. V. Bartlett, Commissioner of Forestry, Dodge City, Kas., will receive by return mail a blank to be filled out by the applicant for a share of seedling forest trees, which will be shipped free of charge, except for freight, which must be guaranteed by the applicant. Delivery will be made in the spring of 1896.

G. V. BARTLETT,
Commissioner of Forestry, Dodge City, Ford Co., Kas.

The Rural New-Yorker helps reduce the mortgage and increase the profits of the farm. Let us send it this week. Send your address; no money.

The Rural New-Yorker,
409 Pearl Street, New York.

ST. VITUS DANCE.

A Physician Prescribes Dr. Miles' Restorative Nervine.

Dr. Miles Medical Co., Elkhart, Ind.:
My daughter Mattie, aged 14, was afflicted last spring with St. Vitus dance and nervousness, her entire right side was numb and nearly paralyzed. We consulted a phy-



sician and he prescribed Dr. Miles' Restorative Nervine. She took three bottles before we saw any certain signs of improvement, but after that she began to improve very fast and I now think she is entirely cured. She has taken nine bottles of the Nervine, but no other medicine of any kind.

Knox, Ind., Jan. 5, '95. H. W. HOSSETTER.
Physicians prescribe Dr. Miles' Remedies because they are known to be the result of the long practice and experience of one of the brightest members of their profession, and are carefully compounded by experienced chemists, in exact accordance with Dr. Miles' prescriptions, as used in his practice.

On sale at all druggists. Write for Dr. Miles' Book on the Heart and Nerves. Dr. Miles Medical Co., Elkhart, Ind.

Dr. Miles' Remedies Restore Health.

5/A HORSE BLANKETS ARE THE STRONGEST.
Awarded highest prize at World's Fair. Made in 250 styles. Square Blankets for the road. Saddle Blankets for Stables. All shapes, sizes and qualities. The Best 5/A is the 5/A BAKER BLANKET. Many Have Worn 16 Years. Thousands of testimonials. Sold by all dealers. Write us for 5/A Book. WM. AYRES & SONS, Philadelphia.

UR invited to send for my latest price list of small fruits. Half million strawberry plants, 800,000 Progress, Kansas and Queen of West raspberry plants. B. F. Smith, Box 6, Lawrence, Kas. Mention this paper.

A. H. GRIESA, 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.

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Offers for fall of 1895 large stock, best assortment. Prices low. Stock and packing the best.

We should be glad to employ a few reliable salesmen. Address

A. WILLIS, Ottawa, Kansas.

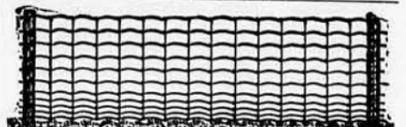
[When writing mention KANSAS FARMER.]

EARLY KANSAS \$1 per bu. F. O. B.

345 bu. SEED POTATOES

per acre. An enormous yielder, a great keeper and a splendid table potato. Supply limited.

CLARENCE J. NORTON, Morantown, Kas.



THE PRIDE OF THE ADIRONDACKS. The new Park Fence, 20 miles long. Elk high. Buffalo strong. Fawn tight, 10 rods between tree posts, roughest ground ever fenced. Built by PAGE WOVEN WIRE FENCE CO., Adrian, Mich.



Cabled Field and Hog Fence, 24 to 36 inches high; Steel Web Picket Lawn Fence; Poultry, Garden and Rabbit Fence; Steel Gates, Steel Posts and Steel Rails; Tree, Flower and Tomato Guards, Steel Wire Fence Boards, etc. Catalogue free. DEKALB FENCE CO., 23 High St., DeKalb, Ill.

In the Dairy.

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

The Cow and the Meal Bin.

But a few farmers are lucky enough to always secure hired men who will not at some time leave the barn door unfastened, and the result is the cows get into the meal bin and help themselves to a quantity so great that the digestive organs are unable to care for it. The cow soon becomes in a very bad condition generally, owing somewhat to the kind of meal that has been eaten. Sometimes the third stomach becomes impacted with the meal, the cow is at first delirious, then she goes into a comatose state and dies in a few hours. Again, acute indigestion is produced, and the cow suffers much pain, and at last dies with congestion of the fourth stomach or inflammation of the bowels.

It is not my purpose to discuss the disease that may be produced by this engorgement of food, but rather to say something that will help dairymen to save their cows, when they are unfortunate enough to have this accident happen to them. When nature's laws have once been violated, nature seems many times to become demoralized, and call for things that are inconsistent. When the cow, from her unnatural greed, or love of a certain kind of food, engorges herself with it, nature immediately calls for another engorgement in the form of an inordinate quantity of water (that is, if the cow is free to help herself to water). The result is sickness, if not death. It is, therefore, always advisable to stop the second engorgement—of water—when possible. And right here is where many farmers need a little advice. Because the cow if left to herself will drink an inordinate quantity of water to her injury, it does not follow that all water should be withheld, and yet that is where many farmers make the mistake. They think because the cow will kill herself by drinking water that it should be withheld entirely. Digestion cannot properly go on without the aid of water; when an inordinate amount of meal or grain is taken into the cow's stomach there is only one way for it to go, and that is through the alimentary canal. If digestion entirely stops, the cow dies; it is, therefore, important that digestion be stimulated and what cannot naturally be digested, will, with an active digestion, be thrown off by physic. One of the very essentials of digestion is water, and while it is unwise to allow the cow to gorge herself with it, it is more than unwise to entirely withhold it.

