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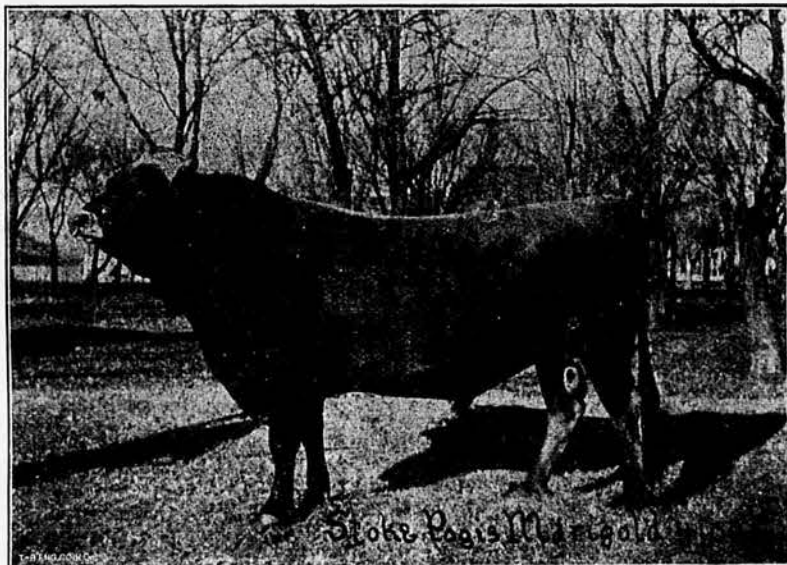
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## Agricultural Matters.

### LATENT FERTILITY IN THE SOIL, ITS UTILIZATION AND CONSERVATION.

By R. W. Clothier, in Industrialist.

Few people realize the vast amount of latent fertility that exists in the soil. We hear so much talk of the necessity of utilizing natural fertilizers, and of the dire results that may follow from neglect of using them, that we are inclined to believe that in a short time all the fertility will be removed from the soil if we continue to grow crops upon it each year without attempting to return at least part of what we take away. Now it is a fact that farms do "run out" from long continued usage and improper treatment, but it is also a fact that in the majority of cases a very small per cent of their natural fertility has been taken away in the form of crops. By far the greater portion has been wasted, largely by improper methods of cultivation, as will be shown further on. In order to better understand the truth of this statement, let us see what elements are taken from the soil by plants growing upon it, and then let us examine the soil to see in what proportion it contains these elements.

A very small per cent of the total weight of plants is furnished by the minerals of the soil; and of this small per cent the following elements are necessary to plant growth: iron, sulphur, nitrogen, phosphorus, potassium, calcium, sodium, silicon, oxygen, and chlorine. Of these, all but potassium, phosphorus, and nitrogen are present in the soil in such abundance as to be practically inexhaustible. The amount of these three elements, then, contained in a soil will determine its fertility; and, since all of them may be considered of equal importance to plant growth, a deficiency in any one of them makes a soil poor.

Let us see now how much of these elements an average soil contains. Professor Roberts, of Cornell University, in his work, "The Fertility of the Land," has prepared a table of 49 analyses of different soils selected from different parts of the United States, the analyses all being made by chemists of wide reputation. From this table it is found that the amount of potash ranged from 725 pounds to 54,986 pounds per acre in the first eight inches of soil. The amount of nitrogen ranged from 635 pounds to 10,161 pounds per acre, and the phosphoric acid ranged from 404 to 31,062 pounds per acre. The average was, potash, 16,317 pounds; nitrogen, 3,053 pounds; and phosphoric acid, 4,219 pounds. The second eight inches of soil contained an average of 6,843 pounds of potash, 4,069 pounds of nitrogen, and 1,816 pounds of phosphoric acid per acre. Calculating from these figures we find that the first foot of an average soil contains 19,738 pounds of potash, 5,087 pounds of nitrogen, and 5,123 pounds of phosphoric acid. It might be interesting in this connection to examine the fertility of Kansas soils. I could find records of but four analyses which were available for my purposes. Of these four, two are from Wallace County and two from Wyandotte County. In giving the analyses I mention only the three elements which we are discussing, although the other elements were also determined.

No. 1, upland prairie soil from Wallace County contained .202 per cent available potash, .118 per cent of phosphoric acid, and 5.224 per cent of organic matter. No. 2, bottom prairie land in the Smoky Hill Valley in Wallace County, contained .214 per cent of available potash, .173 per cent of phosphoric acid, and 3.039 per cent of organic matter. By available potash is meant that which will dissolve in cold, dilute hydrochloric acid. The nitrogen was not determined in either one of these analyses, but from the amount of organic matter present one would conclude that there was an abundance of it.

Of the soils from Wyandotte County, the first had been cultivated thirty-five years without the application of fertilizers of any kind. It was planted to corn for eighteen successive years. It then grew one crop each of rye and wheat, after which it was seeded to clover. After three years the clover was turned under and the ground planted to grape-vines. It was still a vineyard when sampled for analysis. It contained .498 per cent of potash, .047 per cent of phosphoric acid, and 5 per cent of organic matter. The second soil from this county had been in blue-grass for eighteen years when sampled for analysis. It contained .608 per cent of potash, .08 per cent of phosphoric acid, and 5.5 per cent of organic matter.

The amount of nitrogen was not determined in any one of these analyses, and in order to get some data upon that element, I determined the amount of nitrogen in the soil from a field near the chemical laboratory at the Kansas State Agricultural College. The land had been under cultivation for about fifteen years. The latter part of the period it had grown sorghum, and the last year it had not been planted to anything. It contained .185 per cent of nitrogen in the first two inches of soil. These figures are perhaps very much too low for the first foot of soil, the sample having been taken for another purpose, but since the analysis was made in the winter when the ground was frozen I could get no better sample at the time. I shall use the figures, however, for further calculations.

For better comparison let us reduce all these percentages to pounds per acre in the first foot of soil. Taking an acre of soil one foot deep to weigh 1,800 tons, we find that soil No. 1, from Wallace County, contained 7,272 pounds per acre of potash, and 3,636 pounds of phosphoric acid. No. 2 contained 7,704 pounds of potash and 6,228 pounds of phosphoric acid. The vineyard soil from Wyandotte County contained 17,018 pounds of potash and 1,692 pounds of phosphoric acid. The blue-grass soil contained 21,888 pounds of potash and 2,880 pounds of phosphoric acid. Taking the average of these for the average Kansas soil we find that the first foot in depth contains 13,695 pounds of potash per acre, 3,702 pounds of phosphoric acid; and, using the figures from my analysis, 6,600 pounds of nitrogen. There is about as much more of these elements in the next two feet of soil.

In order to better understand the meaning of these figures, let us now see how much of these elements of fertility is required to produce an acre of some of our leading crops. The average crop of wheat per acre in the United States is about 14 bushels. This requires, for both grain and straw, 29.73 pounds of nitrogen, 9.49 pounds of phosphoric acid, and 13.69 pounds of potash. Doubling this for an ideal crop, we find that 59.46 pounds of nitrogen, 18.98 pounds of phosphoric acid, and 27.38 pounds of potash are required to produce an acre of wheat yielding 28 bushels. An acre of corn yielding 50 bushels requires for its production 96.2 pounds of nitrogen, 36.2 pounds of phosphoric acid, and 68 pounds of potash. A cotton crop yielding one bale per acre (more than double the average yield) requires 28.35 pounds of nitrogen, 9.30 pounds of phosphoric acid, and 13.07 pounds of potash for each acre produced. Now let us compare these figures with those showing the amount of fertility in the soil.

Dividing 6,600 by 59.46 we get a result of 111, which represents the number of years we could continue to produce wheat at the rate of 28 bushels per acre on an average Kansas soil before we would exhaust the supply of nitrogen in the first foot of soil. At the rate we are now producing, the nitrogen would last 222 years. In the same manner we find that there is enough phosphoric acid to produce 198 successive ideal crops, or 396 average crops. The potash would produce 500 ideal crops and 1,000 average crops before being exhausted. We could produce corn at the rate of 50 bushels per acre for seventy years before the supply of nitrogen would be exhausted. The phosphoric acid would last 115 years and we could continue cropping 85 years longer before the potash would be exhausted. With the nitrogen of the first foot of soil we could produce cotton at the rate of one bale per acre for 235 successive years; with the phosphoric acid, 404 years; and with the potash, 1,048 years. But this represents the fertility in only the first foot of soil. When we consider that many of the roots of the plants just mentioned penetrate the soil to a depth of three and even four feet, and also consider the fact that the rains bring down to the soil from six to 10 pounds per acre of nitrogen annually, we begin to see how practically inexhaustible the fertility of the soil is.

But, notwithstanding all this, we know that maximum crops are seldom produced and that soils do appear to wear out. Why is this true? One or all of several reasons which we will now discuss might be assigned. In the first place, only a small portion of this plant food is ever available to the plant at any one time. Nearly all the nitrogen, for example, exists in the form of organic matter which can not be used until it undergoes the process of nitrification, the process by which the nitrogen of organic matter is converted into nitric acid and nitrates. Nitrification takes place by means of bacteria which live in the soil. In order that these bacteria may thrive and perform their work well, they must have conditions of warmth and moisture, must be supplied with oxygen, and the acid formed must be removed or combined with some base. Quite often a base easily acted upon is not present and too much free acid accumulates. Then, too, in water-logged soils the temperature remains too low and the air is excluded by the water. We must find some way to supply these necessary conditions.

But there might be plenty of available nitrogen and the soil fail to produce well on account of a deficiency in available potash or phosphoric acid. These elements exist in the soil in nearly or quite insoluble compounds; the potash in combination with other elements forms double silicates, while

the phosphoric acid is in combination with various bases which form insoluble phosphates. They may be liberated from these compounds and brought into solution by means of humic acids formed by the humus of the soil, by means of water holding in solution other salts, and by the action of the fibrous roots of plants. But under the most favorable conditions it has been estimated that less than one per cent of these elements could be brought into solution in one year's time; and when once brought into solution their tendency is soon again to form insoluble compounds. Granting, however, that an abundance of these three elements exists in available form, soils may fail to produce because they lack the necessary water to carry this food to and into the plants.

One of the chief means by which these difficulties may be overcome is good tillage. Many people have laughed at the ideas of Jethro Tull, when they read his "Horse Hoeing Husbandry," and found that he advocated thorough tillage as a means of supplying plants with food, but, although the old gentleman lived and wrote his book more than two hundred years ago, he came nearer the truth than many more modern writers. His theories in regard to plant-feeding may have been somewhat crude but his observations were correct.

Good tillage loosens the soil and allows free circulation of air. It may often aid in hastening evaporation for a time, and it also allows the sun's rays to have more power on cold "soggy" soils. As above stated, all of these conditions promote nitrification. Thorough tillage reduces the soil to fine particles upon which water and humic acids may act more readily, and by breaking the surface crust which always forms on untilled soil, makes more room and better conditions for the development of fibrous roots. It is a well-known fact that roots grown in a hard, crusty soil do not have as many fibers (which are the chief feeders of the plant), as those grown in soil of looser texture. It is also true that though our cropping plants send many of their roots to a greater depth, the major part of their feeding is done near the surface. These facts suggest that good plowing is one of the most essential features of good tillage. Land should be plowed as often as a surface crust is formed, and should always be plowed deep enough to completely bury all organic matter that may be on the surface. The aim should be not alone to turn over a handsome furrow, but the plow should be made to do as much pulverizing of the soil as possible. The plowing should be followed by frequent surface cultivation. There is no other way by which so much plant food can be liberated as by thoroughly pulverizing the soil.

At Cornell University the following results were obtained in an experiment to test the value of frequent cultivation: Some plots of rocky, poor land were planted to potatoes. Those tilled thirteen times produced an average of 367.5 bushels per acre, while those tilled nine times produced an average of 338 bushels per acre, a difference of 29½ bushels per acre in favor of the more frequent tillage. The same year the average crop for New York State was 68 bushels per acre. This comparatively low yield may not have been due to lack of tillage alone, but it is certainly safe to give frequent tillage a large share of credit for the enormous gains in its favor.

The same kind of land was planted to corn and given the same treatment, but not quite so frequently. The result was a yield of 86.8 bushels per acre, counting 80 pounds to the bushel. These same corn plots were planted to potatoes the next year, part of them being cultivated three times and the others from seven to eleven times. Those tilled frequently produced 339.8 bushels per acre and those tilled three times produced 239.8 bushels per acre, a gain of 50 bushels per acre in favor of frequent tillage. This difference would no doubt have been much greater had it not been for the thorough tillage which had been given all the plots the previous year. In both these experiments the vines remained green until killed by frost and at no time during the period did they show signs of suffering from lack of moisture or any of the elements of plant food as had been the case with previous crops. These experiments prove that a large amount of plant food may be rendered available by thorough tillage.

When the different kinds of food are most needed is a question that will bear much further investigation than has been given it. Experiments have shown that in many cases potash and phosphoric acid seem to promote fruitfulness, while nitrogen retards fruitfulness in some cases and promotes it in others. Nitrogen is beneficial to corn and potatoes at all stages of their growth and is beneficial to all young plants. It seems to be injurious to wheat, however, if applied in too large quantities near the fruiting stage. Experiments on inter-tillage of wheat have shown that the excess of nitrogen liberated counteracts the beneficial effects of the potash and phosphoric acid

and the plant "straw falls" badly, the heads not filling well. An abundance of nitrogen, however, is needed by wheat in its earlier stages of growth, hence the necessity of a thorough preparation of the seed-bed.

But, since all plant food taken from the soil must be in solution before it can enter the plant, a soil may contain an abundance of available plant food and yet the plants may be unable to use it on account of a lack of moisture. This is the greatest difficulty, with which the western farmer has to contend. If he could be supplied with rain at the times when he needs it most, crop failures would be wholly unknown to him except when the plants are attacked and destroyed by some external pest. But here again the difficulty can be at least partially overcome by tillage. There is no part of Kansas in which almost every year enough rain does not fall to mature crops if its precipitation could be distributed or its quantity conserved. We can never hope to control the precipitation of rain, but a great deal can be done towards the conservation of moisture after it has once fallen.

Moisture evaporates from the soil almost entirely by means of what is termed capillary attraction. A good example of this phenomenon may be seen by placing a small glass tube vertically in a basin of water. The water inside the tube rises to a considerable height above the level of the water in the basin. This is due to the fact that there is a greater attraction for each other between the molecules of the glass and the molecules of the water than there is between the molecules of the water for themselves. This fact explains why a glass rod when thrust into a basin of water and then withdrawn comes out wet instead of dry. Now consider the inside surface of the tube as being made up of rings of molecules, each molecule having a definite amount of force of attraction for the water molecules which is equal to that of every other molecule. The ring of molecules immediately above the surface of the water draws the water up to it where it is seized and carried on by the next ring, and so on, until the weight of the water in the tube is equal to the attractive force of the ring of molecules at the water film, when the water will cease to rise. Now the total number of molecules in the surface of a given tube will be proportionate to the area of this surface, and the weight of the column of water inside will be proportionate to the volume of the tube. Since areas of similar surfaces increase in proportion to the squares of their like dimensions, while volumes of similar solids increase in proportion to the cubes of their like dimensions, it follows that the smaller the diameter of the tube the higher will the water rise inside of it.

A phenomenon similar to this exists in the soil, the capillary tubes being formed by the spaces between the soil particles, the water always going toward the driest soil. In a glass tube one inch in diameter the water rises .054 inches. In a tube .1 of an inch in diameter the water rises .545 inches. In a tube .001 of an inch in diameter the water would rise 54.56 inches and in one having a diameter of .00001 of an inch the water would rise 5,456 inches, or 454½ feet. Now average soil particles have a diameter of about .0003 of an inch, and the spaces between them would be still much less than this, so it can be seen that, although the lifting power of soil capillary tubes would be much lessened by the zigzag course the water would be compelled to take, there would still be power enough to lift water to the surface from great depths. At the surface it is gradually converted into vapor by the effect of the sun and atmosphere and is carried away by the winds, the water from below continually rising to take its place.

This, in brief, is the mechanics of the process of evaporation of soil moisture. If we could entirely close these capillary tubes before the moisture is lifted high enough to be affected by the rays of the sun we could shut off evaporation almost completely. Here is where the function of tillage is manifest. Plowing breaks these tubes quite effectually and shuts off their connection with the surface of the soil, and when the top of the ground becomes dry they can not easily form again. Disking or breaking the crust of the soil in some other way also serves a good purpose. Extensive experiments have been made at the Kansas station during the last two years to test the effect of different methods of tillage upon the conservation of soil moisture. Results have been published in Bulletin No. 68 and in Press Bulletin No. 4, issued in August of this year, and other bulletins will follow.

I will give a brief summary of some of the results obtained. Wheat stubble-ground treated with the disk harrow, and compared with the same kind of ground not treated, showed, in only five days' time a saving of an amount of water equivalent to .4 inch of rainfall. Some of the same stubble land was plowed July 7. During the period from this date until August 2, scarcely any rain fell. At the close of the period the plowed land had lost 4.8 per



cent of moisture, while plats that were not tilled in any way had lost 11.5 per cent of moisture, a saving in favor of the plowed land of nearly 7 per cent. Taking the weight of the first foot of soil to be 1,800 tons per acre, 7 per cent of this would be 126 tons, which is the weight of the water saved by plowing. This is equivalent to .875 inch of rainfall. The total loss from the plats not treated was equivalent to 1.8 inches of rain. Land that had been disked and received one rain upon it after the disk-ing showed a saving of .7 inch of rain. Had the surface of this ground been treated with an ordinary drag harrow after the rain, to break the capillary tubes formed, I have no doubt it would have been equal to the plowed ground in its power to hold moisture.

The results of these experiments ought to be good wholesome hints to all wheat-growing Kansas farmers. If drought continues through the three months of July, August, and September, as it often does, wheat ground plowed during the latter half of August and the first half of September would be almost entirely destitute of moisture, while that plowed at the beginning of the period of drought, that is, when the ground is still full of moisture, would still retain enough moisture at seeding time to germinate the seed and maintain the young plants until the season of fall rains, which we nearly always have in October and November. Many failures of the wheat crop could be prevented by early plowing.

Frequent surface tillage, in addition to its liberation of plant food, is also a valuable agent in conserving soil moisture. (It pulverizes the lumps, thus shutting off access of too much air. This soil, soon drying out, prevents the capillary tubes from reaching the surface. Its effect resembles the well-known effect of a hay or straw mulch. The results of the following experiments performed at the Kansas station during the summer of 1897, demonstrate the value of this dry soil mulch. The experiment was begun July 10 and from this time until its close, October 15, there was almost unbroken drought.

Four plats of ground were laid off and treated as follows: No. 1 was mulched with hay about three inches deep. No. 2 was left untreated. No. 3 was raked shallow with a garden rake. No. 4 was hoed to a depth of about four inches and the surface leveled with a garden rake. Numbers 3 and 4 were tilled once per week until the soil mulch became thoroughly dry, when the tillage was discontinued. The plats were all sampled to a depth of one foot and the moisture determined every other day, but in the table which follows I have given only the results obtained at five different representative dates.

Table Showing Percentage of Moisture in Each Plat.

Date of Sampling.	Plat No. 1. Mulched.	Plat No. 2. Untreated.	Plat No. 3. Shallow Raked.	Plat No. 4. Deep Tilled.
July 10.....	21.7	21.3	21.8	21.5
August 1.....	21.6	17.4	18.5	18.1
September 1.....	19.0	15.27	16.93	17.22
October 1.....	14.71	11.76	15.44	15.18
October 15.....	11.46	11.18	15.27	14.9
Total loss....	10.3	10.1	6.5	6.6

The table shows that the dry soil mulch saved 3.5 per cent of moisture. Compare this with the loss in the plat not treated and we have a gain of 35 per cent in favor of the dry soil mulch. But the mulch itself was included in the sample taken. If this had been thrown out the gain for the deeply tilled plat would be brought up to fully 45 per cent. There was a line of distinction between the dry soil and the damp which was quite apparent, the latter containing fully enough moisture to germinate seed—in fact would have been an ideal seed-bed for wheat. It will be noticed that the hay mulch was effective until about September 1, when it began to lose its effectiveness, and by the end of the period the plat had lost all the moisture that had been saved during the earlier part of the experiment. A probable explanation of this fact is that during the cool nights of September and October evaporation was checked in the other plats by their rapid radiation of the heat accumulated during the day, while in this plat heat radiation was prevented by the mulch and evaporation continued during both day and night.

In addition to the above experiments, ordinary and thorough preparation of the seed-bed for wheat was tested. The field was divided into twenty plats and every alternate plat was given ordinary preparation while the others were given some kind of tillage every day from August 17, till the wheat was sown. The amount of moisture in the plats was determined once a week until October 17. Those given thorough preparation showed a gain over the others of 45 per cent in the conservation of moisture, and there was a gain of 3.5 bushels per acre in the yield. This was hardly a fair test of the yield, however, because all of the wheat was nearly ruined by the

black rust which struck it about ten days before it ripened.

We have seen that land should be deeply and thoroughly tilled in order to liberate plant food, to facilitate nitrification, to give room for the accumulation of moisture, and to aid in its conservation. From the experiments in soil moisture cited we would infer that growing crops should be given thorough surface cultivation after each rain, especially during the season when there is most danger of drought setting in. In this way a maximum utilization of soil fertility may be approached.

Let us now discuss briefly the loss of fertility from the soil and means of preventing it. It was found by investigation that after fifteen years of cropping a certain field only one-eighth of the nitrogen removed had been taken away in the form of crops. The other seven-eighths had been wasted by being removed through other means. The principal agent in this wasting of fertility is excessive rains. In many cases the rain comes down so rapidly as to form freshets which carry away large quantities of the soil itself. It is said that thousands of acres of the uplands in the State of Mississippi, once productive farms, have been transformed into "bad lands," "as barren as those of the Dakotas," by the erosive action of rivulets formed by excessive rains. Eternal vigilance is necessary to prevent this waste of soil. Wherever water tends to accumulate during rains to form a small running stream, an underground drain should be put in or a surface ditch made to conduct the water away from the cultivated field. Everything should be avoided which tends to lead the surface water into one channel unless this channel can be located where it will do no damage.

Deep tillage will often counteract the bad effects of excessive rains. The large amount of loose soil acts like a sponge, absorbing the water instead of allowing it to accumulate on the surface. But even though the soil is prevented from washing away, there is still much plant food lost in the form of nitrogen by being leached out of the soil. Potash and phosphoric acid when rendered soluble tend soon again to form insoluble compounds and so little loss of these elements occurs by leaching. It is not so, however, with nitrates, the form in which most of the available nitrogen exists. All nitrates are soluble and when once brought into solution they must be used quickly or they are in danger of being carried out of the reach of plants by the percolation of the waters through the soil. Our only preventive of this loss is to imitate nature by keeping our lands covered with growing crops all the time and thus save the nitrogen by again converting it into organic matter. We must not forget, however, the value of farm manures in restoring nitrogen as well as other elements of fertility to the soil.

If the supply of nitrogen runs short, it may be renewed by growing leguminous plants, all of which are provided with tubercles on their roots which are filled with bacteria having the power to take nitrogen from the air and leave it in the soil in an available form for plant food. The value of red clover as a cover crop is well known to eastern farmers. It does not do well, however, in Kansas, but its place may be filled by alfalfa, a crop which gives valuable returns at the same time that it is replenishing the soil with nitrogen. Soy-beans are another paying crop that will serve the same purpose as alfalfa. Where a cover crop is wanted for a single season, it would be well to try our common sweet clover, a plant which produces an abundance of foliage and also accumulates a large amount of nitrogen in the soil.

Nitrogen may be lost from the soil before it is converted into nitrates. We have spoken of the bad effects upon nitrification of a cold, "soggy" soil and of too much acid in the soil. These conditions do not stop the decay of organic matter, however, and as this proceeds the nitrogen is converted into ammonia which escapes into the air in the form of a gas. These conditions may often be remedied by applying quicklime to the soil. The lime neutralizes the acid and by cementing fine particles into larger ones allows freer air circulation, which aids very much in nitrification.

We thus see that we have in the soil a rich heritage which may be used for a generation to accumulate wealth and yet be bequeathed to posterity little the worse for our use of it, or it may be robbed of its fertility by improper methods of culture and posterity thus be cheated out of its rightful heritage. Let us try to understand this gift from God in order that we may preserve it.

Wife (on board ship, trying to comfort her seasick husband and change the current of his thoughts)—"Darling, has the moon come up yet?" Husband (groaning)—"It has if I swallowed it."—Boston Globe.

## The Stock Interest.

### THOROUGHbred STOCK SALES.

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

NOVEMBER 1—W. T. Clay, Plattsburg, Mo., Short-horns.

### Green Feed or Hay for Hogs.

Editor Kansas Farmer:—An experiment carried on at the agricultural college some time ago, with pigs on alfalfa pasture and a light ration of corn, shows that, after deducting the probable gain due to the corn, there was 776 pounds of pork produced per acre of alfalfa pasture. With hogs at \$3.30 per hundred pounds, this gives \$25.60 per acre for alfalfa, and the stand was not injured by the pasturing.

During the past six months two experiments have been carried on to test feeding alfalfa hay to fattening hogs. The first experiment showed a gain of 868 pounds of pork per ton of alfalfa, after deducting the gain due to the grain fed. In the second, the hay was much inferior in quality to the first, but showed a gain due to the hay of 338 pounds. These experiments, with hogs at \$3.30 per hundred, make the alfalfa hay worth \$28.64 and \$11.15 per ton respectively.

The college bought 14 head of stock hogs that arrived at the college barn Saturday, May 20. They were in fair shape for stock hogs, but had evidently not seen any green feed for some time. The lot in which they were turned had not been used for about a month and had quite a growth of weeds in it, which the hogs began eating very greedily. They were given a feed of Kaffir, but they preferred the weeds and ate very little grain. The bunch weighed 1,700 pounds when put in the lot, and about forty hours later they weighed 1,808, a gain of 108 pounds; and they had eaten only 80 pounds of grain. Of course this was mostly fill, but it was just the thing to dilate the digestive apparatus and get them in condition to feed. Alfalfa is the best crop for such feed. Clover is nearly equal, and many other green feeds stand well up in the list.

Our State is famous for large crops of weeds, and where farmers do not have either alfalfa or clover, a good profit may be obtained by free feeding of weeds. The health of the hogs will be better and more pounds of pork will be made from each bushel of grain fed. J. G. HANEY, Kansas State Agricultural College.

### Dipping to Be Resumed.

The announcement that the dipping of cattle for the prevention of Texas fever, in lieu of the inspection, will be resumed about the last of this month, has caused some curiosity regarding the plans of the Government on the methods to be pursued in the dipping this year. The dynamo oil was the dip used last year with greater or less success, and the same oil somewhat modified in preparation will be used at all of the vats under Government supervision during the summer.

The main complaint regarding the dipping solution last year was its burning effect upon the cattle dipped. This effect was attributed to the amount of kerosene in the oil. The dynamo oil cost 20 cents per gallon, and, as certain investigating committees have brought out the fact recently that all food and a good many other products were more or less adulterated, it is not unlikely that a much cheaper grade of oil was furnished than was supposed to be purchased. At any rate the dynamo oil had some evil effects in its use last year. For the coming summer the Government officials have adopted practically the same solution with its burning effect modified to some extent. It is said that all the bad effects noticed in the dipping last fall will be eliminated.

At present there are only three dipping vats in the country that are under the supervision of the officials of the Bureau of Animal Industry. One of these three is located at the National Stock Yards, Ills., one at Fort Worth, Tex., and the other at Mammoth Springs, Ark. There are other vats scattered through Texas and along the southern border of the United States, part of which are operated by the railroads and part by private parties. One of these vats is located at Chetopa, Kans., on the M. K. & T. railroad, and is owned and operated by private capital. Neosho, Mo., has one owned and operated by the Pittsburg & Gulf road. A dipping tank has also been built at Naco, just on the line between Mexico and Arizona in Cochise County, near Bisbee. This is also owned by private parties. It is on the Arizona & Southeastern railway. Most of the vats in use are made of wood, except at Naco and Chetopa, where the tanks are made of boiler steel. These were manufactured by a Kansas City boiler-making concern. At the St. Louis yards the vat is made of wood, but is lined with galvanized steel. There is also a dipping vat

## "Winter Finds Out What Summer Lays By."

Be it spring, summer, autumn or winter, someone in the family is "under the weather" from trouble originating in impure blood or irritated condition of the system.

All these, of whatever name, can be cured by the great blood purifier, Hood's Sarsaparilla. It never disappoints.

**Abscesses**—"I am past 54 and my good health is due to Hood's Sarsaparilla and Hood's Pills, which purified my blood and healed the ugly abscesses that troubled me." Mrs. BRITTON C. ESTELL, Southard, N.J.

**Dyspepsia**—"My husband doctored a long time for dyspepsia with only temporary relief. The first bottle of Hood's Sarsaparilla helped and the second cured him. It cured my sick headaches." Mrs. MARY A. CLARK, Wilmington, Vt.

**Hood's Sarsaparilla**  
Never Disappoints

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

at Norman, O. T., which was built by the territorial officers for Government experiments. Another one is located at We-woka, O. T., and is owned by private parties. The one at We-woka is on the Oklahoma, Choctaw & Gulf road and the one at Norman is on the Santa Fe. It has been found that the vats lined with steel or made entirely of steel are better than the plain wooden ones. The wooden vats will not hold the oil, and they are not generally satisfactory. The Government will authorize and supervise the dipping at any of the vats where the necessity for so doing is apparent.—Drovers' Telegram.

### About Kansas Swine Judges.

Mr. F. P. Maguire, Haven, Reno County, Kansas, one of the directors of the Kansas Improved Stock Breeders' Association, offers the following pertinent suggestion:

"A question of interest to every breeder at the present time is the readoption of the old plan of the Swine Breeders' Association in selecting a list of competent judges whom the association can recommend to the various fair associations. Many of those on the old list have evidently retired, and, in justice to exhibitors and breeders who may show hereafter, our breeders' association should recommend a list to the fair associations so that the fairs may not select hog men for horse judges, and horse men for poultry displays. It is plainly the duty of the association to select expert judges for the different classes of stock, men who are competent and up-to-date; also members of the association. The directors of the association should select a list of judges for 1899 and at the next annual meeting the association should name a list for 1900."

### Our Exports of Mutton.

The absence of mutton from our list of April exports is made more conspicuous by the immense volume of trade which we do with Europe in beef and pork products, says the National Provisioner. It might be urged that we are too far from this market for profitable competition if it were not for the fact that our greatest competitor in that market ships frozen mutton fully 10,000 miles further than we do, to it. It looks strange that with the tropics and this vast distance eradicated we can not supply Europe as well with mutton as with our other meat products. Canada and Argentina each send to Great Britain three times as much mutton as we do, while Australasia exports to the same country much more mutton than all of the balance of the world does. It can not be, and it is not true, that our mutton is inferior to, at least, the North or South American product, and a refrigerated carcass should reach the foreign market at less cost, and in a more acceptable state from America than even a defrosted frozen carcass. We are short now, in sheep, but generally the American demand is not equal to the American supply. If so, we can, like others, breed flocks for the foreign market. Drovers' Journal and Stockman.

### The Bacon Hog.

The matter of raising strictly bacon hogs is still being agitated by farm papers throughout the country and the farmers are being deluged with advice as to breeds, feed, etc. As a matter of fact the Western farmer is not looking for a bacon hog. He cares very little what kind of a hog the market calls for. What he wants is the hog that will market his corn and other grain quickly, cheaply, and advantage-



## Horse Owners! Use

GOMBAULT'S



## Caustic Balsam

A Safe Speedy and Positive Cure

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

ously. In other words, he is not trying to produce an ideal hog; he is simply trying to develop a hog that will economize the disposition of his grain and other farm products. In doing this he has arrived at the fat, quickly-maturing porker that is so common to-day throughout the West.

It is very evident the packers are not desperately anxious for the so-called bacon hogs or they would pay more of a premium for them. At 10 to 25 cents premium it will hardly pay an average Western farmer to raise the kind of a hog that English or Canadian farmers want. If the packers want bacon hogs they will have to advance the premium for them very materially. As it is the American packer simply recognizes conditions as he finds them and his aim has been to most advantageously utilize the hog that the farmers find it most profitable to produce. It is not a matter of education or lack of education that makes Western farmers raise fat hogs. If the market demanded and prices warranted long, thin hogs the American farmer would be quick to produce that kind. Experience has taught him, however, that the man who can turn off 250 to 280-pound hogs at 9 to 10 months old is the man who gets the best prices year in and year out and makes the most money out of the business, and he will continue to raise that kind of a hog until there is more money to be made out of some other kind.—Drovers' Journal and Stockman.

## Stoke Pogis Marigold 41095.

On the first page appears a correct picture of a grandly bred Jersey bull, the breeding of which is unsurpassed as to the butter record of his ancestors. This bull has no superior in the West and individually is as fine in all points of conformation as his breeding, which is par-excellent. Stoke Pogis Marigold is at the head of Sayda Polo Jersey Farm, located near Parsons, Kans., and is owned by W. C. Moore, Junction City, Kans., who is ambitious to have an ideal herd of Jerseys, having already spent a great deal of time and money in selecting the best bred animals as a foundation for the herd. Among the females in this herd are: Sayda Polo, sire, Major Polo, a son of J. Massy's Polo, 30 pounds; dam, Sayda M 3d, 20 pounds; 2d dam, Sayda M., 22 pounds; 3d dam, Sayda 3d, World's Fair cow, 30 quarts milk daily in full flow. He also has a daughter of Anno Maria, 18 pounds, the dam of Belle Turner, 20 pounds; also a daughter of Torquil 2d, a double grandson of Tormentor and traces on the dam's side to Matilda. May Queen Ida 129026 and Harry's Ida 49060 are two cows in the herd with a wonderful butter record and with thoroughbred ancestors. Mr. Moore also has seven daughters of Stoke Pogis Marigold.

Such a richly bred herd as shown by Sayda Polo Jersey Farm is a credit to Kansas and Mr. Moore deserves the greatest success as a reward for his enterprise with improved Jersey stock, consequently the grandly bred young bulls now offered should meet with ready demand from Kansas breeders.

## Gossip About Stock.

Last week's sales of horses at Kansas City marked one of the best records yet made. Over 400 head sold at very satisfactory prices. Everything with quality sold worth the money.

An inter-State stock stock-raisers' convention is now being arranged for, to be held at Fargo, N. D., during July. Railway magnates and local statesmen are promoting the meeting.

Nebraska has a new stock brand law which goes into effect July 1 and provides that "any person or persons having cattle, hogs, sheep, horses, or mules, shall have the right to adopt a brand or mark, for the use of which he shall have the exclusive right in this State after recording such brand or mark."

The newly elected officers of the American Tamworth Swine Record Association are as follows: President, Edwin O. Wood,

Flint, Mich.; secretary, E. N. Ball, Hamburg, Mich.; directors (in addition to the president and secretary), T. L. Endsley, Charleston, Ill.; John Fulton, Jr., Brownsville, Ont.; F. H. Rankin, Jr., Flint, Mich. The association is in a splendid and prosperous condition, and the Tamworth is gaining in favor among breeders in the corn belt and throughout the United States and Canada.

D. P. Norton, breeder of Shorthorns, Dunlap, Kans., sold Red Buccaneer to W. E. Tatman, Harper, who wrote him as follows: "I like him better every day. Shorthorn breeders here pronounce him a regular dandy plum in every way. I am a life subscriber to the old standby, the Kansas Farmer, in which I saw your advertisement. You will hear from me again later on."

John McNaught, Las Animas, Colo., reported to the State board of agriculture as follows: "In 1898 I lambed 200 ewes in January and sold the lambs in Kansas City in March for 8 cents per pound. They weighed 53 pounds, and brought \$4.24 per head. Two weeks later I sold the ewes for \$4.75 per hundred pounds, and, as they weighed 96 pounds each, they brought \$4.56 per head. Neither the ewes nor the lambs had any green feed."

A writer in the London Meat Trades Journal recognizes the splendid quality of our export beef in the following appreciative paragraph: "The bullocks and beef from the United States have been by far the best of our foreign supplies; perhaps we ought hardly to call them 'foreign,' as we have had Polled Angus, Herefords, Devons, Shorthorns—in fact, all our best English breeds, only bred and fed in America—sent over here in splendid condition, and every attention has been paid to the smallest details towards success by those splendid, energetic business men, the Americans. The Canadian supply is also good, but not equal to that from the States."

Natural Body Brace is a device used as a rational cure for the ills of womanhood. It is not simply an abdominal supporter and shoulder brace—it is that and much more. It takes hold of the whole trunk so as to secure erect posture, and properly balance and support every internal organ. This brace has the endorsement of the best medical profession, and the enthusiastic praise of its users who have been cured by its use. It is manufactured by the Natural Body Brace Co., Salina, Kans.—one of the most successful institutions in Kansas, which, running at its full capacity, can hardly keep up with the orders received daily from all parts of the civilized world. The brace is sold on a thirty-day guarantee. Every lady reader of the Farmer is advised to consult the advertisement and write for further information.

John Morris, the veteran breeder of registered Shorthorn cattle, Cotswold and Shropshire sheep and Berkshire swine, held his fifth annual sale of Shorthorns Wednesday at the fair grounds adjoining Chilli-cothe, Mo. There was a good attendance, representative breeders and prospective buyers being present from Ohio, Illinois, Mississippi, Iowa, Kansas and Missouri. A major portion of the offerings were secured by Missouri buyers, who took 33 head; 8 went to Kansas, 3 to Mississippi, and one each to Illinois and Iowa. The top priced bull was lot 36, the 15 months old Red Cup 2d, a son of Red Cup 121750, and out of Caroline 2d vol. 40, she by Imp. Scotchman (105418). He went to Chas. S. Horn, of Fowler, Ill., at \$315. Geo. Bothwell, of Nettleton, Mo., whose show herd attracted so much attention when out last, winning nearly all first premiums in competitive rings, secured lot 32, the 7-year-old cow Caroline 2d vol. 40, by Imp. Scotchman (105418) and out of Caroline vol. 28, p. 776, for \$350, topping the sale. Five of the cows were over 8 years old and five head of the female offerings were heifer calves. The cattle were in thin flesh and it was conceded on all sides that had they been up in sale ring condition, their breeding and Scotch topped character, warranted better prices. Take the sale, however, as a whole, it was a successful one, in fact, the best one yet made by Mr. Morris. The buyers may be considered fortunate in their purchases, as every animal sold was well worth the price paid. The summary is as follows:

13 bulls brought	\$1,725.00
Average	132.69
33 cows and heifers	4,315.00
Average	130.75
46 head brought	6,040.00
General average	131.30

## One Fare for Round Trip

to Cleveland, O., via Nickel Plate Road, on June 25th and 26th, with return limit of June 29th, 1899. Three through trains daily. Chicago depot, Van Buren St. and Pacific Ave., on Elevated Loop. For further information, write General Agent, 111 Adams St., Chicago. (12)

## Improvement of Seed Wheat.

Any farmer who has ever closely observed a wheat-field just before ripening has noticed that there is a great difference in the appearance of the heads. Some are early, large, and well-shaped, while others have just the opposite qualities. The observing farmer may make these qualities aids in the selection and improvement of the variety.