When it is known that a cow has eaten largely of meal or grain, one of the very best remedies is a few quarts of water, not perhaps over a gallon, at any one time; in half an hour let her have another gallon, and continue every hour until her thirst is quenched. The first time the water is given stir into it a heaping teaspoonful of ginger, and a tablespoonful of good cider vinegar, and add the ginger and vinegar every second time the cow is given drink. With this treatment many a cow would be well in forty-eight hours that would have died had the water been entirely withheld. If there is bloating, use warm water injections every hour, and if it is not reduced in six hours, give a pound dose of Epsom salts, and continue the injections, also the ginger, until the cow is well on the way to recovery. This I give as a simple, rational farmer's remedy; the veterinarian might prescribe a better one, but the treatment recommended will save a large per cent. when the veterinarian cannot be had.—*Dr. Smead, in Practical Dairyman.*

Dairy Meeting.

Don't forget the annual meeting of the Kansas State Dairy Association, at Newton, beginning on Wednesday, the 20th inst. The program covers a large range of subjects of interest to Kansas dairymen and should receive the personal support of every friend throughout the State. This will be the largest meeting ever held, if those who are to be directly benefited will

only lend their presence for the three days' session. Reduced rates have been secured on all the railroads.

"Don't Abuse a Cow."

"Don't drink too much n cider, and how ever mean you be don't abuse a cow."

Josh Billings wrote the above. Uncle Josh, in his quaint, old-fashioned speech, spake many living truths. When we were boys, an old Yankee neighbor, who was a splendid farmer and a wise old man, once said: "Mark it down wherever you see it: A man that will abuse a woman or a cow is a human hog." All history is full of kindly allusions to the cow. She is the foster mother of nearly half the children. Way back in the dim receptacles of old Hindoo thought can be found tribute after tribute to the gentle, motherly cow. In old Grecian mythology we are told that the oracle of Delphos told Cadmus, when he started out in search of his lost sister Europa, to follow a cow, and where she lay down to rest there to found a city. He did so and founded the city of Thebes.

A shrewd, thrifty German farmer, living near this city, once said to us: "I know of plenty of farmers who have bad, ugly hearts. Their cows know it too; so der cows shut down der milk gate and get even with those farmers every time."

It is very hard to make some men see how much money profit there is in kind, gentle treatment of a cow. Probably they had a rough, brutal father and came up on the farm in that sort of way. But they are beating themselves every day. They have got in a habit of rough talk, rough ways to their children and cows. Step into such a man's barnyard with him and you can tell at a glance whether he is a kind, Christian man. His cows will show it. It would be a good thing if preachers would preach more on the duty of a living, practical Christianity on the farm in our treatment of our farm animals. Humanity, Christianity and good cash profit all teach the duty of gentle treatment of the cow. Still, some men are so constructed that they cannot see it.—*Hoard's Dairyman.*

Watering the Bacteria.

A farmer who sold his milk to a creamery by the gallon and had been reading a great deal about the bacteria, was one day caught by the creamery manager putting water into his milk. The creamery man asked him angrily what he was doing that for, and as there was no other plausible excuse at hand, the farmer answered: "Oh, well, you are always blowing about how thirsty the bacteria are, so I was jest a puttin' in a little water to keep 'em from eatin' up all the butter fat."

Judgment in Feeding.

The most needful thing in feeding cows is judgment. No possible combination of the chemist can compensate for the absence of judgment. The reasons are very simple: No two cows have the same appetite—the same capacity for converting food into milk and butter. No one cow retains her appetite or her capacity for assimilation the same all the year round, from calf to calf. Her physical wants are constantly changing, and they vary, not only with her general condition, but also with the variations in the weather and other surrounding circumstances. It requires the constant exercise of good judgment to meet these wants from day to day and week to week—from month to month the year round. It requires 365 times as much sense to feed a fine butter cow up to her best work for a year as it does to run a fine engine for the same time.

Some people object to Jersey milk as too rich for feeding to babies or even to raise calves and pigs on. Well, it is not much trouble to skim it, or if given before the cream rises, it will not add to its cost very much to put a little pure water into it, as almost any milkman in the city could testify.

THE MOST SIMPLE AND SAFE REMEDY for a Cough or Throat Trouble is "Brown's Bronchial Troches." They possess real merit.

Feeds Separated Milk to Cows.

An Australian farmer gives his cows two gallons of separated milk at each feed and says its effects are beneficial, as it increases the yield, and the cattle are in better health, not being as they were before he began this practice, and as other cows in this district are, subject to "cripple ail." He adds bran to it, and allows it to stand about twelve hours before feeding, in the winter months, which gets up a slight fermentation, which has the effect of warming the milk considerably.

Many people, when a little constipated, make the mistake of using saline or other drastic purgatives. All that is needed is a mild dose of Ayer's Pills to restore the regular movement of the bowels, and nature will do the rest. They keep the system in perfect order.

\$100 Reward \$100.

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

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

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Modern Mexico is a beautifully illustrated monthly journal, published in the English language, and devoted to the interests of Mexico. Send 10 cents for sample copy. Address Modern Mexico Publishing Co., Topeka, Kas. Mention KANSAS FARMER.

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

Kansas City--Cincinnati.

(Wabash and B. & O. S. W.) A vestibule sleeping car leaves Kansas City Union depot every day at 6:20 p. m., via the Wabash railroad, running through to Cincinnati, O., without change, via B. & O. S. W. railroad from St. Louis, arriving in Cincinnati at 11:30 next morning, making the run in seventeen hours and ten minutes, the fastest time ever made. On this same train are through sleepers to Washington, D. C., Baltimore and Philadelphia, and passengers for points east of Cincinnati can step from the Kansas City-Cincinnati sleeper into the through sleepers any time after leaving St. Louis. Passengers for Louisville and points South leave the sleeper at North Vernon at 9:34 a. m.

For Kentucky and South this sleeper is a great convenience. The Wabash is the only road offering this through car service. Sleeping car berths secured at Wabash ticket office, Ninth and Delaware streets, or write to H. N. GARLAND, Western Passenger Agent, Kansas City, Mo.



THE MOST SUCCESSFUL REMEDY FOR MAN OR BEAST. Certain in its effects and never blisters. Read proofs below.

KENDALL'S SPAVIN CURE

BLUEPOINT, L. I., N. Y., Jan. 15, 1894. Dr. B. J. KENDALL Co.—I bought a splendid bay horse some time ago with a Spavin. I got him for \$30. I used Kendall's Spavin Cure. The Spavin is gone now and I have been offered \$150 for the same horse. I only had him nine weeks, so I got \$120 for using \$2 worth of Kendall's Spavin Cure. W. S. MARSDEN.

KENDALL'S SPAVIN CURE

SHELBY, Mich., Dec. 16, 1898. Dr. B. J. KENDALL Co.—I have used your Kendall's Spavin Cure with good success for Curbs on two horses and it is the best I have ever used. AUGUST FREDERICK.

Price \$1 per Bottle. For sale by all Druggists, or address DR. B. J. KENDALL COMPANY, ENOSBURGH FALLS, VT.

A NEW BOOK FREE

It has 128 pages, is printed on fine book paper, it has hundreds of illustrations—wood cuts, zinc etchings. Its reading matter is interesting, as much so for a man as a woman, and the children also are not neglected.

The mere sitting down and writing for it will secure it for you FREE. Do you want it? If so, send your name and address to

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to every reader of this paper. Cut this out and send it to us with your address and we will send you FREE for examination the Best and Only Genuine American watch ever offered at this price. It is 14k. Solid Gold filled, with Genuine American Movement, 30 Years' Guarantee, and looks like a Solid Gold Watch sold at \$40. Examine at express office and if you think it a bargain, pay \$7.50 and express charges, otherwise pay nothing. A Handsome Gold Plated Chain, sold in certain stores for \$3 goes free with each watch.

OUR GRAND OFFER. FREE One of these \$7.50 watches and a chain, if you buy or sell SIX WATCHES TO-DAY, as this price holds good for 60 days only. ROYAL W'G CO., 507 Wally Bldg., Chicago, Ill.

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A positive cure for headache, dyspepsia, nervous exhaustion, liver and kidney diseases, constipation, etc. It increases the appetite, promotes digestion, enriches the blood and gives new life and vigor to the whole body.

DR. KAY'S RENOVATOR.

Send address and name of this paper and we will send free Dr. Kay's Hand-book of Valuable Receipts and a Treatise on Diseases, said to be worth \$5.

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Dr. Kay's Renovator is sold in Topeka by the Swift & Holliday Drug Co.

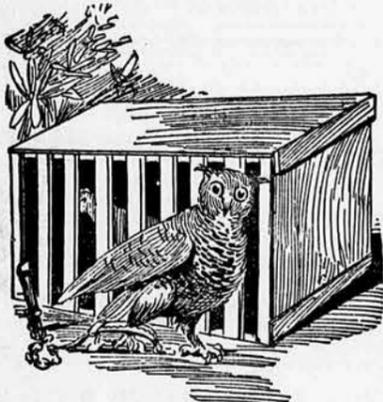
The Poultry Yard

CAPTURING A THIEF.

How a New York State Poultryman Caught a Greedy Owl.

How he lost his chickens and how he caught the thief, is thus described by Mr. C. E. Miller, Columbia county, N. Y., who writes:

"My young chickens, which roosted in small, open coops out in the lot, were disappearing at the rate of three or four half-grown ones every night. I supposed that likely the thief was a mink or a weasel, and decided to try the following plan: I made a box large enough to hold a hen and brood of chickens, making it tight all around, except one end, which I covered with narrow strips placed one inch apart (wire netting would be better), and into the box I put a hen and half a dozen young chickens. Then, after putting all the other chickens securely away in the barn, I set a small steel fox-trap outside the box,



CAPTURING A THIEF.

close to the stripped end, sinking it level with the ground and covering lightly with fine, dead grass. In the morning I was greatly surprised to find a large and ferocious owl securely fast in the trap, which, after killing and nailing up against the barn, I found to measure four feet two inches from tip to tip of the wings. He had all the appearances of being an 'ould fellow.'—Farm and Fireside.

HOW TO CANDLE EGGS.

It Requires Considerable Practice to Excel in This Operation.

Have a room as dark as you can or use a box 12 by 16 inches in size painted black inside. Stand on its end and open one side 8 inches from the bottom. All above 8 inches closed, set box with this open side toward you and set the light in it. Nail a piece to bottom, under front edge, with the top of box back, this will enable you to see better. This box can be used in any place, though it is better in a dark place. Take such light as you have; the best candler use common candles. Take two or three eggs in left hand and the eggs you candle in right hand, and hold sideways between you and the light, as close to the light as you can, and let it rub against one of the eggs in left hand; some are quite particular about this, as the eggs reflect the light through each other; turn the egg round until you are satisfied you have tested it. Take a strictly fresh egg as a standard to judge by. If a place like the vacuum in a mason's spirit level appears on the upper side as you turn the egg, it is not strictly fresh; though if this vacuum is small and the egg is all right otherwise it may be comparatively fresh. A dark or black spot indicates a poor egg; the white of stale eggs also looks thin and watery. Remember dark-shelled eggs are thicker shelled and do not candle as easily as white ones. You can only learn by breaking suspicious ones, and it requires much practice to excel.—Charles W. McQueen, in Farm and Home.