Now is the time for farmers to think of methods for the improvement of their seed wheat. Selection is a method of the greatest importance for the amelioration and the preservation of a type. To select intelligently and effectively, the farmer ought to go into the field before the crop is ripe and mark the plants possessing the desired qualities. After the ripening of the crop the best heads should be selected from the marked plants, and finally the best grains should be selected from these.

A very desirable quality in Kansas wheat is earliness. The earliest heads can best be found by a careful examination of the plants a few days before ripening.

Each year, every farmer should select a few heads of the finest quality, and the best grains from these should be planted and carefully cultivated. Selections from the resulting plants should be continued in subsequent years, and if this process is kept up faithfully for a series of years an improved type will be originated.

The inclemency of the weather during the past winter acted as a selecting agent in many parts of Kansas. The few plants that survived in many localities no doubt possess a greater constitutional vigor than the average. Seed should be saved from these whenever possible.

Farmers should awaken to the importance of selecting and breeding their own seed wheat. Now is the time to begin the work.

GEORGE L. CLOTHIER.

Manhattan, Kans.

## Sowing Kaffir Corn.

Editor Kansas Farmer:—In sowing Kaffir-corn for feed roughness how much ought to be sown to the acre? At what time is it best to sow—same as to sorghum? How much ought to be sown to the acre for hay? How much if intended to cut for seed? Is it advisable to mix and sow half millet and half sorghum to make into hay? I am aiming to raise all the feed I can for roughness. S. M. KNOX. Humboldt, Kans.

## Paint Talks--XVII.

## THE SECONDARY EVILS OF "CHALKING."

If it were true that all other paints excepting white lead come off in scales or flakes and that all paints do come off in time, the assertion that chalking is a virtue might have some plausibility. But, fortunately, the assertion is not true. All paints wear out in time, from the abrasive action of the elements; but if we have two paints, one of which wears away from the surface by the grinding action of rain, hail, snow and dust, leaving the remaining paint still impervious and resisting, while the other paint decomposes, becomes porous, and disintegrates throughout its entire substance, it is evident that the former of these two paints affords the better protection.

"Chalking" or crumbling is an inherent defect in all pure white lead paints, and no care in manufacture or preparation will obviate it. It is due to the unstable chemical nature of the pigment and to its low oil-carrying capacity. On the other hand, properly-made zinc paints do not chalk, but wear away.

It is easy to understand why painters like a chalking paint. Even if they have no selfish motive in wishing the paint to decay quickly, they like to be able to brush off the dusty old paint and soak in a new coat—the job is so ridiculously easy, and then the spongy surface uses up a great deal of paint, which makes it profitable.

But this porous surface which so greedily absorbs oil, takes up water with as much avidity, as any one can demonstrate by applying a soaked sponge to a chalky surface. This casual fact simply means that a chalky paint no longer protects the surface, but actually acts as a sponge to hold water, and thus does more harm than good.

Another secondary evil of the chalking and dusting off of white lead is the poisonous nature of the dust. The action of lead on the system is slow, but it is sure, and no one that is exposed to it can entirely escape its consequences.

The remedy is obvious. Use a paint that does not chalk. Such paints are offered in abundance, and they are all based on zinc white. Or if any one is so prejudiced that white lead has become a fetish, at least give it some semblance of durability by covering it with zinc white, or by having zinc white ground into it; and zinc in a paint, whatever other ingredients it may contain, absolutely prevents chalking.

STANTON DUDLEY.



The descent is certain from weak lungs, lingering coughs, throat troubles or bronchial affections through bleeding lungs, to consumption, if the first stages are neglected. Thousands of people who are now in their graves would be alive and well to-day if they had heeded the first warnings of those troubles which lead to consumption and death.

The hacking cough, spitting of blood, weak lungs, and all similar troubles of the organs of breathing, will surely lead to consumption, if they are not already the signs of it. Then there are the other indications of the approach of consumption, such as night-sweats, emaciation, or wasting away of flesh from bad nutrition, which, if neglected, lead to certain death.

Ninety-eight per cent. of all the cases of weak lungs, bleeding lungs, lingering and obstinate coughs, and other bronchial and throat diseases, which have been treated with Dr. Pierce's Golden Medical Discovery, have been cured by it. Do not wait until your throat trouble becomes serious. All bronchial and throat troubles are serious. The time to take the "Golden Medical Discovery" is right at the start.

Even if your throat trouble has been neglected until it has been pronounced pulmonary disease or consumption, do not hesitate to use the "Golden Medical Discovery," for thousands of letters from the sufferers themselves, who are now well, bear evidence that the "Golden Medical Discovery" will cure, even after good physicians have pronounced the disease pulmonary consumption.

"I had been troubled with bronchitis for several years," writes Mrs. Orin O'Hara, Box 114, Fergus Falls, Ottertail Co., Minn. "In the first place, I had sore throat. I doctored with different physicians and took various medicines, but got no relief. I raised from my throat a sticky substance like the white of an egg. Could not sleep, and had made up my mind that I would not live through the winter. I took Dr. Pierce's Golden Medical Discovery and 'Favorite Prescription' alternately, and in a few days began to see that I was better. I took eight bottles. I have not felt as well in years as since using these medicines."

Unfailing—Dr. Pierce's Pleasant Pellets for constipation and biliousness.

## Excursion Rates to Western Canada

And particulars how to secure 100 acres of the best wheat-growing land on the continent, can be secured on application to the Superintendent of Immigration, Ottawa, Canada, or to the under signed.

Specially conducted excursions will leave St. Paul, Minn., on the first and third Tuesdays of each month during the summer for Manitoba, Assinibola, Alberta and Saskatchewan.

Settlers' rates from St. Paul on the Great Northern to Neche on the boundary line, \$6; on the Northern Pacific to Pembina, \$6; on the "Soo" Line to Portal, \$10.

## J. S. CRAWFORD,

214 West Ninth St., Kansas City, Mo.,  
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## WEEKLY WEATHER-CROP BULLETIN.

Weekly Weather-Crop Bulletin of the Kansas Weather Service, for week ending May 29, 1899, prepared by T. B. Jennings, Section Director:

## GENERAL CONDITIONS.

A warm week, with more general rains, improved the conditions over the State very materially. Rains were light in the western and extreme eastern counties, increasing towards the central counties, with floods and washouts in McPherson, Marion, Harvey, and Butler. Severe hail-storms, beginning in Saline, Monday night, swept over parts of McPherson, Marion, Butler, Chase, Greenwood, Elk, and into Chautauqua.

## RESULTS.

## EASTERN DIVISION.

Crops have responded to the fine growing weather, and marked improvements are seen everywhere. Wheat is rapidly heading in all of the counties south of the northern tier. Oats are beginning to head as far north as Allen. Flax-fields are fine. Corn is generally clean or being cleaned and is growing well, some being knee-high in the south, a foot high in the central counties; most of it much smaller. Alfalfa-haying is progressing as far north as the Kansas River. New potatoes are being marketed in Chautauqua. Strawberries are ripening generally and are very abundant.

Allen County.—Good week for work and growing crops; wheat headed; oats heading; alfalfa-cutting begun; millet and soybeans being put in.

Anderson.—Cooler and more cloudy than best for corn, but fine for wheat; alfalfa ready to cut; pastures good; gardens fine.

Atchison.—Growing week, though cool for corn; meadows growing finely; early potatoes looking well; corn all planted, probably half of it beginning to be cultivated; cherries and apples still dropping.

Bourbon.—Favorable week; corn a good stand; all crops doing well; wheat all headed and promises well.

Brown.—Corn-planting about finished; early corn up and being cultivated, generally a good stand; wheat thin and weedy, poor prospect; potatoes good; apples blighted, not setting well; pastures good.

Chase.—A growing week; great damage to

week; corn and small grain look fine; small fruits ripening; strawberries abundant. Osage.—Crops doing well; corn being cultivated; chinch-bugs doing damage in localities; the showers are a great help to pastures.

Pottawatomie.—Alfalfa-haying begun; wheat headed; chinch-bugs troublesome; sweet potatoes set and doing well, an unusually large acreage planted; corn clean and doing well; pastures fine.

Riley.—Corn cultivation general; alfalfa-haying begun; many apples not doing well.

Shawnee.—Corn a good stand and doing well; some wheat-fields plowed up and planted to corn, wheat doing better in south and east part of county; oats not doing well; apples promise a good crop.

Wilson.—Wheat headed; flax very fine; some corn knee-high; corn-fields being rapidly cleaned; alfalfa-haying begun; potatoes and pastures fine.

Woodson.—Corn cultivation general, some being cultivated the second time; Kaffir-corn being planted.

## MIDDLE DIVISION.

The heavy floods in the central counties washed out many fields and drowned large numbers of cattle and hogs in Marion and Butler. All crops in the hall district—in Saline, McPherson, Marion, and Butler—were either destroyed or badly damaged, including fruit. Outside of the hall the crops are generally greatly improved, except in Edwards, Stafford, and Kiowa, where rain is badly needed. Wheat is heading north in Ottawa; oats are heading in the south. Alfalfa-haying in the central counties.

Barber.—A fine growing week, though many fields of corn, Kaffir, and cane were washed out first of week; cultivation progressing; prairie-grass fine; cattle doing well.

Barton.—Wheat improving nicely and beginning to head; corn-planting not finished yet.

Butler.—Monday night the severest hail-storm in the history of the county swept from the Marion line across to Elk, destroying many of the crops in the way, stripping trees of fruit and foliage, and, in some cases, bark; hailstones size of a man's fist were common; masses of ice still left in the ravines at close of week; large numbers of cattle killed, some drowned.

Cloud.—Good rains; grasses growing nicely; corn weedy.

weather, and is about all headed; corn, oats, and gardens growing rapidly; alfalfa-haying began but the rains have retarded it and ruined some hay; apples falling badly; hail in southern part Monday evening, 22d, totally ruining all kinds of crops, destroying fruit, and injuring buildings; farmers are listing corn in the wheat and other fields.

Sedgwick.—Wet week; hail in north part of county, damage slight; corn good stand but needs cultivation; wheat and oats heading; alfalfa injured some by too much rain; apples doing well; some corn yet to plant.

Smith.—A fine growing week; all crops doing well; corn being cultivated; stock looks well.

Stafford.—Wheat, oats, and barley at a standstill; dry, windy week; ground too dry to plow; grass drying up; everything suffering for rain.

Sumner.—Wet and cloudy; some wheat and corn suffering from wet; corn very weedy; wheat and oats heading.

Washington.—Corn has made but little progress this week; cherries half a crop; not many grapes; apple crop not very promising; much replanting of corn since last week's flood.

## WESTERN DIVISION.

The rains this week, though of a local character, have done much good. Alfalfa is beginning to bloom and will soon be ready to cut; corn is being cultivated in the northern counties, the southern being devoted more to forage crops. Wheat and the range grass are in better condition north than south. Grasshoppers are still threatening some portions.

Decatur.—A growing week; much of the winter and part of the spring wheat very weedy; grasshoppers hatching out in places in great numbers; corn doing finely; cherries, apples, grapes, and strawberries doing well; alfalfa beginning to bloom.

Finney.—Dry and hot; no water in river; first crop of alfalfa very light; range grass drying up.

Ford.—Dry, windy week; only with the most favorable conditions from now on will there be any wheat to cut.

Grant.—Frost 21st, sufficient to kill some garden truck; weather cold and dry; range grass drying up.

Gray.—Alfalfa about one-half crop, will probably not be cut until middle of June; range good; cattle doing well; windy weather.

Greeley.—Farmers busy cultivating early corn; stock doing finely on the range; late grain still in ground, too dry to germinate; local showers.

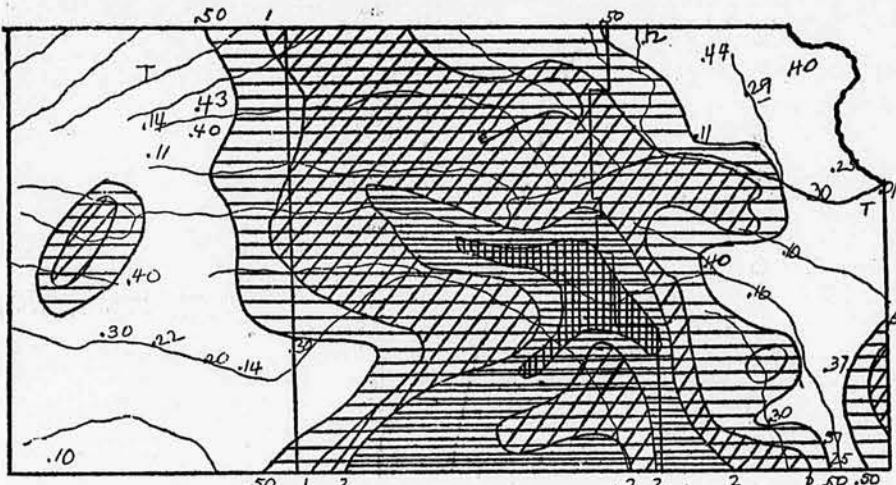
Hamilton.—Light showers during week; crop prospects not flattering; high wind first of week.

Kearny.—Hot winds first part of week; pasture burning up; good rain on 25th, more rain needed; alfalfa in bloom, cutting will begin next week.

Logan.—Good rain on 25th, with hail. Morton.—Blue-stem grass holds on well but the buffalo-grass stands still; planted crops not growing well; drifting sand cuts off garden stuff.

Ness.—A favorable week for growing crops; grass green again and growing well; stock doing better; potatoes and gardens very backward; planting forage crops; fruit doing very well, mostly wild; small grain improving.

Norton.—A good growing week; several good rains; some small grain taken by weeds; very little good winter wheat or rye,



ACTUAL RAINFALL FOR WEEK ENDING MAY 27, 1899.

crops and stock in southwest part of county by hail and flood, Monday night, 22d, corn, wheat, and oats beaten into the ground and trees stripped of fruit and foliage; alfalfa beginning to bloom; sorghum and Kaffir show good stands.

Chautauqua.—Monday night, 22d, hail-storm very destructive to fruit, corn, wheat, and gardens in its path; wheat heading; alfalfa-cutting progressing; home-grown potatoes on market; strawberries abundant, rotting on vines.

Cherokee.—Wheat heading, much cheat; corn-planting in progress, about one-sixth yet to plant.

Coffey.—Growing week but will need rain soon; corn being well cultivated; chinch-bugs bad.

Douglas.—Corn doing very well; wheat on the bottoms doing fairly well, on uplands poorly, the Hessian fly and chinch-bugs are doing their work; alfalfa being cut, turning out well; fruit still falling badly.

Elk.—Hall, the 22d, injured fruit and window glass; too wet most of week to cultivate, corn getting weedy; apples dropping badly.

Franklin.—Favorable week for growing crops; corn and flax doing well; oats rather poor; hay crop will be light.

Greenwood.—Corn growing finely, and generally clean; grass unusually good; some fields of wheat are being plowed up on account of bugs, others damaged but little or none.

Jefferson.—Wheat beginning to head; corn fine; cherries dropping; apples promise fair crop.

Johnson.—Good week for work and plant growth; chinch-bugs damaging wheat in some fields.

Labette.—A growing week; much wheat heading out cheat; corn-planting continues; cherries a failure; apples doing well.

Leavenworth.—Corn mostly planted; wheat promises little; gardens doing well; apples and cherries fair; pastures good.

Lyon.—All crops doing well; alfalfa-haying begun; some corn a foot high.

Marshall.—Corn, oats, and grass making good growth; the wheat left standing is not doing well; much millet being sown.

Montgomery.—Good week; cultivators busy; wheat heading and looks promising; some corn knee-high.

Morris.—A very good week for growing crops; corn cultivation progressing rapidly; alfalfa beginning to blossom; apples doing well; cherries and plums dropping to some extent; pastures very fine; early potatoes blooming and promising well.

Nemaha.—Favorable week; corn being cultivated; potatoes doing well; fruit-trees seem quite loaded; vineyards hurt by frost and are setting very few grapes.

Neosho.—Fair and warm, good growing

Cowley.—All crops doing well; ground in fine condition; too wet to cultivate, some corn weedy; grass very fine; strawberries abundant.

Dickinson.—Crop prospects greatly improved; wheat and rye heading, straw short; oats a poor stand; corn doing well; alfalfa beginning to bloom; pastures good.

Edwards.—Wheat a failure; oats and barley nearly so; some early wheat heading but too short to harvest; corn doing fairly well; grass fair; alfalfa very light crop; grasshoppers numerous in some places, chinch-bugs in others.

Ellis.—Fine rains; wheat doing well. Harper.—Wheat growing well; all crops in favorable condition; spring crops in fine condition.

Jewell.—A good week for growing crops; corn growing nicely and cultivation begun; oats doing well where not weedy.

Kingman.—Wheat doing well in east part, generally a failure in northwest part; oats promise a good crop; corn, though late, is growing well; sorghum, Kaffir-corn, and millet still going in on wheat ground.

McPherson.—Fine growing weather; wheat doing well; corn being cultivated; oats small; grass fine; fruit will amount to little; severe hail-storm Monday night, in northeast part, crops destroyed, stock killed by hail and water.

Marion.—The hail-storm, Monday night, destroyed crops in a path about eight miles wide, some stock killed and large numbers drowned—220 drowned in the Goad pasture alone, fruit-trees stripped of fruit and foliage, and, in some cases, the bark.

Mitchell.—Fine growing week; everything in good condition; assessors' returns show 113,804 acres of wheat sown last fall, an increase of 32,470 over the previous year.

Ottawa.—A good growing week; wheat heading short; corn not a good stand in many fields, some being listed over; grapevines promise an abundant crop; strawberries ripe; cherries falling badly; alfalfa in bloom; some twenty head of cattle killed by lightning in northeast part on 25th.

Phillips.—Corn, wheat, and rye doing nicely; a fine week.

Republic.—A growing week; wheat heading, some bugs in it.

Reno.—A rainy week; wheat heading, and generally looks well, some poor pieces; oats look well; corn in fine condition and being cultivated; alfalfa-haying begun, fair crop; strawberries being marketed in abundance; some fruits dropping badly, but fair prospect for most fruits.

Rush.—All crops greatly benefited, especially wheat; oats and barley promise a full crop; potatoes look fine.

Russell.—All crops greatly benefited by the rain, and are looking much better; more rain needed.

Saline.—Wheat improved with the warm

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dry and windy too long; corn growing and being cultivated; all conditions favorable.

Rawlins.—Cool, cloudy week; nothing growing very well in east part, although the ground is in good condition from last week's rain; crops growing nicely in central and western part; grasshoppers not making any advancement over last week.

Scott.—Dry and windy; crops needing rain badly, will not go much longer without serious damage.

Sheridan.—Early fall wheat doing finely, late getting weedy; corn looks yellow, but a good stand generally; cultivation begun; grass good; all fruit promising except peaches; potatoes promising.

Thomas.—Fine week for all crops; corn-plowing begun; wheat and rye heading, weeds will take 5 per cent of wheat; grasshoppers hatching in many places.

Trego.—Prospects for late-sown wheat good; barley and oats fair; listed and sod corn fair; potatoes good; range grass excellent; more rain needed.

## Excursion to Cleveland, O.

One fare for the round trip via Nickel Plate Road, on June 25th and 26th. Tickets good returning to and including June 29th, 1899. Chicago depot, Van Buren St. and Pacific Ave. Address, General Agent, 111 Adams St., Chicago. (11)

To Mountain View, Okla., and Return, One Fare, Plus \$2.00.

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## The Home Circle.

### DECORATION DAY.

Crown them with roses,  
Our brave gallant dead,  
Red as the life-blood they shed.  
Strew o'er them lilies  
Fair as the peace they had won  
When the wild strife was done.

Wreath for them laurel;  
Their banner still waves  
O'er the land hallowed by graves,  
Bind it with myrtle;  
Loving tears will not cease  
For the dead heroes of Peace.

Stars and stripes waving  
Neath starlight and dew,  
Cheered our brave boys in blue;  
Through frost, rain and sun,  
Over mountain and sea,  
Led their march to the sea.

Back walled the south wind,  
While hoarse on its breath  
Came the mad music of death.  
Loud roaring canon,  
Fierce screaming of shell;  
For the dead—paen and knell.

Dead, wounded and missing.  
Ah, who can repeat  
The wild cry of grief in the street,  
When the messages came,  
Fraught with triumph, yet said:  
"Some are missing and dead."

One fell for glory,  
His comrade in arms  
Dying for Freedom's sweet charms;  
One for his country,  
Her laws, honor, and fame,  
Leaving not even a name.

They fell in the vanguard  
Of Liberty's host.  
Count not the sacrifice lost  
That gave back to freedom  
The long-shackled slave,  
And made for Rebellion its grave.

Bring roses and lilies,  
Bring oak-leaf and bay,  
To strew o'er the fallen to-day.  
Bring myrtle and laurel  
For statesman and brave,  
Poet, scholar, and slave.

Honor our loved ones!  
Shout loud the glad song  
Of victory over the wrong.  
Forgive the brave foe  
Who fell on the field  
While exulting, still yield

Fame to the soldier,  
But hate to the cause  
Lost in defying the laws  
Framed by our fathers,  
This land to unite  
In freedom, equally, right.

Our Stars and Stripes waving,  
One country enfold;  
And the army of martyrs enrolled  
In the ranks of the dead  
Neath grave-dust and dew  
Wear both the gray and the blue.  
—Mrs. Calvin S. Brice.

### "PEACE HATH HER VICTORIES."

A. A. SMITH, BURLINGTON, KANS.

The door opened and a pinched, withered little old face surmounted by faded and old-fashioned head gear was thrust into the room.

"Is the editor in?"

"Just stepped out, madam," replied the foreman. "Anything I can do for you?"

The caller shuffled into the room, closed the door and placed a dilapidated old hand-bag upon the file-stand. She was a bowed, withered little old lady dressed in shabby garments, and bearing in her countenance the pathetic traces of poverty and ill health.

"O, I just wanted to pay him a dollar," she said in her thin, querulous tones. "I owe him a good bit for the paper and it oughter have been paid long ago, but with the grippe and the measles and the rheumatiz and doctors' bills it don't seem like there's anything to spare for newspapers. I reckon this'll help him along until I can do better, and it'll show that I haint forgot about it, anyway."

"I don't get my paper regular," continued the garrulous old woman while the foreman wrote a receipt. "There's another N. C. Jackson who gets our mail, and if I drop my poor man's name that's been dead now five year there's another Mrs. Julia Jackson, too. Don't seem any way out of it but to get married and change my name again, does there?" And the withered little old woman applauded her own wit with a croaking laugh.

"Something of a character, apparently," remarked the foreman. "Do you know her?" he asked of the exchange fiend who was sitting in his accustomed corner appropriating the editor's favorite papers.

"Do I know her?" repeated the exchange fiend, rising and looking into the street where their late visitor was unhitching a team of skinny horses. "I reckon I do, and a very different woman she was thirty years ago. Speaking of the ravages of time, right there's a pathetic instance for you. Thirty years ago Julia Caruthers was the brightest girl in the country, and she had pluck, hope and ambition for a dozen. With her wit and her lively tongue she was the life of the company in those days. Who'd a-thought she'd ever grow silly and sour like that?" and the old man shook his head mournfully.

"What was the matter?" asked the fore-

man. "Foolish marriage, drink and the like?"

"No, Jackson was a pretty good sort of man. A poor manager and too good-hearted to get along, but he thought the world of Julia and she was loyal to him through all her troubles. It was the boys that did it. Having no children of their own they took five orphan boys, one after another, to raise. If you want an object lesson in the meanness of human nature, young man, you'll find it in the conduct of those boys. She slaved for those foster children as mighty few mothers ever do for their own, and the vipers turned and stung her. 'Little mother,' they used to call her in the days when they needed her, and when they got big enough to hustle for themselves they struck out without never so much as a 'Thank ye' or a visit back to cheer the lonely woman who had made them. It was the same story five times over, and the base ingratitude of those boys made her the bitter, childish wreck she is. Sickness and adversity have done their part, but Julia Jackson was not the woman to be beaten by such troubles. The boys she loved and reared made her your 'strange character.'"

The skinny horses and the old farm wagon with the little old woman on the springless seat had clattered out toward the open country. The foreman gazed thoughtfully after the crazy equipage.

"And where are the boys now?" "Don't know," answered the exchange fiend shortly. "Feathering their own nests somewhere, I reckon. The last one's down at Tampa with the volunteers, I hear. Julia bought a lot of bunting and flowers for Decoration Day. Anything about the old soldiers is a hobby with her, and all because her heart's with that scapegrace soldier boy of her's."

### II.

The opening scenes of the Spanish-American war had stirred the hearts of the people to an unusual interest in the observance of Memorial Day. An increased interest in all things pertaining to the soldier, and a deeper reverence for the brave defenders of the flag who lay in Graceland Cemetery sleeping the dreamless sleep of eternity caused the farmers to flock into Peytonville as they were wont to do upon a gala day, but in the spirit of reverent sorrow which pervaded the concourse there was no suggestion of festivity. They came to honor their soldier dead, and with rustic ceremonies such as might have provoked a smile upon any other occasion they performed their duty. The little procession to the cemetery was made up of brass band and drum corps, "Peytonville Guards," orator of the day and local dignitaries in carriages, Grand Army Post, Sons of Veterans, Woman's Relief Corps and citizens in carriages and on foot. They marched through the shady streets where the red, white and blue fluttered in the breeze and the air was laden with the perfume of flowers—marched under the rippling folds of the old flag and through lanes of roses hanging in wreaths, in garlands, in festoons of fragrant beauty—marched to the tune of stirring yet solemn patriotic music which never grows old and while love of home and country endures will touch a responsive chord in the heart of every loyal citizen. Memorial Day in Peytonville was a day of sad and tender recollections—a day whose proper observance was esteemed a hallowed privilege as well as a duty.

The curious glances of many spectators who lined the sidewalk were directed toward a young man in the uniform of a private soldier, whose face was unshaven and bore the traces of recent illness. There seemed in the young soldier something vaguely familiar to many in the crowd, but he was recognized by none. The stranger gave little heed to the faces which passed before him. If he recognized any of them he gave no sign, and directed his attention to the old flag and the awkward squad of "Guards" marching beneath it, the other divisions of the little procession, and finally to the citizens in vehicles where a little old woman in a dilapidated farm wagon drove a pair of skinny horses.

He followed the crowd to the cemetery, where with simple, touching ceremonies the citizens placed their tribute of floral beauty upon the honored graves. He returned with them to the village, and before an improvised stage in the public park he stood and drank in the words of the orator of the day, a young and brilliant attorney from a neighboring city. New and strange did some of those words sound to him.

"My fellow citizens, do we fully realize the deeper significance of these ceremonies? Is it alone for our dead heroes' sake that we deck their lonely graves with flowers? Do we realize the futility to them of these loving attentions to their sacred dust? They can not thrill with pride at our homage nor know the measure of our reverence for them. They are insensible to our tears, our prayers. The perfume of these roses

can not penetrate the tomb. Wherever may be our dead heroes now—whether in the peace and joy of a better world or sleeping the dreamless sleep which knows no waking—our loving tributes to their memory mean nothing to them now. It is for us, the living, to profit by our own devotion. Memorial Day is a day for the living, not for the dead. As the years glide by into the silent but unforgotten past its observance becomes more and more a pleasure as well as a duty, because it springs from pride and love of country and hope for her future greatness. We see again the deeds of valor without which no nation can become great. We grasp anew the heroic spirit of our country's defenders which prompted them to offer up their lives a willing sacrifice upon the altar. We feel again the thrill of admiration and resolve that we, too, if need be, will enter the storm of battle and emulate their great sacrifice."

The crowd listened in rapt attention. "Memorial Day a day for the living." The thought had never before been presented to them in just that way. The orator raised his hand in impressive yet graceful gesture, and his piercing eyes seemed to look straight into those of the young soldier who stood directly in front of the platform.

"These patriotic dead gave up their lives for the country because it was their duty. To all good citizens then their country's need was greater than that of father, mother, husband, wife. To-day we can use in the army but a fraction of the great body so eager to serve in its ranks. What of the balance? Do they hearken to the voice of their paramount duty? Can they not hear its clarion call elsewhere than in the pomp of war, the storm and blood of battle? Do they heed the responsibilities of home—the common-place, the drudging duties of father, husband, son or brother? If we would profit by the sacrifice of those who memory we revere we must learn the lesson of their devotion to duty. Upon the brow of each brave boy in blue who would go forth in humanity's name I would place the crown of valor; but take heed that you leave not more sacred duties behind you. There are enough who have not the ties of dependent ones to bind them. It is their duty to go; take heed that you cast not away the sacred responsibilities of the home. Consider well your duty, and may the examples of these consecrated dead whose renown shall never perish be your guide."

The speaker ceased. With trembling lips and eyes half blinded by the tears the young soldier turned and pushed through the crowd. By the fence where the vehicles stood he paused before an old farm wagon. The Little Mother came forward with the crowd and looked with startled eyes upon the stranger. He held out his hands, and then—

Go thy way rejoicing, Little Mother, to thy humble home made brighter than a palace by the prodigal's return. Forget the sorrows of those many years when thy tender mother's care was so shamefully repaid. Cast upon the manly shoulders of him whose duty as a son is paramount to that of a soldier the burden thou has borne so long, and turn thy face serenely toward the tranquil sunset of thy useful life. Thank God for all thou has suffered, for in the heart of one of thy flock the seeds of thy precept and example have grown and blossomed into a noble manhood, and bread thou didst cast upon the waters hast returned to thee after many weary years. Go thy way rejoicing Little Mother.

### III.

"Her troubles are about over, thank God," said the exchange fiend to his tolerant friend, the foreman. "The scapegrace soldier boy's turned out all right, after all."

"Got enough of soldiering, did he? Found it wasn't the snap he was looking for?"

"No, it wasn't that," replied the exchange fiend. "He got sick and might have been honorably discharged, but he was grit clean through and wouldn't have it. He got a furlough and came home to see the Little Mother, and somehow he kinder got to seeing things right. It wasn't because he was tired of soldiering."

"What's he going to do now?" persisted the skeptical foreman. "Desert?"

"Not much. He'll go back and get his discharge all straight and honorable, and then he'll take care of that blessed little woman."

"The other four don't show any symptoms of a pricked conscience yet. Mebbe they never will. Mebbe it's in the blood of this fellow to be better than the rest. But I've an idea, young man, that Little Mother's love for those boys won't be just like the seed in the parable, which fell among thorns and was choked. I've an idea that some time it'll struggle through the thorns and grow into something good, even if it's nothing better than weeping willows above her grave."

### Colds.

A cold in the springtime is usually considered more difficult to cure than one at any other season of the year. The system is usually "run down," or physically below par. The influences of heavy clothing, with a diet which has largely been preserved from the preceding autumn, combined with sudden changes in the weather and dampness, are largely the causative factors.

While a cold in itself is not always serious, still it may lead to conditions which are hard to correct and which prepare the way for more serious disorders. It is not the object of this short paper to go into the minutiae of the pathology, but it will be sufficient to say that it is simply an inflammation, with the exudation which accompanies all inflammations, and is known by different names, according to the location.

A cold in the head continued some time is catarrh, and may lead to destruction of the fine small bones of the nose and loss of the sense of smell. Situated a little farther back, where the nose and throat join, it may cause deafness in one or both ears in varying degree; in the lungs it is called pneumonia, which is often a fatal disease; and in the stomach and intestines it prevents proper digestion and assimilation, which is necessary to the health and strength of the body.

When a person "catches cold" one or more of the necessary body functions are seriously interfered with, and it is only necessary to correct this in order to cure the cold. The bowels, kidneys, skin, and lungs, each perform certain tasks in throwing off substances in the body, which are either poisonous to it or are of no further use. In the ordinary cold the action of the bowels and skin are usually suspended and the work performed by these is attempted by some other part; hence the high-colored urine and mucus thrown off by the lungs or from the membrane of the nose.

In the treatment of a cold it is evident that we should seek to regulate the various secretions of the body. In certain strong and robust individuals it will regulate itself in time, but it is dangerous to leave the body to regulate itself entirely. It should be assisted.

If constipation exists a brisk laxative should be given, as epsom salts, senna tea, or other preparation which will accomplish the same purpose. The unpleasant taste of epsom salts sometimes prevents this very efficient medicine from being used when it should be.

Hot lemonade increases the action of the kidneys and skin, promotes digestion, and is a good medicine in the springtime. To invigorate the skin, baths are very useful, followed by brisk friction with a coarse towel or the palms of the hands. Friction should be continued till a warm glow is produced. The cold pack is only useful in strong, robust persons, and is not generally used. A plain diet should be persisted in as long as the cold remains. After all, the most important thing is to keep the body functions active and reduce the possibility of catching more cold.

Topeka, Kans. W. H. HALL, M. D.

Catarrh in the head is cured by Hood's Sarsaparilla which eradicates from the blood the scrofulous taints that cause it, soothing and rebuilding the delicate and diseased tissues.

Hood's Pills are the only pills to take with Hood's Sarsaparilla. Cure all liver ills.

## Old Dresses Made New.

Easy Way to Have Good Clothes for Little Money.

## Home Dyeing a Pleasure with Diamond Dyes.

There's no easier way to save expense than to dye over your dresses, wraps, ribbons, etc., with Diamond Dyes. A package costs but ten cents, yet it will often save the expense of a new dress or jacket.

It's easy work to use Diamond Dyes. They are prepared specially for home dyeing, and will dye more goods for the same money than any other dyes.

Never use dyes that claim to color all kinds of material with the same dye. Diamond Dyes can be depended upon to make colors that will not fade or crock.

Sample card of colors and direction book for home dyeing mailed free on request.—Wells, Richardson & Co., Burlington, Vt.

### Mothers! Mothers!! Mothers!!!

MRS. WINSLOW'S SOOTHING SYRUP has been used for over FIFTY YEARS by MILLIONS OF MOTHERS for their CHILDREN while TEETHING, with PERFECT SUCCESS. IT SOOTHES the CHILD, SOFTENS the GUMS, ALLAYS all PAIN; CURES WIND COLIC, and is the best remedy for DIARRHEA. Sold by druggists in every part of the world. Be sure and ask for "Mrs. Winslow's Soothing Syrup," and take no other kind. Twenty-five cents a bottle.



## The Young Folks.

### WHY THEY TWINKLE.

When Eve had led her lord away,  
And Cain had killed his brother,  
The stars and flowers, the poets say,  
Agreed with one another

To cheat the cunning tempter's art,  
And teach the race its duty,  
By keeping on its wicked heart  
Their eyes of light and beauty.

A million sleepless lids, they say,  
Will be at least a warning;  
And so the flowers would watch by day,  
The stars from eve to morning.

On hill and prairie, field and lawn,  
Their dewy eyes upturning,  
The flowers still watch from reddening  
dawn,  
Till western skies are burning.

Alas! Each hour of daylight tells  
A tale of shame so crushing  
That some turn white as sea-bleached  
shells,  
And some are always blushing.

But when the patient stars look down  
On all their light discovers—  
The traitor's smile, the murderer's frown,  
The lips of lying lovers—

They try to shut their saddening eyes,  
And in the vain endeavor  
We see them twinkling in the skies,  
And so they wink forever.

—Oliver W. Holmes.

### SOME ODD SAYINGS.

A French servant, who had, no doubt, had a hard week, gave an excellent instance of the translation of an English phrase. It was a case of conveying to me that there had been a superfluity of work, which, if it continued, would prevent his taking advantage of a general holiday. "Hein! Al-right, al-right. But Madame does not know, perhaps? Monday (throwing indignant fingers toward me) till twelve I have not been on ze back. Tuesday again, and wiz siz lonche; and once more Wednesday I have not been on ze back." All of which was only a very good way of putting our expression of "being on one's feet all day."

Among poor people such sentences are legion. One must wonder if they are invented at the moment, or if they are sayings. This is the expression of the old-fashioned view of a modern servant: "It isn't she isn't a good enough girl. She's willing and she's strong. But flighty! Why, she leaves the house ten times for every once she comes in."

The wisdom of a mother or grandmother can be quoted with effect and prove most disarming to criticism. There was, for instance, the girl servant who would meet any attempts at correction or blame with: "There! I know. For mother's often said, 'Well, of all the girls I ever did see—you are one.'" And this there is no denying.

Charles Dickens understood this power of phrases made from nonsense or nothing, that can be so direct in its result, so unanswerable and conclusive. His books are filled with instances of the nature of Mrs. Crupp's sympathetic answer to young David's sorrowful unbosomings:

"Don't, Mr. Copperful—not another word! I'm a mother myself."

He would have liked the story of the needle-woman whose services were engaged by the day, and who had a habit of emphasizing her conversations with the words "As sudden as I sit here." Arriving in the morning, she sat till evening at her work, and was a rooted institution in the house. But in her fine determination to put a convincing reality to what she said, she would speak as if she had at that moment appeared through the ceiling.

Of this force of expression, whether achieved by straight or inverted methods, "slang" gives many instances. And the American phrase that questions the security of an object or cohesion of a scheme with "Will it stay put?" is, to my mind, its ugliness apart, a very pattern of concentrated meaning. Among the cottagers this power of expression results, as we have seen, from their use of simple language; of those plain words that state their case, unhampered or weakened by any search after extraordinary effect.

They will tell you the story of an accident or of a sorrow in the language of the Bible, and one is reminded, by their almost crude simplicity of narration, of the quiet strength in the description of the death of the Shunamite's son:

" \* \* \* And when the child was grown it fell on a day that he went out to his father, to the reapers. And he said unto his father, My head, my head. And his father said to the lad, Carry him to his mother. And when he had taken him and brought him to his mother, he sat on her knees till noon, and then died.

"And she went up and laid him on the bed of the man of God, and shut the door upon him, and went out. \* \* \* "

The poor speak like that. Unknowingly though it may be, they have kept a true sense of the weight and value of words.