Love and Friendship.

Friendship, like love is, oft is told us,
As holy, earnest, pure and true.
Who say so, know not: friendship merely borrows.
Love giveth all, and yet is ever new.

Rivers and the Ocean Bed.

Supposing the ocean bed was emptied it would take forty-four thousand years for all the tidal rivers of the world to fill it again.

THOSE SCRAGGY NECKS.

Displayed at the Queen's Drawing Room by Royal Command.

The saddest sight in the world is to see the thin, scraggy old women at the queen's drawing-room. They must go low-necked. The queen, herself, has always had a beautiful neck and shoulders, and she presumes that all English women follow her example in this as well as other respects. Feathers add to her height and dignity, hence, if a woman is seven feet high she is forced by order of the queen to make herself look eight with the stiff plumes. Many a mother who blushes to think that her baby saw her bones, has to exhibit them in all their awfulness to the British public, or stay at home. And this no self-respecting Englishwoman wants to do. You have heard the story of the old Scotch woman who got the better of the queen, haven't you? Well, I am glad there is somebody to whom it is new. She belonged to the Douglas family, and they have wills quite as strong as the Guelphs. She wrote a personal letter to the queen, telling her that she suffered so with rheumatism in her shoulders, and had the quinsy so badly that she begged to be allowed to come with a high bodice, as she wished to present her granddaughter. An answer came from the lord chamberlain saying that it was impossible. After that two letters were written to him, stating the case. The "No" was positive. The horror of the assembly can be imagined when Lady Sarah Douglas appeared, gowned superbly in white brocade, wearing all the family jewels and having her bodice cut rather more decollete than any other woman. However, there arose above the low bodice in stern comfort, and there came way down to the wrists a fiery red flannel shirt, that told how, for once, Scotch wit got the better of German stubbornness.—Paris Register.

The Baby and Its Thumb.

If the baby persists in sucking his fat little thumb here is a way to induce him to stop: Make a pair of light-weight white flannel bags considerably larger than the baby's hand, and when the small child begins to suck his thumb put the little hands inside the bag, fastening the top of the bag with a shield pin to the sleeve of the dress. Baby won't like it of course, but it will cure him of the habit more quickly than any other method. Many babies wear the little bags until they fall asleep at night and then they are taken off.

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N. H. F. —NEVER HAS FAILED—
to cure

Baldness, Dandruff and Falling Out of Hair.
Write for testimonials and prices.

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This collection of Humor is by one of the Funniest Drummers on the "road," and he has requested us not to publish his name, for various reasons. Imagine all the laughable stories told on the Road, to pass away the time, collected together and published in a large, handsome volume, illustrated with most funny engravings, and you will have a fair idea of the book. This book contains 112 pages. Humorous lithograph cover. Size 7 X 10 inches. Price 25 cts., post-paid.

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Who are Recognized as Authority in the Culinary Art.

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A. J. Pillauet, Chef West Hotel, Minneapolis.
A. Gallier, Chef Hotel Brunswick, New York.
Mrs. S. T. Rorer, Principal Philadelphia Cooking School.
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Miss Cornelia Campbell Bedford, Supt. New York Cooking School.
And 200 others whose names are well known, and who represent nearly every state in the Union.

The Standard Embodies all the best features found in other GOOD cook books, and in addition contains much valuable matter not found in others, and all eminently practical for the average housekeeper; being especially designed for those homes that love good cooking at a moderate expense. It will at once be noticed that there is an entire absence of those technical terms which render the vast majority of cook books of no practical value.

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LADIES HOME COMPANION Is a paper for women, by women and its departments are edited with rare skill and attractiveness by women whose names are familiar in every household. The quality of illustrations, merit of its fiction, practicability of the articles on house-keeping care of children, hints on inexpensive and tasteful home adornment and fashion changes, have given this standard home journal the enormous circulation of 140,000 copies each issue. It is published twice a month, each issue containing 20 to 28 large pages, at \$1 per year.

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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.

BRUISED SHOULDER.—I bruised a horse's shoulder with a collar, four months ago. It swelled up and I opened it and let out some bloody water and it healed, but it left a hard lump that swells when I work him.

Answer.—The only way to make a permanent cure is to open the skin and remove the lump with a knife and heal it as an ordinary wound.

PARTIAL PARALYSIS.—I have a six-year-old horse that I noticed weaving back and forth with his hind parts this morning. He also urinates rather often.

Answer.—Give the horse prairie hay instead of millet, and if the weaving continues give a drachm of powdered nux vomica twice a day for a week.

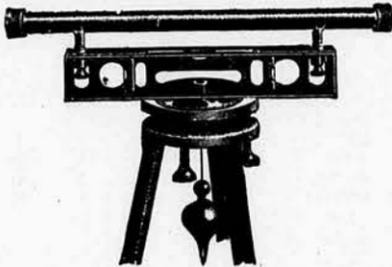
LAME MARE.—I have a mare that I broke last spring and she got lame I thought it was sweeny but she does not show sweeny. I drove her and about six days ago her hind legs swelled.

Answer.—You do not give any symptoms by which I can diagnose your case. I do not know whether she is lame before or behind.

FOR SALE.—Berkshire and Poland-China pure-breeds, from \$10 to \$200. O. P. UPDEGRAFF, Topeka, Kas.

Leveling Instrument.

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



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

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

THE KEYSTONE DEHORNER

Cuts clean on all sides—does not crush. The most humane, rapid and durable knife made, fully warranted. Highest World's Fair Award. Descriptive Circulars Free.



MARKET REPORTS.