A Scottish farmer who had grown to be very old put the wisdom of a lifetime into

one sentence. He had been listening to the story of a strong young heart beside him; and "Ma dearie," he said very quietly, "there's no contending."

But this use of the fine old simple words of our language can be funny as well as grand. This was in the cottage of an old woman who lay very ill, and whose daughter-in-law came on a visit to nurse her.

"Well, I'm here till next Tuesday, m'm, but after that I must go. I don't know who'll look after mother, I'm sure, beyond Sarah, and she can't stay mor'n a week. You see, I leave five behind me, and they're all males. My husband, two lodgers, and m' sons. And you see, being all males, it's not as if there was one among them as can do anything, like, for themselves. So that's where it is. And I must get home, or I'd stay, and welcome."

Such unwitting irony, too, was in this woman's view of man, and the more scathing because it was so simply said.

I have touched before in these papers on epitaphs, and the real or forced feeling they convey. But for beauty of moderation this epitaph of a Scottish shepherd on his dog leads all the rest. The collies are trained to fetch the sheep from the hills where they have been wandering often for days. If there are some missing, "There's three wantin'," the man says, or "There's twa wantin'," as the case may be, and the dog, watching the wave of his master's hand from a distance, and harkening to his voice, goes off again and again in search till the flock is found complete.

On a certain farm there was a dog above his kind, sagacious and true. And when he came to die, the shepherd put just these words over his grave, "There's yin wantin'."—London Outlook.

### Olive Culture.

It is only within comparatively recent years that the true value of the olive in California has come to be appreciated. Trees planted a century ago had long suffered neglect. The beauty and profits of olive culture had not yet been demonstrated to the new colonists. Then came a change. Capital awoke to the fact that in this climate could be raised a fruit superior in size and flavor to the Italian importations. Care of the grand old trees—many of them a century old and still bearing—began to take the place of neglect; new olive plantations sprang up; the industry assumed a definite business aspect, until to-day the growth of the olive on the Pacific slope is of enough importance to cause the European producers grave apprehension.

Italy produces annually 70,000,000 gallons of olive oil; the market value of this oil in Italy is not less than \$120,000,000, and that means more money than the value of all the wheat exports of the United States in 1883, and twice the value of the wheat exports in 1888.

In southern California there are lands enough, without interrupting other crops, to equal this output of olive oil, and if the colonists would set about olive planting with the zeal that has attended their orange and raisin planting they could in twenty years produce as much olive oil as Italy. And they will.

The demand for pure olive oil is increasing, and the consumption of the California product will become greater when the American people are educated up to the fact that every bottle of alleged olive oil imported to this country is adulterated from 45 to 95 per cent. France and Italy have no laws regulating the sale of "imitation olive oil," and the people of this country have long been imposed upon by the cottonseed and lard brands of commerce. Some time ago the Department of Agriculture at Washington made a test of sixty-six samples of imported "olive oil" with the following result: Found to be pure, none; one contained no olive oil, and not a single sample contained over 4 per cent of olive oil.

Pure olive oil and ripe olives pickled are most wholesome and palatable articles of food. Those whose chief experience of the olive is the large imported berry, pickled green and fit only to be used as a condiment, know little of the value of the ripe olive as food, nutritious as meat and always delicious. Often the Spanish and Italian peasants make a regular meal of a handful of dried olives and a piece of bread—and an excellent meal it is. For medicinal purposes pure olive oil is now found to be superior to cod-liver oil, being at the same time palatable and free from subsequent nauseating effects. To quote an eminent physician: "It reconstructs the tissues undergoing waste, and by its nutritious or food-like properties sustains without unnatural stimulation, and repairs without disturbance to the vital forces."

Consul Hathaway states that lately an olive tree was carelessly destroyed in the vicinity of Nice which had a positive record of five centuries and measured 36 feet in circumference.

Professor Alot informs us that the pro-

duction of the largest olive trees of Sicily sometimes reaches 264 gallons yearly; the trunk of one of those trees measured 26 feet 4 inches in circumference at 5 feet 9 inches from the ground.

Five hundred olive trees were planted at San Fernando Mission, in California, about the year 1800. There are now left 450. In 1881 the trees were severely pruned, the branches being entirely lopped off and made into firewood. They commenced bearing again the second year after being pruned, and the crop gradually increased so that it now amounts to upward of eighteen tons annually. According to tradition, gigantic olive trees yet seen around Tivoli were already old when Romulus traced with a plow the wall of Rome. Since then mighty rulers, powerful empires have arisen and disappeared. But the old olives, untouched by vandal invaders, respected by the hurricanes of thirty centuries, are there, covering nearly an acre of ground each, vigorous and productive as in the days of Christ.

The average life of the tree, however, is believed to be 250 years—which is long enough. Production increases until the age of forty or fifty years. It remains then about the same from year to year, if properly managed, with a perceptible improvement in the oil.

The olive can be grown only in a small and favored portion of the globe. Middle and southern California and (perhaps) part of Arizona are the only points in the United States, so there will be no danger of overproduction. Regarding the culture of the olive from the mercenary standpoint, there is more to commend it to the investor than either the orange or prune. Trees are now growing in California that at eight years old produced 2,000 gallons of olives to the acre. These will make 250 gallons of oil, which, at say \$3 per gallon, means an income of \$750 per acre. The net income from such a crop would not be less than \$500 per acre, and with good care in any event the crop is large and sure from year to year for a century.

It is a fruit that when made into oil can be kept till the market price is satisfactory. It can be kept ten years if desired, so that the producer is not at the mercy of the commission man. Ten dollars' worth of olive oil can be sent to the market as cheaply as one dollar's worth of oranges.—George Eakins, in the Land of Sunshine.

### A Pugilistic Witness.

"The biggest court-room bully I ever met in my life," said an old New Orleans lawyer to a Times-Democrat reporter, "was an attorney named Simmondson, who was quite a noted character in the early days of the Louisville bar. I practiced in that city for several years after I was admitted and I used to encounter them now and then in the local courts. He was a large, portly man, with a singularly intimidating presence, and when he got a nervous witness in his clutches the way he would put on the screws was something frightful. This habit led one day to a remarkable scene, of which I happened to be a spectator. He was engaged in the trial of a case involving the title to some farm lands, and a number of countrymen were called to testify on the other side. They were naturally ill at ease, being unused to city ways, and when Simmondson came to cross-examine them he found them easy prey. He harassed them in every conceivable manner, and whenever they would show signs of confusion would roar out, 'What are you hesitating for? Are you afraid you may tell a lie?' If the victim replied 'No,' Simmondson would retort, 'I was sure you didn't fear a little thing like that,' and if the answer was 'Yes,' he would say with a sneer: 'Aha, I thought so!' In short, he had them both ways, and the poor fellows, being strangers to repartee, were badly discomfited. The last witness he took in hand was a tall, lank farmer, with a very thoughtful eye. He had watched the baiting of his neighbors in dead silence and took the stand with perfect composure. Simmondson evidently set him down as a lout, and when the witness hesitated over some question a moment later he fired his favorite shot, 'What are y' studying about?' he bellowed, 'Fraid of telling a lie, too, I suppose?' Without any apparent haste the countryman picked up a massive inkstand and hurled it straight at Simmondson's head, catching him on the bridge of the nose and knocking him perfectly senseless. 'That's what I was a-studyin' about,' he drawled in the moment of dead silence that followed the act. Needless to say, a tremendous hubbub ensued, but everybody was secretly pleased, and, while the judge fined the farmer heavily for contempt, he subsequently remitted the sentence. Simmondson was carried home and was laid up for several weeks. When he emerged he was as gentle as a dove, and it was said that he never bullied another witness. He subsequently drifted out to California, where he died during the war."

studies may not be disturbed by the distractions of a life to which they are only in a measure admitted during their vacation. The heir apparent, of slender and supple build, and taller than his father, manly and good-hearted, was 17 last month. Although seriously inclined, he has a strong liking for the theater and dancing, and plays the violin with much skill. Eitel Fritz, the second son, strikingly resembles his father, and is said to be more gifted than the Crown Prince. His feeble health is ascribed to dyspepsia, caused by bolting his food, a failing shared by William I, his great-grandfather, in his youth. Prince Adalbert, who will be 15 in July, is lively, active, quick-witted, and destined for the navy.

In the Prince's private studies four other boys take part, sons of courtiers. When the Kaiser is in public with his sons they are expected to treat him with the respect due to his position, but in the home circle he unbends and enters heart and soul into a romp with his boys, while the Empress always remains to them the mother, around whom they cluster with devoted affection. Like all mothers, the Kaiserin frets much while her sons are away at school, but she visits them at frequent intervals in Ploer, whither her only daughter and inseparable companion, Princess Victoria Louise, invariably follows her.—Baltimore Sun.

### Money for Literature.

Many of our readers who have practical experience on the subjects called for in the list here given (appearing in the May issue of the Cosmopolitan) may care to submit articles, as the prizes offered are considerable. They are all connected with home life. Nothing needs such thorough discussion as the organization of the various branches of every-day life, and the Cosmopolitan, aiming to secure the best thought upon subjects involved, offers \$2,300 in various sums for articles of from 4,000 to 5,000 words each.

\$150 on "How to Furnish Social Life for Children."

\$150 on "How to Educate Children at Home Between the Ages of 3 and 12."

\$150 on "The Home Care of the Sick."

The contest on the above three articles closes June 20, 1899.

\$150 for the best article on "Dress."

\$150 on "The Servant Problem."

\$150 on "A New Philosophy of Fashion."

The contest on the above three articles closes July 20, 1899.

\$200 on "What a Community Loses by the Competitive System."

\$200 on "The Human Eye, and How It Can Be Cared For."

\$200 on "The Care of the Teeth."

The contest on the above three articles closes August 20.

\$200 for the most interesting collection of photographs of American homes. Closes June 1.

\$150 for the most interesting collection of photographs of artistic or novel architectural features. Closes July 1.

\$150 for the most interesting collection of photographs of artistically arranged flower-gardens, lawns, and yards. Closes August 1.

\$150 for the most interesting collection of photographs of plant life—flowers, vegetables, cereals, etc. Closes August 1.

\$150 for the most interesting collection of photographs of home features, such as breakfast and dinner tables, artistically arranged windows, interiors, etc. Closes September 1.

"Then he made an unprovoked assault on you?" "Lord, no! He was more than provoked. He was mad as a hornet."—Indianapolis Journal.

**HAIR SWITCH 65 CENTS.**

WE SELL HUMAN HAIR SWITCHES to match any hair at from 65c to \$3.25, the equal of switches that retail at \$5.00 to \$8.00.

**OUR OFFER:** Cut this ad out and send to us, inclose a good sized sample of the exact shade wanted, and cut it out as near the roots as possible, inclose our special price quoted and 5 cents extra to pay postage, and we will make the switch to match your hair exact, and send to you by mail, postpaid, and if you are not perfectly satisfied, return it and we will immediately refund your money.

Our Special Offer Price as follows: 2-oz. switch 20-in. long, long stem, 65c; short stem, 90c; 2-oz. 22-in. long, short stem, \$1.25; 3-oz. 22-in. long, short stem, \$1.50; 3-oz. 24-in. long, short stem, \$2.25; 3 1/2-oz. 26-in. long, short stem, \$3.25. WE GUARANTEE OUR WORK the highest grade on the market. Order at once and get these special prices. Your money returned if you are not pleased. Write for Free Catalogue of Hair Goods. Address,

**ROBERTS' SPECIALTY CO.,**  
114 Dearborn St., Chicago.

**BICYCLE FREE OR CASH TO ANY ONE** who distributes my soap, etc. I trust you. F. Parker, 877 N. Madison St., Chicago, Ill.



## OUR FOREIGN TRADE IN AGRICULTURAL PRODUCTS--1894-1898.

The Division of Foreign Markets of the U. S. Department of Agriculture has issued an important bulletin which deals with the foreign trade in agricultural products. Since agriculture furnishes from two-thirds to three-fourths of all American exports and provides all of our much-valued balance of trade, the following excerpts will be read with interest:

## TRADE OF 1898.

The fiscal year 1898 was a remarkable one in the history of our foreign trade. While our exports were decidedly the largest ever recorded, our imports were exceptionally small. For every dollar's worth of foreign merchandise brought into this country nearly two dollars' worth of our own commodities found a market in other lands. The value of our domestic exports reached the enormous sum of \$1,210,291,913, exceeding the record-breaking figures of the preceding year by \$178,284,310.

Our 1898 imports, on the other hand, with a value of only \$616,049,654, exhibited a decline of \$148,680,758 from the figures of the year before, and were the smallest since 1885.

As compared with our imports, our domestic exports showed an excess of \$594,242,259, or more than twice the excess for 1897, which was the largest previously reported.

## AGRICULTURAL EXPORTS.

Of the merchandise of domestic origin that was shipped from this country to foreign markets during the fiscal year 1898, 70.93 per cent, measured in value, consisted of the various products of American agriculture. Without exception these were the largest agricultural exports ever sent from the United States, their total value reaching as high as \$858,507,942. The next highest value on record, that for 1897, was exceeded in 1898 by more than \$50,000,000. The increase over the figures reported for 1897 amounted to \$168,752,749, making a gain of nearly 25 per cent.

One of the interesting facts as regards our agricultural exports for 1898 is that they show a greater gain proportionately than our non-agricultural exports. In 1898, as has already been pointed out, products of agriculture formed 70.93 per cent of our total shipments of domestic merchandise, whereas in 1897 they formed only 66.84 per cent. Our export trade in farm produce more than kept pace during 1898 with the remarkable growth that occurred in the exportation of American manufactures.

## AGRICULTURAL IMPORTS.

The falling off in our agricultural imports during the fiscal year 1898 was almost as marked as the increase in our agricultural exports. Our purchases of foreign agricultural products in 1898 amounted to only \$314,291,796, as compared with \$400,871,468 in 1897, a decrease of \$86,579,672, or about 22 per cent. The value of the American farm produce sent abroad during 1898 was much more than double that of our agricultural imports, the excess of the former over the latter amounting to \$544,216,146. In 1897 the excess on the side of the agricultural exports was only \$288,883,725, and in the years immediately preceding still smaller.

## SUMMARY STATEMENT OF IMPORTS AND EXPORTS.

How much of the merchandise imported and exported by the United States during each fiscal year from 1894 to 1898, inclusive, consisted of agricultural matter, and also the extent to which in each of these years the agricultural exports exceeded the agricultural imports, will be seen from the official statistics presented in the following summary statement:

Value of imports and domestic exports of the United States, total and agricultural, and excess of agricultural exports over agricultural imports during each fiscal year from 1894 to 1898, inclusive.

Years ended June 30--	Imports.			Domestic exports.			Excess of agricultural exports over agricultural imports.
	Total.	Agricultural.	Per cent agricultural.	Total.	Agricultural.	Per cent agricultural.	
1894.....	\$654,994,622	\$364,433,627	55.64	\$869,204,937	\$636,633,747	73.24	\$272,200,120
1895.....	731,969,965	373,115,985	50.97	793,392,599	558,385,861	70.38	185,289,876
1896.....	779,724,674	391,029,407	50.15	863,200,487	574,398,264	66.54	183,368,857
1897.....	704,730,412	400,871,468	56.92	1,032,007,003	689,755,193	66.84	288,883,725
1898.....	616,049,654	314,291,796	51.02	1,210,291,913	858,507,942	70.93	544,216,146
Annual average, 1894-1898.....	\$709,493,863	\$368,748,457	51.97	\$953,619,508	\$663,536,201	69.58	\$294,787,744

## EXPORTS SHOWING AN INCREASE.

A large part of the growth that occurred in our agricultural exports during 1898 was due to the increased shipments of American grain occasioned by foreign deficiencies. The total value of the breadstuffs sent abroad advanced from \$197,857,219 in 1897 to \$333,897,119 in 1898, an increase of \$136,039,900. In wheat and

wheat flour alone there was a gain of nearly \$100,000,000.

Although these enormous gains in value resulted in part from the higher prices that prevailed during 1898, there was at the same time an important increase in the quantities shipped.

## WHEAT.

During the fiscal year 1898 we shipped to foreign markets 148,231,261 bushels of wheat, or nearly double the quantity exported in 1897, which was recorded at 79,562,020 bushels. With an average annual export price of 98.3 cents per bushel, the shipments of 1898 reached a total value of \$145,684,059, a gain of \$85,704,481 over the year preceding, when the average price was only 75.3 cents per bushel and the total value \$59,920,178. The shipments of 1898, as regards both quantity and value, exceeded all previous records except that for 1892, in which year our wheat exports attained the enormous total of 157,280,351 bushels, with a value of \$161,399,132.

## WHEAT FLOUR.

Although our exports of wheat flour did not increase very much in quantity during 1898, the gain in value as a result of the higher prices was quite an important one, amounting to \$13,349,371. During 1898 the export price averaged as high as \$4.51 per barrel, making the total value of the shipments \$69,263,718, as compared with \$55,914,347 for 1897, when the average price per barrel was only \$3.84. In the quantity shipped there was an increase from 14,569,545 barrels to 15,349,943 barrels during the two years mentioned, a gain of 780,398 barrels.

The wheat flour exported in 1897 was equivalent to 65,502,952 bushels of wheat, and that in 1898 to 69,074,744 bushels. Stated in grain, the combined shipments of wheat and wheat flour would therefore amount to 145,124,972 bushels for the former year and to 217,306,005 bushels for the latter. The total value of the exported wheat and wheat flour reached as high as \$214,948,377 in 1898, while in 1897 it was only \$115,834,525.

## INDIAN CORN.

Next to wheat, the agricultural export showing the largest increase during 1898 was Indian corn. Our shipments of this leading American cereal have grown with remarkable rapidity in the last few years. During 1897 our exports reached as high as 176,916,365 bushels, exceeding all prior records, but in 1898 they made a further gain of 31,828,574 bushels, the shipments for the latter year aggregating 208,744,939 bushels. The advance over 1897 in the export price of corn, while not so marked as in the case of wheat, was nevertheless an important one. The annual average for 1898 was 35.5 cents per bushel, as compared with 30.6 cents per bushel for the year preceding. In the total value of the exports there was a gain of \$20,109,698, the record for 1897 being \$54,087,152, and that for 1898 \$74,196,850.

## CORN-MEAL.

Accompanying the growing shipments of corn in the grain there has been a noticeable increase in the exportation of corn-meal. The amount of this article sent to foreign markets in 1898 was 827,651 barrels, a gain of 352,388 barrels over the exports of 1897, which were recorded at 475,263 barrels. In the export price per barrel there was an increase from \$1.90 in 1897 to \$2.13 in 1898, and in the total value of the exports, from \$902,061 for the former year to \$1,766,068 for the latter.

Our shipments of corn-meal were equivalent in 1897 to 1,901,052 bushels of corn and in 1898 to 3,310,604 bushels. They formed a very small part, therefore, of our total exports of this grain. The combined shipments of corn and corn-meal amounted

to a large extent in 1898. The quantity consigned to foreign markets in that year was 15,541,575 bushels as against only 8,560,271 bushels in 1897. As regards the value of the shipments, there was an increase from \$3,067,505 to \$8,825,769. The gain in quantity for 1898 amounted to 6,981,304 bushels, and that in value to \$5,158,264. In the average yearly export price per bushel there was an advance from 42.8 cents to 56.8 cents.

## RYE.

Our exports of rye were also increased to a large extent in 1898. The quantity consigned to foreign markets in that year was 15,541,575 bushels as against only 8,560,271 bushels in 1897. As regards the value of the shipments, there was an increase from \$3,067,505 to \$8,825,769. The gain in quantity for 1898 amounted to 6,981,304 bushels, and that in value to \$5,158,264. In the average yearly export price per bushel there was an advance from 42.8 cents to 56.8 cents.

## BACON.

After the leading breadstuffs, the most important gains made during 1898 occurred among the exports of meat products. Bacon was a conspicuous example, the shipments of this product increasing from 500,399,448 pounds, valued at \$34,187,147, in 1897 to 650,108,933 pounds, valued at \$46,380,918, in 1898. The gain in quantity amounted to 149,709,485 pounds, and that in value to \$12,193,771. The export price of bacon averaged 7.1 cents for 1898 as against 6.8 cents for the year preceding.

## LARD.

In the exportation of lard 1898 witnessed an increase nearly as marked as in that of bacon. The amount of American lard sent abroad was larger by 141,028,405 pounds than in 1897, and its total value \$10,584,187 greater. The export record for 1897 was 568,315,640 pounds, worth \$29,126,485, and that for 1898, 709,344,045 pounds, worth \$39,710,672. In the average yearly export price per pound there was an advance from 5.1 cents to 5.6 cents.

## HAMS.

American hams were marketed abroad in greatly increased quantities during 1898. The shipments for the year mentioned amounted to 200,185,861 pounds, worth \$18,987,525, as compared with 165,247,302 pounds, worth \$15,970,021, for the preceding year. These figures show a gain of 34,938,559 pounds in quantity and one of \$3,017,504 in value. The average annual export price did not average as high in 1898 as in the year before, declining from 9.7 cents to 9.5 cents per pound.

## PICKLED PORK.

Another meat product that exhibited a considerable increase for 1898 was pickled pork. Of this product we exported 88,133,078 pounds in 1898 as against only 66,768,920 pounds in 1897. During the two years named the average export price per pound increased from 4.9 cents to 5.6 cents, and the total value of the shipments from \$3,297,214 to \$4,906,961. The gain in value recorded for 1898 was \$1,609,747 and that in quantity 21,364,158 pounds.

## COTTONSEED-OIL.

Of cottonseed-oil we shipped to foreign countries during 1898 40,230,784 gallons, or 13,031,902 gallons more than in 1897, when there was an export record of 27,198,882 gallons. Meanwhile the total value of the shipments rose from \$6,897,361 to \$10,137,619, a gain of \$3,240,258. In the export price, however, there was a slight decline, the annual average for 1898 amounting to only 25.2 cents per gallon, while that for 1897 was 25.4 cents per gallon.

## OIL-CAKE AND OIL-CAKE MEAL.

Our exports of oil-cake and oil-cake meal during 1898 reached as high as 1,358,136,702 pounds, or 301,643,616 pounds in excess of the 1897 record, which 1,056,493,086 pounds. In total value there was an increase of \$2,990,776. The shipments reported for 1897 were worth \$9,611,044, and those for 1898 \$12,601,820. The export price showed little change during the two years.

## CATTLE.

The number of cattle sent abroad in 1898 was 439,255, having a total value of \$37,827,500. As the shipments in 1897 amounted to only 392,190 head, worth \$36,357,451, there was a gain of 47,065 in number and \$1,470,049 in value. The average annual export price declined from \$92.70 to \$86.12 per head.

## HORSES.

In the number of horses exported there was an increase during 1898 of 11,618, the record for that year being 51,150, as compared with 39,532 for 1897. The total value of the horses shipped advanced from \$4,769,265 in the earlier year to \$6,176,569 in the latter, showing a gain of \$1,407,304. The export price per head averaged \$120.64 during 1897 and \$120.75 during 1898.

## OTHER ARTICLES.

Other agricultural exports that during 1898 exhibited a gain in value of more than \$1,000,000 were hops, fruits, and oleo-oil.

Of hops, 17,161,669 pounds, worth \$2,642,770, were exported in 1898, as against only 11,426,241 pounds, worth \$1,304,183, the year before. The increase over 1897 amounted to 5,735,428 pounds in quantity and \$1,338,586 in value.

The American fruits marketed abroad during 1898 were valued as high as \$8,851,

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## GRAVES OF OUR YOUNG MEN.

Eighteen months ago the patriot who viewed a soldier's grave thanked God that war was a thing of the dim and vanishing past in the annals of America. The sentiment towards the old veterans whose whitening heads were so rapidly dropping under the sod, was one of inexpressible tenderness and veneration. The feeling of the old soldier for his disappearing comrades was one of sympathy and affection above the common level. The pride of the scarred veteran was that his wounds had assured lasting peace for the children and grandchildren whose manhood and womanhood were the comfort of his declining years.

But when the cry of the oppressed in Cuba was heard the old soldier's blood boiled in his veins, and he rejoiced that he was the progenitor of boys as brave as ever wore the blue. He retold his experiences in the camp, on the march, and in the shock of battle. He glorified the comrades who had fallen at his side. An army raised up as if by magic to strike down the shackles which bound a struggling people.

Bravely they fought and well—these sons of freedom. In less than a year from the sounding of the tocsin of war the oppressor had fled from Cuba and from Porto Rico, and was getting out of the Philippines as rapidly as modern facilities for travel could convey him. The Spanish navy was at the bottom of the sea or was being made over into good American ships.

A few more graves were added. A few more heroes' names were written. A deeper and more universal patriotism was brought into existence. To be an American was a prouder inheritance than to be a king; it was to be an unselfish and a powerful liberator of the oppressed, a defender of freedom, a promoter of human rights.

But with out new honors came new responsibilities. With whatever wisdom these burdens have been assumed they are bringing to the nation more new graves, more desolated homes, more broken hearts, more heroic achievements, than the war for the liberation of the Cubans.

Last Tuesday a grateful nation decorated the graves of the old soldiers; it decorated the graves and recalled the bravery of the soldiers who died for the liberation of the oppressed of the Spanish yoke; and it shed its tears while it pointed to the heroism of those now falling in the unexpected conflict in the far-away Philippines.

Two years ago we little expected that today we would decorate the new-made grave of the boy soldier. One year ago we thought not to be called to mourn the lingering deaths of our brave youths in the eastern tropics. What will be the extent of our lamentation one year hence only the good God knows. But of this we may be sure, that, on whatever mission sent, the American citizen soldier will surprise the world with his bravery, with his endurance, with his resource, with his skill and success in action, with his unconquerable spirit, with his humanity and with his successes. But for all the glory he may achieve, for all the renown he may win, his hope, the hope of his friends at home, and the hope of his country is that he may soon be permitted to lay down his arms and return to the walks of peace, that the graves yet to be made may be few, and that the time may soon come when the nations shall learn war no more.

\*The statistics of importation and exportation given in the present bulletin are based upon the official returns of trade published by the Bureau of Statistics, United States Treasury Department.

to 178,817,417 bushels of grain in 1897 and to 212,055,543 bushels in 1898.

## OATS.

In our exportation of oats there was a gain during 1898 of 34,033,552 bushels, the shipments for that year reaching as high as 60,130,288 bushels, or nearly double the quantity marketed abroad the year before, when only 35,096,736 bushels were shipped. During the two years under consideration the total value of the exports increased from \$8,756,207 to \$20,632,914, making a gain of \$11,876,707. This important gain



\$78. This sum was \$1,238,378 in excess of the value for 1897, recorded at \$7,613,500. Our exports of oleo-oil increased from 113,506,152 pounds, valued at \$6,742,061, for 1897, to 132,579,277 pounds, valued at \$7,904,413, for 1898. In quantity there was a gain of 19,073,125 pounds, and in value one of \$1,162,352.

In several cases among our agricultural exports of 1898 there were gains in quantity accompanied by a falling off in value. A notable example of this was furnished by cotton, the most important item in our agricultural export trade. Our shipments of cotton increased from 3,103,754,949 pounds in 1897 to 3,850,264,295 pounds in 1898, a gain of 746,509,346 pounds, but the total value of these shipments, owing to a drop of 1.4 cents in the average export price, declined from \$230,890,971 in the former year to \$230,442,215 in the latter, a loss of \$448,756. During 1898 the export price averaged only 6.0 cents per pound, as compared with 7.4 cents per pound during 1897.

Cheese was another export that showed for 1898 an increased quantity and a diminished value. Our shipments of this article during the year mentioned were recorded at 53,167,280 pounds, worth \$4,559,324, as against 50,944,617 pounds worth \$4,636,063, for 1897. In quantity there was a gain of 2,222,663 pounds, and in value a loss of \$76,739. The average export price per pound fell from 9.1 cents during 1897 to 8.6 cents during 1898.

There were several instances, on the other hand, where an increase in the total value occurred in conjunction with a falling off as regards the quantity shipped. Our exports of fresh beef were a case in point, the shipments of this product declining from 290,395,930 pounds in 1897 to 274,768,074 pounds in 1898, while their total value rose during the same years from \$22,653,742 to \$22,966,556. These figures exhibit a loss of 15,627,856 pounds in quantity, but a gain of \$312,814 in value. A comparison of the average export prices for the two years shows an advance from 7.8 cents per pound in 1897 to 8.4 cents per pound in 1898.

#### AGRICULTURAL COLLEGE COMMENCEMENT.

The annual commencement exercises of the Kansas State Agricultural College present, this year, an attractive program, as follows:

Saturday, June 3.—Recital before the literary societies, in college chapel, by Prof. and Mrs. F. A. Metcalf, assisted by the Wagner Symphony Club, at 8 p. m.

Sunday, June 4.—Baccalaureate sermon, in college chapel, by President Will, at 4 p. m.

Tuesday, June 6.—Examinations from 9 a. m. to 3:35 p. m. Class-day exercises for invited guests of class of '99, at 8 p. m.

Wednesday, June 7.—Examinations from 9 a. m. to 3:35 p. m. Public address before the Alumni Association, in college chapel, by John W. Shartel, class of '84, at 8 p. m.

Thursday, June 8.—Commencement day. Annual address by Rev. Benjamin Fay Mills, of Boston, Mass., at 10 a. m. Presentation of diplomas. Cadet Band concert on east campus at 2 p. m. Military drill at 2:45 p. m. Business meeting of the Alumni Association, in college chapel, at 4:30 p. m. Triennial reunion of alumni and invited guests at 7:30 p. m.

#### A GOVERNMENT FORESTRY STATION.

Prof. J. W. Tourney, of the Division of Forestry, United States Department of Agriculture, spent several days of last week at the Agricultural College studying the forestry plantation at that place. Within the last four years the Division of Forestry has added about 75,000 trees, mostly conifers, to this plantation. Several other plantations have been maintained in the West, but none of them have been so successful as the Kansas plantation. Professor Tourney is consequently well satisfied with the work in this State. He says that the plan of the Government for the future is to add no more to the plantations already established but to largely increase the publication of useful information on matters pertaining to forestry and tree-planting. It is also planned to make the agricultural college a distributing point for seeds and seedlings of the hardy kinds of trees. The aim of the division will be to encourage more extensive planting among the farmers rather than to make large plantations itself. This is a commendable purpose and the effort will without doubt arouse great interest in tree-planting among the people of Kansas, especially in the central and western parts of the State.

Financial writers are now estimating the 1899 wheat crop of the United States at 110 to 120 millions of bushels below that of 1898.

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A very considerable decline is noted in the selling prices of share stocks of American railroads and industrials. Taking thirty-three of the active stocks traded on the New York stock exchange it is found that the average of the highest prices of these stocks since January 1 is \$95.43 per share. The average of the highest prices for these same stocks since May 24 is \$85 per share. The decline is attributed in considerable degree to the uncertainties as to values of trust stocks. As trust stocks

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appear to the eyes of the writer they are good to avoid. That trust managers will deceive investors is unquestionable.

#### SCIENTIFIC FARMING.

A very pleasant and profitable visit was recently made by the writer to the farm of Col. Guilford Dudley, of Topeka. On this farm located about two miles south of our State Capital, scientific farming is made practicable and profitable. One of Colonel Dudley's neighbors has said of him that he never tries an experiment that does not pay. The great business ability of Colonel Dudley enables him to see that the principles of science must be applied to agriculture as well as to banking or manufacturing in order to succeed.

The first point of interest on the farm that I visited was the feed lot, where 100 head of steers are being fed on a balanced ration, consisting of corn-and-cob meal, bran, oil-meal, and clover hay. These steers are going to be ripened for market in about one hundred days, whereas it usually takes twice that long to fatten cattle. Before beginning the feeding experiment, Colonel Dudley carefully figured out a balanced ration that would give the proper amount of protein at the cheapest cost. He then submitted the ration to an expert for criticism, who advised that the addition of a little clover hay would make it ideal. The rapid gains of the steers have confirmed this opinion.

The next place of interest was the corn field planted for the purpose of cross breeding seed corn. In this field two or more varieties of corn are planted for the purpose of securing the crossing of parents possessing definite desirable characteristics. The principal part of the field is planted with the variety that is to furnish the pollen, while a few rows of a second variety to be used for bearing ears alternate here and there through the field. At the proper time, the tassels of the latter variety will all be pulled out and consequently the silks must be pollinated from the tassels of the variety constituting the main body of the field. In another field at least eighty rods away, a series of experiments in reverse order is being conducted. This method for securing the cross-fertilization of corn is the invention of Colonel Dudley, and it is of such practical value that the Experiment Station at the Kansas Agricultural College has adopted it. Colonel Dudley showed me some corn grown from crossed seed and the uniformity of size and shape of the ears and the depth of grains proved it to be a very superior variety.

More interesting than all else on this magnificent farm are the methods of tillage practiced. Colonel Dudley has been a close student of Professor King's book on the soil. He can explain the phenomena of capillarity and evaporation, and can suggest practical methods for retarding the one and breaking up the other. He is a firm believer in the theory that the moisture of the soil may be conserved by keeping the surface finely pulverized. In order to put his theory into practice he has manufactured a harrow, which consists simply of a V-shaped frame filled with sixty-penny wire nails for teeth. The materials of a harrow of this description, large enough to run between two rows of corn, cost \$1.40. In order to keep the so-called dust mulch upon the surface, the principal part of the tillage early in the season is with such a harrow. Evaporation, which is a cooling process, is very much retarded and the soil becomes rapidly warmed in the early spring when the heat is needed. Later in the season the dust mulch is deepened to two or three inches by the use of a cultivator with shovels. This deeper layer of dry soil acts as a non-conductor of heat and thus prevents the soil around the roots of the plants from becoming too hot. It is wonderful how tillage can be used to regulate both the moisture and the heat of the soil. To prepare a field for corn, the nail-toothed harrows are kept running during the windy drying weather early in the spring. The land is then plowed as deep as possible, and the harrows immediately put to work smoothing down the surface. Frequent harrowing is followed from this time until the crop is developed. Colonel Dudley prefers to have his corn-field subsoiled at least once in two years to a depth of fifteen inches.

It is needless to say that Colonel Dudley raises crops that far surpass those of his

neighbors who do not practice his methods of tillage. It will pay any farmer in Kansas to drop his work for a day or two and visit this farm. Here scientific farming is practiced with a profit. The philanthropic owner of this model Kansas farm is doing much to lift up the agriculture of the Sunflower State. GEORGE L. CLOTHIER, Manhattan, Kans.

#### SEVERAL QUESTIONS.

Editor Kansas Farmer:—Find below a few questions which you may print in your inquiry column with their answers, which may be of benefit to the many readers of your valuable paper:

1. Should working horses have all the salt they can eat?
2. What causes milch cows to eat barnyard manure, and is it good for them?
3. Will fruit canned in large stone jars keep as well as if canned in quart glass cans?
4. Should apple-trees remain tied with paper through summer?
5. How is the best way to rid a well of toads and keep them out?
6. Where could I get a good treatise on peanut culture?
7. How can I rid my hogs of lice?
8. What would you consider the best method for ridding a field of cockle-burs?
9. Considering present prices, would it pay the average farmer to raise hogs on a large scale?

WM. S. LANDIS.

Canton, Kans.

1. Yes.
2. Lack of salt. Lack of hay or other suitable roughage. Lack of variety. It is liable to fever the cow's stomach and to give a rank, feverish taste to the milk.
3. If the jars are free from flaws; if they are thoroughly sterilized; if the fruit is thoroughly scalded; if the openings are perfectly sealed the fruit should keep as well as in glass.
4. Orchardists differ, but most of them remove the wrappings in spring.
5. It is easier to tell how to keep toads out of the well than how to get them out after they have got in. To keep them out lay top four or five feet of the wall in cement mortar, and cover the top with a tight floor. If a bucket is used a tight box should protect the opening. To get them out clean the well frequently, being sure to catch all toads.
6. Write to the United States Department of Agriculture, Washington, D. C., for a free copy of Farmers' Bulletin No. 25, on peanut culture.
7. Coal-oil applied on neck, behind the ears, behind the shoulders, and back part of the hams, a few times will destroy them [lice] effectually.—The Hog in America.
8. The writer's father would never allow a cockle-bur to grow on his farm for one minute after it was discovered by himself, one of his sons, or a hired hand. This method kept 240 acres free from cockle-burs and a good many other weeds which troubled other farmers.
9. It depends on how much intelligence he mixes with his farming and with his hog feed.

Prices of wheat continue to advance and prices of trust and other corporation shares show a decided inclination to tumble. There may be no logical relation in this coincidence, but the farmer does not care to reverse the facts.

Occasionally the Kansas Farmer receives an inquiry from some person who forgets the usual courtesy of signing his name. The editor is not touchy about matters of etiquette, but he does not hold himself in readiness to answer any inquirer who is unwilling to give the small token of good faith—his name. In general, the interest of the readers of the paper is heightened if the name is published, and the editor can scarcely conceive of a genuine inquiry to which the writer should object to have his name attached in the paper. Still, we do not insist that the name must be published but only that it accompany every communication to which the attention of the editor is asked.

Inventors requiring money to develop or perfect inventions, patents or ideas of value should communicate with R. G. Ruxton, 195 La Salle St., Chicago, Ill.



## Horticulture.

### KANSAS EXPERIENCE IN ORCHARD-ING.

From "The Kansas Apple."

G. E. Spohr, Manhattan, Riley County: Have resided in Kansas twenty-six years. Have an orchard of 3,000 trees, nineteen years planted. Originator of the Spohr apple. Plant for commerce Winesap, Missouri Pippin, and Ben Davis; for family orchard, Winesap, Missouri Pippin, Maiden's Blush, and Early Harvest. Have tried fifty varieties, but think none of them paid better than those named. I live on bottom land, eight feet to water. Any slope is good. Prefer sandy loam. Plant two-year-old, well-pruned trees, in large holes. Cultivate thoroughly, planting to corn until seven years old; then seed to alfalfa. I favor wind-breaks of Scotch or Austrian pines, planted in three rows ten feet apart. I believe in pruning, and always have my knife open when in the orchard, and trim at all times; like to have trees, not brush piles. The Deity governing Kansas winds thins the fruit sufficiently. Apple trees are more fruitful if varieties are mixed in planting. Use all the two and three-year-old stable litter I can get. Do not pasture my orchard. Spray with London purple one week before and two weeks after blooming, for cankerworm, leaf roller, and codling moth, and have reduced the latter by it. I hunt the borers and go after them with a hot (?) iron. Pick by hand, and sort to suit customers. Pack in eleven-peck barrels, and mark with stencil. Sell my best apples to shippers, and make vinegar and hog and cattle feed of culls. My best market is in Colorado, but I sell in orchard. I store successfully for winter in a cave in bulk, and find Winesap and Missouri Pippin the best keepers, losing about 10 per cent. Prices average 50 cents per bushel. Pay help from \$12.50 per month to 75 cents per day and board.