Kansas City Live Stock. KANSAS CITY, Nov. 11.—Cattle—Receipts since Saturday, 10,420; calves, 310; shipped Saturday, 1,347 cattle, 54 calves. Native and western cattle sold unevenly; Texans were strong.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include various stock types and prices.

TEXAS AND INDIAN STEERS. 22 Ind. 1,032 \$3.15 72 Ind. 999 \$3.10 81 Ind. 912 2.90 136 Ind. 920 2.80

WESTERN STEERS. 16 fd. 1,320 \$3.61 103 Ind. 1,185 \$2.90 25 Ind. 928 2.70 1 Ind. 1,200 2.70

WESTERN COWS. 24 Ind. 1,037 \$2.40 COLORADO STEERS. 43 Ind. 1,142 \$3.35 5 Ind. 1,400 \$3.00

COLORADO COWS. 8 Ind. 1,011 \$2.40 6 Ind. 965 \$2.00 2 Ind. 1,105 2.85 1 Ind. 980 2.25

NEW MEXICO STEERS. 175 Ind. 1,011 \$2.90 15 stk. 951 \$2.80 41 Ind. 1,073 1.50 1 Ind. 1,099 2.05

TEXAS AND INDIAN COWS. 12 Ind. 1,018 \$2.50 26 Ind. 839 \$2.40 22 Ind. 835 2.25 3 Ind. 943 2.15

COWS AND HEIFERS. 1 Ind. 981 \$3.00 6 Ind. 898 \$2.75 12 Ind. 871 2.80 7 Ind. 1,025 2.60

STOCKERS AND FEEDERS. 11 Ind. 1,170 \$3.50 12 Ind. 940 \$3.40 48 Ind. 1,142 3.45 18 Ind. 843 3.35

Hogs—Receipts since Saturday, 3,793; shipped Saturday, 594. The market was strong and active. The following are representative sales:

Table with columns: No., Price, No., Price. Rows include various hogs and prices.

Chicago Live Stock. CHICAGO, Nov. 11.—Cattle—Receipts, 17,000; market steady to strong; fair to best beefs, \$3.00@5.00; cows and heifers, \$1.25@3.50; Texas steers, \$2.60@3.30; westerns, \$2.75@3.95; stockers and feeders, \$2.20@3.70.

Hogs—Receipts, 50,000; market active; light stronger, others barely active; light, \$3.30@3.65; rough packing, \$3.30@3.45; mixed and butchers, \$3.35@3.70; heavy packing and shipping, \$3.30@3.70.

St. Louis Live Stock. ST. LOUIS, Nov. 11.—Cattle—Receipts, 3,500; market steady to a shade higher; native steers, \$3.25@4.75; Texas steers, \$2.25@3.50.

Chicago Grain and Provisions. Nov. 11. Wh't—Nov. 50% 56% 56% 56% 56%

Kansas City Grain. KANSAS CITY, Nov. 11.—Wheat sold very slowly here to-day. Prices were 1/4 to 1c lower.

THE IMPROVED VICTOR INCUBATOR. Hatches Chickens by Steam. Absolutely self-regulating. The simplest, most reliable, and cheapest first-class hatcher in the market.

Wm. A. Rogers, Robt. E. Cox, Fred W. Bishop. Rogers Commission Co. Live Stock Commission Merchants.

TEXAS Cottonseed Meal and Oil Co. Room 130 Live Stock Exchange, Kansas City Stock Yards.

THE PEOPLE'S HORSE, CATTLE SHEEP AND SWINE DOCTOR. Containing in four parts clear and concise descriptions of the diseases of the respective animals, with the exact doses of medicine for each.

NEW AND VALUABLE BOOKS. We will send any of the following books, postage paid, on receipt of price, or we will present any one free to any one sending us one new subscriber and \$1.

The ABC of Potato Culture. Paper, 220 pages, 4x5, illustrated. This is T. B. Terry's first and most masterly work.

The ABC of Strawberry Culture. Paper, 150 pages, fully illustrated. This is Terry's latest small book, and has received some very high words of praise.

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ABC of Carp Culture. In paper covers illustrated. This is a work of 70 pages, 7x10, written by Geo. Finley and A. L. Root, and the best authority on the subject of carp culture yet in print.

Rifles, Cal. 22, \$1.75. Rifles, Remington System \$3.50. Rifles Cal. 32, \$3.50. Cartridges, Cal. 22, per 1000, \$2.25. Ideal Breech Loading Single Gun, Cal. 12, \$5.00. Forehand Arms Co. Hammerless Cal. 12, Double Barrel Breech Loader, \$27.50. Winchester Loaded Shells, Cal. 12, per 100, \$1.20. Large Catalogue, acts, stamps, Schmeizer Arms Co., 541-543 Main St., Kansas City, Mo.

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CASH ADVANCES MADE ON ALL CONSIGNMENTS. REFER TO ANY CINCINNATI BANK. WRITE FOR FULL PARTICULARS.

2 cars 52c, 3 cars 51c, 3 cars 50c, 2 cars 49c. 3 cars 48c; No. 4 hard, 5 cars 47c, 1 car 43c, 6 cars 42c, 3 cars 40c, 1 car 37c, 4 cars 36c, 3 cars 35c; rejected, nominally 30@35c. Soft, No. 2 red, 1 car 32c; No. 3 red, 1 car 30c, 1 car 59c, 1 car 58c, 1 car 56c; No. 4 red, 1 car 55c, 2 cars 50c, 1 car 47c; rejected, nominally 40@48c; no grade, nominally 25@35c. Spring, No. 2, 1 car 54c, 8 cars 54c, 6 cars 53c, 5 cars 53c; No. 3, 7 cars 51c, 4 cars 51c, 5 cars 50c, 4 cars 50c; rejected, 1 car 45c; white, No. 2, 2 car 53c, 1 car 52c, 1 car 51c; No. 3, 1 car 51c, 1 car 50c.

Corn sold very slowly. White corn brought Saturday's prices, but mixed was 1/4 to 3/4c lower and there was not much demand for it. No shippers had orders for round lots at the market price. The small receipts had no effect toward holding the price up.

Receipts of corn to-day, 44 cars; a year ago, 104 cars. Sales by sample on track, Kansas City: No. 2 mixed, 3 cars special billing 23c, 2 cars 22c, 5 cars 22c, 6 cars 22c; No. 3 mixed, 1 car 22c; No. 4 mixed, nominally 21c; no grade, nominally 20c; No. 2 white, 6 cars 23c; No. 3 white, 1 car 17c, 1 car 17c, 2 cars 17c.

Oats were firmly held. There was a fair demand for white and little trading in mixed. Receipts of oats to-day, 16 cars; a year ago, 10 cars.

Sales by sample on track, Kansas City: No. 2 mixed, nominally 18c; No. 3, nominally 15c; No. 4, nominally 14c; no grade, nominally 12@13c; No. 2 white, 6 cars 18c, 1 car 18c; No. 3 white, 1 car 17c, 1 car 17c, 2 cars 17c.

Hay—Receipts, 36 cars; market firm on good grades; timothy, choice, \$10.00@11.00; No. 1, \$8.50@9.50; No. 2, \$5.50@7.50; fancy prairie, \$6.50@7.00; choice, \$6.00@6.25; No. 1, \$5.00@5.50; No. 2, \$4.00@4.50; packing hay, \$3.00@3.50.

Kansas City Produce. KANSAS CITY, Nov. 11.—Butter—Extra fancy separator, 20c; fair, 17@18c; dairy, fancy, 14@15c; store packed, fresh, 10@12c; off grades, 8c; country roll, fancy, 13@15c; choice, 10@12c.

Eggs—Strictly fresh candled stock, 16c per doz. Poultry—Hens, 5c; spring, 6@8c; broilers, 7c; old roosters, 15c; young, 30c. Turkeys, 6c. Ducks, 7c. Geese, must be fat, 6c. Pigeons, 7c per doz.

Fruits—Apples—Fancy, \$2.25@2.50 per bbl; choice, \$1.75@2.00; common to good, \$1.00@1.50 per bbl. Grapes—Pennsylvania, New York and Ohio Concord, fancy, 21@22c; poor stock, 10@15c. Cranberries—\$7.50@8.00 per bbl.

TRY US. We sell your Poultry, Veals, Fruits and all produce at highest prices. DAILY RETURNS. For stenographic prices and references, write F. I. SAGE & SONS, 188 Reade St., N. Y.

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TEXAS Cottonseed Meal and Oil Co. Room 130 Live Stock Exchange, Kansas City Stock Yards. We are prepared at all times to furnish meal in any quantity and tell you how it is fed. Correspond with us, or, if in the city, call in and see us. TEXAS COTTONSEED MEAL & OIL CO., W. G. PETERS, President.

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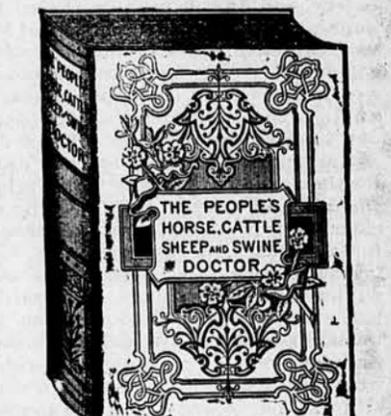
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Containing in four parts clear and concise descriptions of the diseases of the respective animals, with the exact doses of medicine for each. A book on diseases of domestic animals, which should present a description of each disease and name the proper medicines for treatment in such condensed form as to be within the means of everybody, has long been recognized as a desideratum.

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The Apiary.

PURE WHITE HONEY.

This is by All Odds the Best Winter Food for Bees.

Too many people have an idea that, while only the best honey will do to market, anything that the bees will eat is good enough for them. The first part of this idea is all right, the second all wrong. Probably the greatest winter danger to bees is from dysentery, and that is usually caused by improper food or a cold hive. Of the two causes I consider the first most common. When the autumn honey flow is limited and much space remains unfilled, the bees undertake to patch out their stores with the juice of decaying fruits, etc. This is totally unfit for them, and particularly fatal during the fall and winter. The vicinity of cider mills is an undesirable location for an apiary, on that account. The pomace is very injurious to them as a winter food. One should be careful, too, what artificial food is given to them in the fall. Save dubious material you want cleaned up till spring, when, if not absolutely poison, it usually will not injure them. Of course, nothing questionable may be given them while the sections are on.

The very best bee food for winter is pure white honey. That seems to contain the least indigestible matter. Next to this comes pure honey of a darker shade. If artificial food be necessary (do not skimp them to avoid feeding) use pure granulated sugar syrup. This is the best at any time, but so much of successful wintering depends upon good food that one should be especially particular in the fall feeding. One may at times have other material quite as unobjectionable as this, but where one is in doubt, the advice of an experienced apiarist should be sought before using it.—American Gardening.

ABOUT BEE PARALYSIS.

Partially Starved Brood Is the Cause of the Trouble.