R. D. Osborne, Soldier, Jackson County: Have lived in the State thirty-one years; have 500 apple trees, from three to sixteen years planted. For commercial purposes I prefer Ben Davis, York Imperial, Gano, and Winesap; for family orchard, Winesap, Missouri Pippin, and, for summer, Early Harvest, Maiden's Blush, and Cooper's Early White. Have tried and discarded Vandevere, as it does not bear, and Willow Twig on account of blight; Rawle's Janet no good on market. I prefer hilltop if well cultivated; otherwise bottom, with a loam soil and a sandy subsoil, and a southeast slope to protect from southwest winds. I plant two-year-old trees, three feet to head, not less than three limbs to form head, thirty feet each way. I cultivate with plow, harrow and spade the square immediately surrounding the tree. I plant corn in the young orchard and seed the bearing orchard to clover; cease cropping at five or six years. I think wind-breaks essential on southwest, and would plant Osage orange or Russian mulberry. I wrap with grass or tarred paper to protect from rabbits. I prune in May to spread the top and thin the fruit. I seldom thin the fruit, but it will pay to thin the last of May. I fertilize with stable litter, but would advise it only on hill orchards. I pasture the orchard with hogs and horses, and think it advisable, and that it pays. My apples are troubled with codling moth. I spray during May, after the blossom has fallen, with kerosene emulsion, sulphate of copper, and London purple, for codling moth, blight, and insects generally. I think I have reduced the codling moth. I treat borers with crude carbolic acid diluted with water. I dig around tree down to the roots, dam outside, fill around tree with water and acid strong enough to tingle your tongue. I hand-pick from ladders by the ordinary method. Never sell in orchard; make cider of second and third-grade apples; feed culls to stock. My best markets are Holton and Topeka; never have tried distant markets. Never dry any. Store but few apples in an orchard cave, 9 feet deep, 8 feet wide by 24 feet long. The apples are put on shelves about ten inches deep.

H. L. Jones, Salina, Saline County: Have lived in Kansas forty-four years; have an apple orchard of 6,000 trees, planted from five to twenty-five years. For market I prefer Missouri Pippin, Winesap, Jonathan, Lowell, Cooper's Early White, Grimes' Golden Pippin, and Wealthy. For family orchard would plant Early Harvest, Maiden's Blush, Jonathan, Winesap, Missouri Pippin. Have tried and discarded Alexander as a shy bearer which rots on the tree. Prefer bottom land here, sandy soil, free from clay or hardpan. Preferable with northeast slope. Plant well-branched two-year-old trees; turn deep cross-furrows the distance the trees are wanted apart; cultivate in corn until the trees are five or six years old; after that use the plow and disk harrow and plant nothing. I emphatically believe that wind-breaks are essen-

tial. They may be made of anything hardy and suitable, as Osage orange, box-elder, walnut, etc. To protect from rabbits, wrap with grass or corn-stalks. I only prune with shears and saw, to clear the limbs off the ground a little. I believe stable litter is good for an orchard. I pasture very little, and do not think it good for an orchard. I spray as soon as the leaves start, with Paris green or London purple, mostly for cankerworm, and doubt its effect upon codling moth. Thrifty trees are not usually bothered with borers, and unthrifty trees should be made into firewood. Our pickers use sacks with strap over the shoulder. We sort into four classes: First, large, sound fruit; second, small, sound fruit; third, slightly damaged fruit; fourth, culls. Very little packing is done here; apples are usually sold to shippers in bulk. I sell my culls to hundreds of farmers in this and adjoining counties for canning, apple-butter, etc. My best market is here in Salina. I have tried distant markets, but it did not pay very well. Have never dried any; stored but few for winter in baskets and barrels. I find the Missouri Pippin, Winesap, Rawle's Janet, and Romanite are the best keepers. Our loss in keeping varies with the season and the condition of the apples at picking time. Have never irrigated any. Prices during the past six years have varied from 25 to 50 cents per bushel. I use men and boys to help pick and at spraying time in the spring, usually paying \$1 per day.

N. Christensen, Mariadahl, Pottawatomie County: I have lived in Kansas forty years. Have an apple orchard of four acres, from five to twenty-five years planted. For all purposes I prefer Ben Davis, Missouri Pippin, and Winesap. I prefer second-bottom land with a black loam, a clay subsoil, and a northeast slope. I prefer good two-year-old trees planted thirty feet apart, alternated with peaches. I have cultivated my orchard to corn, but do not think it advisable. I used a plow, cultivator, and disk for eight years. I have cultivated the young orchard both ways twelve times, and shall keep on with the disk and harrow. I cease cropping after six or eight years, and then grow alfalfa. Wind-breaks are not essential. I use wire-cloth as a protection against rabbits; I would not risk an apple or pear tree without it. I prune with a knife, saw, and shears when the trees are young; I think it beneficial, as it makes the trees healthier. I fertilize my orchard with stable litter; I spread it all over the ground and then harrow it in. I pasture my orchard with calves after it is six or eight years old and has been seeded to grass; I think it pays in an old orchard. My trees are troubled with tent caterpillars and borers. I have not sprayed yet, but think I shall this spring with Bordeaux mixture. I pick my apples by hand; sort into two classes. I feed my second and third grades and culls to the calves and hogs; have made cider of them, but could not find market for it. I have tried shipping apples to distant markets, but it did not pay. I dry some apples for home use, using stove and sun; neither way is satisfactory. I store my best apples in bulk in a cellar under the house; am not very successful. I find Ben Davis and Winesap keep the best. Prices have been from 25 to 50 cents per bushel. I do not hire any help; the family does the work.

H. R. Roberts, Perry, Jefferson County: I have lived in Kansas since 1859; have an apple orchard from four to twenty-eight years old. For a commercial orchard I prefer Jonathan, Ben Davis, Winesap, Missouri Pippin, and Maiden's Blush; and for a family orchard, Red June, Maiden's Blush, Jonathan, Winesap, and Rawle's Janet. I prefer mid-land altitude or bottom, with a rich loam and a clay subsoil, and a northeast slope. I prefer two-year-old trees with upright heads, set thirty by forty feet in squares. I cultivate my trees with a plow and cultivator until they occupy most of the ground. I plant corn and potatoes in a young orchard, and cease cropping when the size of the trees renders it impossible. I seed the bearing orchard to red clover. Wind-breaks are not essential; a hedge fence is all that is necessary, and this ought not to be nearer than forty feet of the trees. For rabbits I wrap the trees; and dig the borers out with a knife. I prune sparingly with a knife or sharp ax to remove all dead or injured limbs; I think it pays. I thin the fruit when the trees are overloaded, by taking off one-half after they are the size of marbles. My trees are planted in blocks for convenience in picking. I fertilize my orchard with all the barnyard litter I can get, scattered broadcast; would advise its use on all soils unless already very rich. I am sorry to confess I have pastured my orchard with hogs; it is not advisable. My trees are troubled with cankerworm, tent caterpillar, root aphid, roundheaded borers, and buffalo tree hopper; and my apples with codling moth, curculio, and gouger. I have sprayed just as the buds open for cankerworm; have also sprayed

ized—the value of the two sections would be over a million dollars, all of which is clear profit. This is no guesswork. There it is to talk for itself. Now if a million dollars can be cleared on 1,200 acres, let a farmer plant out forty acres of his farm and in a few years be worth \$20,000 or \$24,000. If he don't live to enjoy it posterity will. The Farlington plantation has about 100 acres planted with white ash, black walnut, Osage orange, alanthus, and wild cherry; but the catalpa has made the largest and most satisfactory growth, and its timber is more valuable than that of either of the others, as it knows no rotteness when in contact with the ground. For furniture or inside work it has no superior.

D. C. BURSON.  
1417 Broadway, Kansas City, Mo.

### Self-Supporting College Students.

"Most people picture the young man who earns his own expenses while at college as a long-faced prig who rooms in a garret, where he breaks the ice in his pitcher for water to wash with in winter, and tells himself how noble he is to persevere in spite of the sneers and snubs of his more fortunate classmates," writes Jesse Lynch Williams, in "How a Young Man Can Work His Way Through College," in the June Ladies' Home Journal. "If that type of collegian ever really existed he is now extinct. The modern self-supporting student is not snubbed nor sneered at by anybody, and he smiles occasionally. This is because there are more college men earning their living to-day than ever before, and because they earn a better living. One-quarter of the entire 301 members of the last class graduated at Yale supported themselves partly or wholly; probably all of them ate three meals a day, and many of them were quite in the thick of college life besides. This point is emphasized, because I know that every year some boys think of going to college and then give it up, largely—though they may not confess it—because they hate to think of being 'queer' and 'out of things.' This is a natural feeling, but it is unnecessary. I recall no football team at my college (Princeton) in the last ten years that did not have at least one man working his way through, and invariably some of the most popular and influential men in every class are self-supporting."

### Proof Positive.

"What was your father whipping you for last night?" asked one small boy of another.

"Oh," replied the other, "we had an argument about my Sunday-school lesson, and he was proving to me that the whale actually did swallow Jonah."—Troy Times.

## er Feeder

ciency, convenience and economy Nichols-Shepard Self-feeder. It rains evenly and steadily, without regulates itself to the speed of iron stops and starts automatically while the separator is in full place when attached to the able supports keep it always perpendicular designed for the

## SHEPARD RATOR

Large illustrated catalogue that tells all about the Nichols-Shepard Separator and its improved attachments, and the Nichols-Shepard

Engine

mailed free.



Nichols & Shepard Company,  
Battle Creek, Mich.

Branch House at  
KANSAS CITY, MO.  
with full stock of machines and extras.



# In the Dairy.

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

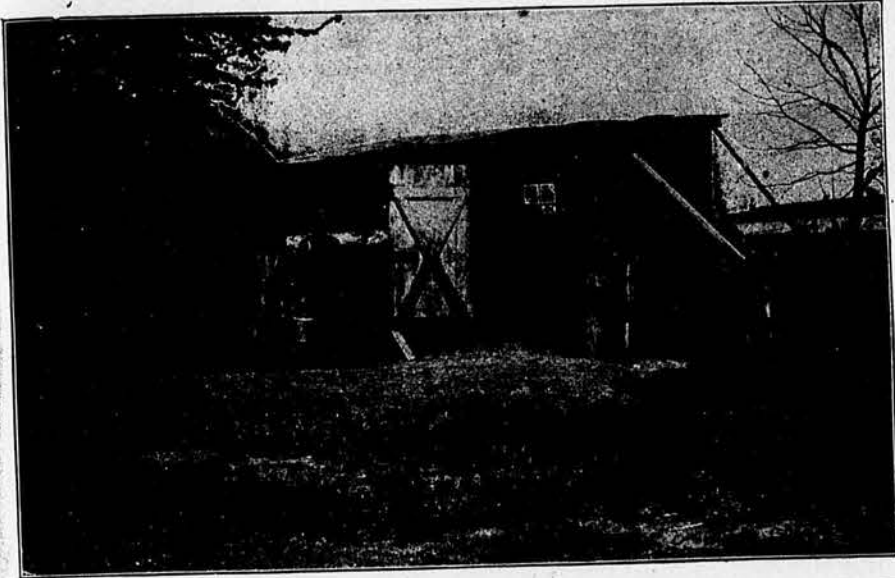
## A Cheap Milk-House.

The pictures in the issue of the dairy page are not presented for their artistic beauty but for the utility of the structure they represent. This little milk room is owned by the State of Kansas. It does not represent her wealth but is a token of the enterprise and ingenuity of her citizens in overcoming obstacles. This modest structure is located at the Kansas Experiment Station and was built over a well in the summer of 1898 for the purpose of carrying on experiments in keeping milk. It will be noticed that the room is

ing in good shape if it is properly handled. The illustrations show how this can be done when nothing better is available. D. H. O.

## How to Save Time.

The time of year is fast approaching when, if proper care is not exercised in keeping all milk utensils perfectly sweet and clean, much milk will be lost by souring and much time wasted in washing cans, pails, etc., in which the milk has soured or dried on the sides. It is frequently the practice at creameries to leave the weighing-can, milk and cream vats, and tanks unwashed for several hours after using, not realizing that the delay causes extra labor. Here at the college dairy a few days ago a number of sample bottles were necessarily left unwashed until the next day. It took just three times longer to wash them than it did on other days when they



EXTERIOR VIEW.

built of old boards that were picked up on the farm, and which failed to close all the cracks. A little tarred paper was tacked on the roof to keep it from leaking. A barrel bottom side up supports another right side up into which water is pumped and conducted to a cooler, and to tubs and boxes in various parts of the room. After the milk is cooled it is placed in cans and set in tubs of cold water and covered with wet gunny sacks. When the weather is very warm the tubs can be packed in wheat or oat chaff. By giving close attention to cleanliness with the milker and the milk utensils it was possible to keep milk sweet from thirty-six to forty-eight hours by cooling with well water.

What has been done by the Kansas

were washed as soon as the milk was thrown out. In washing milk utensils, they should first be rinsed out with cold or tepid water, then wash in water as hot as the hand can stand, and finally scalded thoroughly, and then if possible put out in the sun. If more care is used in cleaning the pails, cans, etc., there will not be so much sour milk sent back from the creamery, the patron will feel happier and so will the creamery man. J. A. CONOVER.

## Some Results in Testing.

The question is sometimes asked by those not familiar with the Babcock test concerning its accuracy. It has been shown time and time again from the standpoint of the chemist that the test is reliable and as



INTERIOR VIEW

station can be done by any farmer in the State. In fact, our facilities are much poorer than found on most farms. Our well water stood at 62° F. while many wells tested 56°. We had to change the water in the tubs by hand every twelve hours. On many farms there is running water or a windmill that can keep fresh, cool water around the cans of milk at all times.

The only article that the farmer might not have would be a cooler. This, however, is an article he ought to have. He needs it for his milk; he needs it for his skim-milk to be fed to calves. The saving that would result from the use of a cooler in a year would pay the cost several times over. There is no reason why Saturday night's and Sunday morning's milk can not be delivered to the creamery Monday morn-

true as any test ever devised aside from strict chemical analysis.

It may be interesting to note the comparative results of tests of the college herd taken recently. A composite sample from each cow of eight consecutive milkings is taken just previous to the first and fifteenth of each month. This test forms part of the herd record.

The cows were put on green feed the 10th of May and individual tests of each milking made for seven days previous, and a number of days after the change in feed. This special test ran over the time of the regular test and the comparison here shown is between the average of the individual tests and the composite tests for the same milkings.

The samples were taken by the milkers with no thought of a comparison being made. In taking the samples the milk

was poured from the milking-pail into another pail and a portion dipped out for the composite sample, using a dipper holding about an ounce. The milk was then poured back into the milk-pail and then again into the sampling-pail, when about a quarter of a pint was poured into a bottle for the individual test.

The comparison of the eight individual tests and the composite test is shown in the following table:

No. of Cow	1	3	4	5	6	7	8	9	10	11	12	14	22	23	24	25	26	27	28	29	33
Average eight tests	4.4	3.5	3.6	3.7	3.6	4.2	4.5	5.3	3.8	4.7	5.1	4.5	4.1	4.2	3.3	4.1	4.3	4.0	4.7	4.7	3.9
Comp. test of same milkings	4.4	3.6	3.7	3.7	3.5	4.2	4.5	5.4	3.8	4.6	5.2	4.6	4.0	4.2	3.4	4.1	4.4	4.0	4.7	4.5	3.9

The table shows no greater variation than is often found in two tests of the same milk taken at the same time and shows also that the chance of error is reduced to a minimum.

ED. H. WEBSTER.

## Skim-Milk Calves.

Press Bulletin Kansas Experiment Station. Allow the calf with the fresh cow four or five days. This gives the calf a vigorous start and aids in reducing any inflammation in the udder of the cow. Wean by feeding 10 pounds (1 quart equals about 2 pounds) whole-milk daily in three feeds, and gradually increase the amount to 12 or 14 pounds, always weighing or measuring each feed. More calves are lost by over-feeding than for any other reason. When 2 weeks old the calf may be changed to skim-milk but not faster than a pound a day, i. e., the first day give 11 pounds of whole-milk and 1 pound of skim-milk, the second day 10 pounds whole-milk, 2 pounds skim-milk, and so on until the change is complete. The amount of skim-milk may be increased gradually, but not to exceed 18 to 20 pounds daily per head. Flaxseed gruel may be added to replace the butter fat. This is made by mixing ground flaxseed in cold water, adding boiling water, and allowing to steam a few hours with cover on the pail. A teaspoonful of this gruel is enough at first, but this may be increased gradually to one-half pound of the meal daily per head. Flaxseed is better than linseed-meal since the oil is needed to replace the butter fat. Blachford's meal is an excellent calf feed and may be used

the same as flaxseed. The college recently started an experiment with calves, feeding part on fresh skim-milk from the hand separator and part on sterilized creamery skim-milk, and at the same time is testing the value of flaxseed-meal and Blachford's meal for calves against skim-milk alone. All the calves are allowed what Kaffir-meal, hay, and green alfalfa they will eat. The results are being watched with great interest.

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excel all others for close skimming and ease of running.

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I have used the No. 5 U. S. Separator five years, have paid out hardly anything for repairs and it skims as clean as ever.  
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Leaves the Least Fat of Any Make.

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GEO. BURT & SONS.

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temperature of water. Sweet milk at one meal and sour at the next causes scours and seriously checks the growth of the calf. Sterilizing skim-milk has an additional advantage in that the heating helps to prevent scours.

Calves will begin to eat meal when 10 days to 2 weeks old. Put a little in their mouths after feeding the milk and they will soon eat from the feed boxes with a relish. Never mix the grain with the milk. We find Kaffir meal an excellent grain for calves. It is constipating and checks the tendency to scours. Our calves that average 8 weeks of age consume two pounds daily per head. As the calves grow older, and eat more grain the Kaffir-corn may be mixed with oats, bran, or oil-meal.

Calves will nibble at hay about the time they begin to eat grain. Mixed or prairie hay is good; alfalfa or clover is better. Our calves have been eating about one pound daily per head of mixed hay. Before turning on pasture in the spring it is well to feed some green feed which may be increased gradually until calves get all they will eat. A sudden change to pasture is apt to produce scours.

Calves can be prevented from sucking each other's ears and mouths by leaving them tied separately for a half hour after feeding. Calf buckets may be kept clean by rinsing and scalding after using. Calves enjoy clean fresh water and salt. We find the Dewey hog waterer an excellent device for watering calves. The water is always clean and fresh. Our calves drink between 7 and 8 pounds daily per head.

To summarize, warm sweet milk, fed in clean buckets, supplemented with a little ground flaxseed or Blachford's meal with access to corn or Kaffir-meal, bright hay, fresh clean water, salt, plenty of sunlight, shelter and bedding in cold weather, shade in summer, and regularity and kindness in treatment will usually insure good thrifty calves that will gain from a pound and a half to two pounds daily.

Editor Kansas Farmer:—I respectfully submit the following resolution adopted at the regular session of the executive committee of the Kansas State Dairy Association at its meeting held in Manhattan, Kans., April 20, 1899:

"Resolved, That the executive committee of the Kansas State Dairy Association, now in session, heartily endorse the movement of the National Dairy Union to secure a federal tax of 10 cents per pound on all imitations of butter colored yellow, and request the Kansas Representatives and Senators in Congress to use all possible efforts to secure the passage of this bill. We believe this sentiment is endorsed by every dairyman in the State of Kansas.