A writer in American Bee Journal says: "For several years I warned the bee-keepers in times of sudden checks in the honey flow to look well after their bees, and either uncap honey in the brood chambers in the evenings, or feed so as to keep the colonies well supplied with unsealed stores. Brood is always well fed when the colonies have abundance of unsealed stores. But if a check takes place so as to stop a honey flow suddenly, while colonies have a large quantity of brood on hand, the bees will use up the unsealed stores very soon, and then the bees won't uncap the sealed honey fast enough to keep pace with the amount of brood that requires feeding. Soon after that the small larvae will be found looking like little dried worms in the bottom of the cells without a particle of food. In some cells ready to cap, will be seen some of this starved brood, with a brownish color, lying on the lower side of the cells and turned up a little. Some of the capped brood dies through not being fed enough to last until hatched. And some of the bees that do hatch out of this scanty-fed brood will be a day or two longer in hatching, and when hatched some of these bees will be dark in color and scarcely able to fly. And when the owner sees the bees of the same hives in some cases killing off these useless bees, he will be apt to think them old, worn-out bees that are being killed off. If the bee-keeper would see that his colonies of bees had plenty of unsealed stores while brood-rearing is going on, he never would be troubled with this state of things in the apiary."

Water for Bees in Winter.

A Russian, Czeselski or Tseselsky, has been making some interesting experiments regarding the way in which bees get the moisture they need in winter. It is well known that honey attracts moisture in a damp atmosphere. At a temperature of 76 degrees three grains of uncapped honey will in twenty-four hours absorb from .584 to 1.032 grains of water; at 50 degrees, from 1.527 to 3.034 grains of water, thus absorbing fully its own weight of water in twenty-four hours. So when bees need moisture in winter, they uncap honey in advance of their needs,

and the uncapped honey gets from the air and from the breath of the bees the necessary moisture.—American Bee Journal.

TIMELY BEE NOTES.

THE apiary should be kept clean, neat and tidy—clear of high grass, weeds and rubbish.

DAMPNESS in hives is the most damaging thing to bees during the winter that can befall them.

A SUFFICIENT number of drones is necessary, but an overproduction of them should always be prevented.

NATURAL swarming is not to be compared with artificial swarming, or dividing up, in securing numbers, if the proper plan is followed.

THERE is nothing gained on either side by robbing. It is an injury not only to the colony robbed, but also to the one doing the robbery.

DIVIDING may be continued in safety as long as the honey flow lasts, and if afterwards we desire more increase, it may readily be secured by feeding.

ONE of the first steps is to give an abundance of room for storing honey. This will arrest the first cause of swarming to a considerable extent.

If it is necessary to cover the hands in handling bees, use thin rubber gloves. The sting of the bee cannot penetrate this, while it is not cumbersome.

ALL surplus boxes should be arranged so that they can be inspected daily and removed as soon as they are completed, occupying the space with empty ones, and in this way giving plenty of room at all times.

MUCH greater success is obtained in securing straight combs by the use of foundations, either by using full sheets or starters of the same. But by proper management success can be secured to some extent, without either.

A COLONY selected for queens should not be the one in which drones are produced, as this will bring them too near akin, which should always be avoided. We should infuse new blood in the apiary every year or two.

EMPTY combs are valuable. They deserve the best of care, and can be made to last several years, doing good service six months out of the year. Combs that are new and bright are not nearly so liable to become infected with worms as those of a dark color.

IN managing surplus boxes, use but one tier at a time, and after they are about half full of comb add another, but never put in on top of the one being filled. Raise the full one out and place the empty one under it. In this way the bees will occupy the whole double tier at once.

CARE must be taken to remove all section boxes as soon as they are completed and add empty ones, always keeping the ones nearest full in the upper tier. If the colony becomes so strong that two tiers of boxes will not accommodate them, add a third, or as many as will give the bees working room.

KEEP your eyes on the old combs. Moth larvae will very likely be in them along with pollen. In this case sulphur them.

HAVE the inside of the hives dry, for dampness is injurious to the health and thrift of the bees. Many good bee-keepers consider it to be the sole cause of dysentery.

TO PREVENT robbing, as far as possible close the entrance to the weakest colonies so that only one bee can pass at a time, and allow not over two inches to the strongest colonies.

BEES do not like to be hastily handled and will resent all quick motions. By rough handling they become irritable. The whole apiary may be made very unpleasant to handle by such treatment.

It often occurs during the fall months that young queens are reared out of season, as it were, when drones are absent. Thus many young queens go into winter quarters and all such prove valueless.

We can keep all objectionable stocks from breeding drones if we use workers' combs exclusively. In this we cannot afford to allow bees to build their own comb, but by the use of foundation only can we control this matter. Drone comb should be supplied to such stocks as are capable of producing the qualities we desire.—St. Louis Republic.

HOGS

Will do well if Fed Corn alone, but they will

DO BETTER IF FED OLD PROCESS LINSEED CAKE

IN COMBINATION WITH CORN.

HOG CHOLERA

has no terrors to the man who feeds "OLD PROCESS" LINSEED CAKE (Oil Meal). It produces that condition that carries off the disease germ without injury to the animal. You will be surprised at the way your hogs will grow. It insures evenness of appetite and thrift.

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For further particulars write the following Linseed Oil Works: The Sioux City, Sioux City, Ia.; The Woodman, Omaha, Neb.; The Kansas City, Kansas City, Mo.; The Des Moines, Des Moines, Ia.; The Burlington, Burlington, Ia.; The Mankato, Mankato, Minn.; The LaCrosse, LaCrosse, Wis.; The Evans, Indianapolis, Ind.; The W. P. Orr, Piqua, Ohio; The Wood, Piqua, Ohio; The Leavenworth, Leavenworth, Kan.

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These cribs are furnished in two (2) sections, a lower and upper, each four feet high, making a crib eight feet high. They are made of selected seasoned white oak or cypress, and five double strands of No. 11 galvanized steel wire, and will last a lifetime. Ask your dealer for them; if he does not keep them, write to us.

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ESTABLISHED IN 1889. Does a general tanning business, including robes, rugs, etc. Tanning Galloway hides for robes a specialty. First-class work, reasonable prices. All kinds of leather in stock—best quality. Have you any oak bark? Good prices paid for it. Write me.

M. C. BYRD, Lawrence, Kas.

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If you want a mill that will grind corn and cob and all small grains. The largest mill made, hence the greatest capacity. Fully warranted. Made in sweep and power styles and five different sizes. Write for illustrated circulars.

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(Successors to Blue Valley Foundry Co.)
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If it does not save its cost on one lot of hogs. Address **Martin & Morrissey Mfg. Co.,** OMAHA, NEB.

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1 Sewing awl.....	10	1 Box lightning hammer	20
1 Pegging awl.....	20	ness menders.....	20
4 Pack's shoe nails	40	1 Bot. rubber cement	25
6 Pairs heel plates..	30	1 Bot. leather cement	25
1 Ball shoe thread...	05	1 Ball sh'm'kr's wax	05
1 Dozen bristles.....	75	4 Harness nd'ls, astd	05
1 Horn's & saw clmp	75	1 Leather punch.....	20
1 Box rivets.....	20	1 Wire applicator.....	25
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(Continued from page 1.)

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Catalogues of Cherry Orchard Poland-Chinas

Now ready for distribution. One hundred tops out of my spring crop of 140 pigs, will be sold at PUBLIC SALE, SEPTEMBER 11, 1895. They were sired by my herd boars, Wren's Medium 12387 and Corwin's White Face 2924. The pigs are in fine health and making good growth on alfalfa and light feed of slop. FOR PRIVATE SALE, fall boars and sows bred. Correspondence and inspection invited. Address W. H. WREN, Marion, Marion Co., Kansas.

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

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CHARGES: YARDAGE, Cattle, 25 cents per head; Hogs, 8 cents per head; Sheep, 5 cents per head. HAY, \$1 per 100 lbs.; BRAN, \$1 per 100 lbs.; CORN, \$1 per bushel. NO YARDAGE CHARGED UNLESS THE STOCK IS SOLD OR WEIGHED. C. F. MORSE, E. E. RICHARDSON, H. P. CHILD, EUGENE RUST, V. Pres. and Gen. Manager. Secretary and Treasurer. Assistant Gen. Manager. Gen. Superintendent.

THE STRAY LIST.

FOR WEEK ENDING OCTOBER 30, 1895. Allen county—Jas. Wakefield, clerk. HORSE—Taken up by John Maxwell, in Iola tp., October 8, 1895, one light bay horse, fistula marks on shoulders; valued at \$5. FOR WEEK ENDING NOVEMBER 6, 1895. Linn county—J. J. Hawkins, clerk. STEER—Taken up by John Polley, in Liberty tp. (P. O. Parker), October 28, 1895, one red and white two-year-old steer, hole in left ear, dehorned; valued at \$25. COW—By same, one red cow, 5 years old, branded horseshoe brand on left hip, dehorned; valued at \$20. FOR WEEK ENDING NOV. 13, 1895. Cherokee county—P. M. Humphrey, clerk. MARE—Taken up by Tylor Hicks, in Pleasant View tp., October 21, 1895, one bay mare, fourteen hands high, bob-tail, foretop clipped, branded 23 on left hip, saddle and harness marks; valued at \$20. HORSE—By same, one bay horse, seventeen and a half hands high, saddle marks; valued at \$30. Osage county—E. C. Murphy, clerk. FOUR HORSES—Taken up by L. B. Hogle, in Burlingame tp., October 21, 1895, four bay geldings; valued at \$12.50 each. MARE—By same, one bay mare; valued at \$8. MARE—By same, one gray mare, wire out scar on left fore foot; valued at \$8. MARE—By same, one gray mare; valued at \$8. COLT—Taken up by James Wray, in Burlingame tp., October 26, 1895, one bay horse colt, white star in forehead; valued at \$8. COLT—By same, one bay horse colt, white star in forehead and left fore foot white; valued at \$12. Rush county—W. J. Hayes, clerk. MULE—Taken up by E. U. Mills, in Brookdale tp., October 26, 1895, one brown mare mule, about 2 1/2 years old, fourteen and a half hands high, no marks or brands; valued at \$25. Pratt county. HORSE—Taken up by W. S. Harrouff, in Elm tp. (P. O. Sawyer), October 13, 1895, one roan horse, 5 years old, weight 700 pounds, white in face, both right feet white; valued at \$10. THOS. B. SHILLINGLAW, Real Estate and Rent Agency, 115 East Fifth St., Topeka, Kas. Established in 1884. Calls and correspondence invited.

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The Arched Hedge Trimmer. Any one who has a Mowing Machine can attach our Trimmer to it and thus save the expense of special driving gear. Three years use in Labette county has established its reputation as a perfect trimmer. Cheap, strong, durable and very effective. It is guaranteed to please even the most critical disposition. E. C. GORDON & SONS, Sole Mfrs., Chetopa, Kas.

FRENCH BUHR MILLS. 28 sizes and styles. Every mill warranted. For All kinds of Grinding. They can operate and keep in order. "Book on Mills" and sample meal FREE. All kinds mill machinery. Flour mills built, roller or burr system. Reduced Prices for '95. NORDYKE & MARMON CO., 285 Day Street, Indianapolis, Ind. When you write mention Kansas Farmer.

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