W. F. JENSEN,  
Secretary Kansas State Dairy Association.

#### Low Rates to the East.

Your attention is directed to the exceptionally low rates in effect this coming season to nearly every prominent point in the East.

Never before has such an excellent opportunity been afforded for a Summer Vacation Tour, or for visiting friends in the East. We mention below a few of the places to which greatly reduced rates have been made. The Union Pacific is the line that will give you the best service to any of these points.

Columbus, Ohio, June 6-9. Rate—One Fare, plus \$2.00, for the Round Trip.  
St. Paul, Minn., June 9-13. Rate—One Fare and One-Third for the Round Trip, on Certificate Plan.

Buffalo, N. Y., June 14-15. Rate—One Fare, plus \$2.00, for the Round Trip.  
Chicago, Ill., June 14-15. Rate—One Fare and One-Third for the Round Trip, on Certificate Plan.

Milwaukee, Wis., June 14-16. Rate—One Fare and One-Third for the Round Trip, on Certificate Plan.

St. Louis, Mo., June 20-23. Rate—One Fare, plus \$2.00, for the Round Trip.  
Detroit, Mich., July 5-10. Rate—One Fare, plus \$2.00, for the Round Trip.

Richmond, Va., July 13-16. Rate—One Fare, plus \$2.00, for the Round Trip.  
Indianapolis, Ind., July 20-23. Rate—One Fare, plus \$2.00, for the Round Trip.

For full information as to dates of sale and limits, on tickets, time of trains, etc., call on F. A. Lewis, city ticket agent, or J. C. Fulton, depot agent.

#### Buffalo and Return at One Fare for the Round Trip

via the Nickel Plate Road, June 11, 12 and 13. Tickets good to return to and including July 2, 1899, providing they are deposited with joint agent in Buffalo on or before June 17, 1899. City Ticket Office, 111 Adams St., Chicago. Depot (on the Loop), Van Buren St. and Pacific Ave., near Clark.

ALL ABOUT MONTANA! Write to Commissioner Calderhead, State Bureau Agriculture, Labor and Industry, Helena, Mont., for free descriptive book.

## Can't Be Burst.

Hammer the bowl of a Sharples Farm Separator flat on an anvil with a sledge, and if you break it we will pay for it. Can't do it with any other separator. Other separators may burst and kill people; they have done it. A Sharples never did nor never will. It is built good all over—everywhere the best that it can be. Send for catalogue No. 19.



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Toledo, O. Omaha, Neb. West Chester, Pa.  
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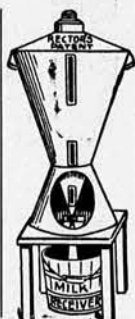
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### For \$7.

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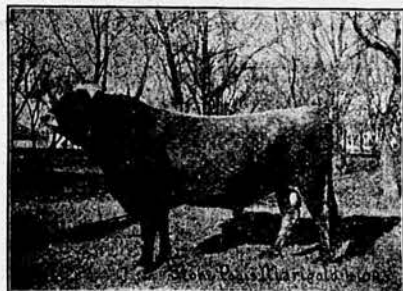
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TWO MILES SOUTH OF PARSONS.

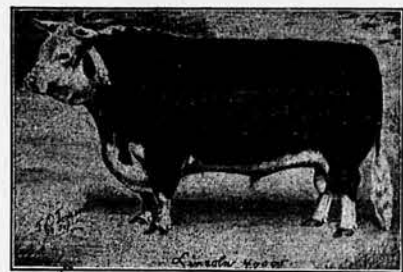


### STOKE POGIS MARIGOLD.

1500 lbs. at 2 years, 8 months. Full brother to Grace Marigold, 20 lbs. butter at 2 years old.

Sire—A son of Ida Marigold (sweepstakes World's Fair cow), 25 lbs., 2½ oz.; sired by a son of Ida of St. Lambert, 30 lbs. of butter in seven days.  
Dam—Lady Grace of Upholm, 25 lbs., 5½ oz. (an inbred St. Heller cow), dam of three cows with weekly tests of 20 lbs.

No State has a Better Bred or Handsomer Bull. He is Better Than His Picture.  
(See want "ad.") No Marigold helpers for sale.  
W. C. MOORE, Junction City, Kans.



### SPRING VALLEY HEREFORDS.

Lincoln 47095 by Beau Real, and Klondike 42001, at the head of the herd. Young stock of fine quality and extra breeding for sale. Personal inspection invited.  
ALBERT DILLON, HOPE, KANS.

## LOCKRIDGE STOCK FARM

GEORGE CHANNON, Prop'r,  
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### FOR SALE

25 Cruickshank Topped

SHORTHORN BULLS 6 to 13 months old. Come and make your own selection, or write for my prices this month.



### CEDAR HILL FARM.

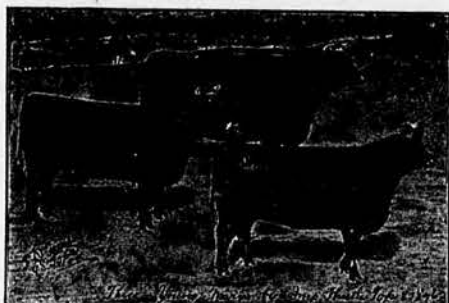
Golden Knight 108086 by Craven Knight, out of Norton's Gold Drop, and Baron Ury 24 by Godoy, out of Mysie 50th, head the herd, which is composed of the leading families. Young bulls of fine quality for sale.

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GLENDAL SHORTHORNS, Ottawa, Kans.  
Leading Scotch and Scotch-topped American families compose the herd, headed by the Cruickshank bulls, Glendon 119370, by Ambassador, dam Galanthus, and Scotland's Charm 127264, by Imp. Lavender Lad, dam by Imp. Baron Cruickshank. Young bulls for sale.  
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### ELDER LAWN HERD OF SHORTHORNS.



THE HARRIS-BRED BULL, GALLANT KNIGHT 124466, a son of Gallahad, out of 8th Linwood Golden Drop, heads herd. Females by the Cruickshank bulls, Imp. Thistle Top 83876, Earl of Gloster 74523, etc. Size, color, constitution and feeding qualities the standard. A few good cows for sale now bred to Gallant Knight. A few young bulls of serviceable age for sale. Address  
T. K. TOMSON & SONS, DOVER, KANS.

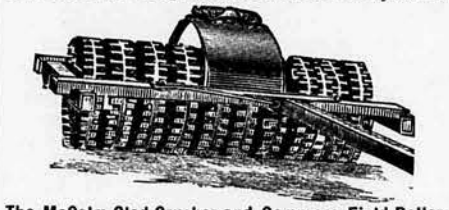


## SHORTHORN CATTLE.

I have combined with my herd the Chambers Shorthorns and have the very best blood lines of the Bates and Cruickshank families. Herd headed by Baron Flower 114352 and Kirklevington Duke of Shannon Hill 126104. The Cruickshank Ambassador 110811 lately in service.  
Best of shipping facilities on the A. T. & S. F. and two branches of the Missouri Pacific Railways. Parties met by appointment.  
B. W. GOWDY, GARNETT, KANS.

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It is Used by Progressive Farmers Everywhere.



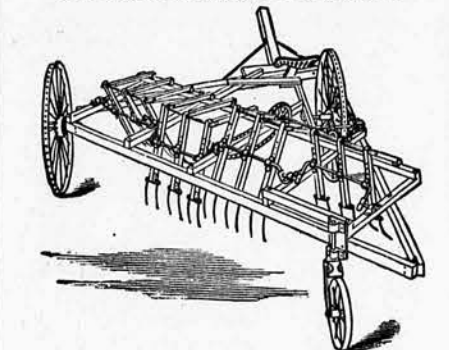
The McCormick Clod Crusher and Compress Field Roller.

It crushes and grinds all clods, packs the soil without making a smooth, hard surface, no parts to wear or get out of repair. For literature, address

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### C. B. & Q. Side Delivery Hay Rake

throws the hay in a loose continuous windrow, so that the sun and wind can penetrate, and thus obviate the necessity of a hay tedder.  
The team goes around the field the same as the mower, taking up the driest hay, leaving it shaker loosely in the windrows so that the sun and wind will dry it out if not quite dry when raked.

CHAMBERS, BERING, QUINLAN CO.,  
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Send us 10 cents in stamps (to pay postage) and the names of ten or twenty of your neighbors that cure their own meats and we will send you a sample of WRIGHT'S CONDENSED SMOKE, the great meat preservative, the great time, money and labor saver. Address, E. H. Wright & Co., 915 Mulberry street, Kansas City, Mo. In writing, mention KANSAS FARMER.

## ON AGAIN—APRIL 30TH. THE "KATY" FLYER.

## THE STRAY LIST.

FOR WEEK ENDING MAY 18, 1899.

Cloud County—A. R. Moore, Clerk.

MULE—Taken up by Louis Christie, in Summit tp., four miles east of Scottsville. April 15, 1899, one brown mare mule, about 8 years old, and weighing about 700 pounds, shod in front, stiff or stringhalted in hind legs, tip of right ear split; valued at \$15.

Lincoln County—J. S. Stover, Clerk.

MULE—Taken up by Louis McKinney, in Battle Creek tp., (P. O. Yorktown), May 1, 1899, one brown mare mule, with dark stripes over shoulders, 2 years old; valued at \$25.

FOR WEEK ENDING MAY 25, 1899.

Bourbon County—H. Frankenburg, Clerk.

MARE—Taken up by G. O. Cowan, in Marion tp., south of Uniontown, one flea-bitten gray mare, 15 hands high, weight about 1,000 pounds, and about 12 years old; valued at \$15.

Comanche County—J. E. Harbaugh, Clerk.

COW—Taken up in Logan tp., one red and white cow, weight 700 pounds, A on right hip, G on left hip, M on left side, crop off left ear, half under-crop right ear; valued at \$20.

Cherokee County—S. W. Swinney, Clerk.

HORSE—Taken up by Mrs. Malinda Turner, one and one-half miles west and one mile south of Baxter Springs, April 25, 1899, one brown horse 8 years old, and branded N X.

Clay County—J. G. Cowell, Clerk.

MARE—Taken up by Ed Braden, in Sherman tp., April 28, 1899, one bay mare, 16 hands high, barb wire cut on left fore foot, rear left foot white, star in forehead; valued at \$35.

FOR WEEK ENDING JUNE 1, 1899.

Stanton County—C. E. Van Meter, Clerk.

MARE—Taken up by J. G. Adams, in Stanton tp., three miles south and six miles east of Johnson City, May 5, 1899, one dapple-bay mare, 15 hands high, with black mane and tail and white spot in forehead, branded with diamond on left shoulder; valued at \$30.

Cherokee County—S. W. Swinney, Clerk.

MARE—Taken up by H. H. Michael, in Shawnee tp., April 28, 1899, one bay mare, 6 years old, 15 hands high, slit in left ear; valued at \$12.50.

HORSE—Taken up by C. W. Raymer, in Shawnee tp., May 20, 1899, one bay horse, 12 years old, 15 hands high, star in forehead, hind feet white from pasterns down; valued at \$15.

## Publication Notice.

(No. 20013.)

In the District Court of Shawnee County, State of Kansas.

Clayton M. Parke, Plaintiff,

vs.  
A. F. Hilton, Emma M. Hilton,  
I. B. Mason, et al., Defendants.

The above-named defendants, I. B. Mason and Emma M. Hilton, will take notice that the plaintiff, said Clayton M. Parke, did on the second day of May, 1899, file his petition in said District Court within and for Shawnee County, Kansas, against you as co-defendants with A. F. Hilton, and that you and each of you must answer said petition, filed as aforesaid, on or before the 25th day of June, 1899, or said petition will be taken as true and a judgment rendered against the defendant A. F. Hilton in said action, for \$3,625.00, together with interest at 10 per cent per annum from the 17th day of April, 1899, and for costs of suit, and also a decree of foreclosure against all of the above-named defendants of mortgage dated May 26, 1891, given by the defendant A. F. Hilton, on the following described real estate, situate in Shawnee County, Kansas, to wit: A part of the southwest quarter of section number thirty (30), township number eleven (11), south of range number sixteen (16), east of the sixth principal meridian in Kansas, adjacent to the city of Topeka. Commencing at a point thirty-two and one-half (32½) feet southerly from the intersection of the center of First avenue in the city of Topeka extended upon the said quarter section and the east line of the alley between Fillmore street and Western avenue in said city of Topeka extended as aforesaid, said point being in the east line of said alley; thence southerly along said east line of said alley extended eighty-two and one-half (82½) feet; thence at right angles easterly one hundred and eighty-five (185) feet; thence northerly at right angles eighty-two and one-half (82½) feet; thence westerly at right angles one hundred and eighty-five (185) feet to place of beginning, and you will be forever enjoined from claiming any right, title or interest to and in the said described real estate.

A. M. CALLAHAN,  
Clerk of District Court.

[SEAL]  
NELLIS & NELLIS, Attorneys for Plaintiff.

## ON AGAIN—APRIL 30TH. THE "KATY" FLYER.

When writing our advertisers please mention Kansas Farmer.



## MARKET REPORTS.

## Kansas City Live Stock.

Kansas City, May 29.—Cattle—Receipts since Saturday, 4,099; calves, 291; shipped Saturday, 82 cattle; 15 calves. The market was steady to strong. The following are representative sales:

DRESSED BEEF AND SHIPPING STEERS.		WESTERN STEERS.	
No.	Ave. Price.	No.	Ave. Price.
1.....	1,450 \$5.35	51.....	1,425 \$5.15
103.....	1,268 5.00	38.....	1,029 4.90
19.....	1,890 4.85	81.....	1,165 4.75
1.....	830 4.50	1.....	640 4.00
46 T.....	1,180 \$5.00	38 T.....	1,174 \$5.00
44 T.....	1,156 5.00	25.....	1,006 4.95
28.....	1,030 4.85	82.....	1,176 4.85
25.....	908 4.60	2.....	1,000 4.00

## NATIVE HEIFERS.

No.	Ave. Price.	No.	Ave. Price.
29 h & s.....	676 \$4.90	66.....	677 \$4.85
2.....	950 4.80	2.....	740 4.65
4.....	820 4.40	22 h & s.....	830 4.40
3.....	893 4.40	1.....	830 4.25

## NATIVE COWS.

No.	Ave. Price.	No.	Ave. Price.
1.....	1,180 \$4.40	1.....	300 \$4.25
5.....	1,180 4.00	6.....	1,000 3.75
2.....	905 3.50	4.....	1,005 3.25
2.....	800 3.00	2.....	1,030 2.85

## NATIVE FEEDERS.

No.	Ave. Price.	No.	Ave. Price.
25.....	1,073 \$4.85	24.....	1,253 \$4.75
5.....	1,020 4.75		

## NATIVE STOCKERS.

No.	Ave. Price.	No.	Ave. Price.
1.....	520 \$5.20	25.....	742 \$5.25
35.....	699 5.10	17.....	654 5.10
1.....	840 4.75	3.....	890 4.60
1.....	840 4.25	4.....	740 3.75

Hogs—Receipts since Saturday, 6,264; shipped Saturday, 677. The market was steady. The following are representative sales:

74.....	299 \$3.75	66.....	282 \$3.75	70.....	302 \$3.72½
80.....	273 3.72½	67.....	286 3.70	68.....	276 3.70
93.....	249 3.70	74.....	269 3.70	65.....	280 3.70
61.....	272 3.67½	63.....	225 3.67½	69.....	233 3.65
75.....	250 3.65	61.....	241 3.65	78.....	227 3.65
21.....	190 3.65	133.....	230 3.65	63.....	240 3.65
77.....	224 3.62½	81.....	206 3.62½	78.....	231 3.62½
68.....	223 3.62½	57.....	199 3.62½	66.....	201 3.62½
69.....	216 3.60	67.....	250 3.60	60.....	236 3.60
185.....	228 3.60	16.....	207 3.60	25.....	208 3.60
63.....	201 3.60	101.....	186 3.57½	55.....	212 3.57½
91.....	175 3.55	35.....	149 3.55	78.....	175 3.55
102.....	153 3.52½	20.....	133 3.52½	33.....	139 3.52½
24.....	155 3.52½	85.....	162 3.52½	33.....	150 3.52½
21.....	149 3.50	12.....	151 3.50	14.....	133 3.50
5.....	388 3.45	11.....	141 3.45	7.....	128 3.45
7.....	122 3.40	8.....	110 3.35	2.....	285 3.30
2.....	350 3.25	3.....	220 3.00	14.....	74 2.95

## St. Louis Live Stock.

St. Louis May 29.—Cattle—Receipts, 2,630; market steady to strong; beef steers, light to fancy heavy, \$4.00@5.50; stockers and feeders, \$3.25@4.75; cows and heifers, \$2.50@4.75; Texas and Indian steers, \$3.50@5.00; cows and heifers, \$2.30@4.25.

Hogs—Receipts, 4,500; market steady; pigs and lights, \$3.65@3.75; packers, \$3.70@3.85; butchers, \$3.80@3.90.

Sheep—Receipts, 4,500; market steady; natives, \$4.00@5.60; lambs, \$5.25@7.50.

## Chicago Live Stock.

Chicago, May 29.—Cattle—Receipts, 13,500; market stronger; beefs, \$4.00@5.50; cows and heifers, \$2.00@5.00; Texas steers, \$4.00@5.00; stockers and feeders, \$3.75@5.15.

Hogs—Receipts, 40,000; market generally steady; mixed and butchers, \$3.65@3.87½; good heavy, \$3.75@3.90; rough heavy, \$3.50@3.65; light, \$3.65@3.82½.

Sheep—Receipts, 16,000; market steady to weak; sheep, \$4.00@5.50; lambs, shorn, \$4.75@6.50.

## Chicago Grain and Provisions.

	May 29.	Opened	High'st	Lowest	Closing
Wh't—May.....	75	76½	76½	74½	76½
July.....	75½	76½	76½	75½	77½
Sept.....	75½	76½	76½	75½	75½
Corn—May.....	3¼	3¼	3¼	3¼	3¼
July.....	3¼	3¼	3¼	3¼	3¼
Sept.....	3¼	3¼	3¼	3¼	3¼
Oats—May.....	2¼	2¼	2¼	2¼	2¼
July.....	2¼	2¼	2¼	2¼	2¼
Sept.....	19½	20	20	19½	20
Pork—May.....	8 17½	8 25	8 25	8 15	8 20
July.....	8 17½	8 40	8 40	8 30	8 35
Sept.....	8 17½	8 40	8 40	8 30	8 35
Lard—May.....	5 05	5 07½	5 05	5 05	5 05
July.....	5 17½	5 20	5 17½	5 17½	5 17½
Sept.....	5 17½	5 20	5 17½	5 17½	5 17½
Ribs—May.....	4 70	4 70	4 70	4 67½	4 67½
July.....	4 80	4 82½	4 80	4 80	4 80
Sept.....	4 80	4 82½	4 80	4 80	4 80

## Kansas City Grain.

Kansas City, May 29.—Wheat—Receipts here to-day were 169 cars; a week ago, 107 cars; a year ago, holiday. Sales by sample on track: Hard, No. 2, 67¢@69¢; No. 3 hard, 63¢@68¢; No. 4 hard, 61¢@65¢; rejected hard, 61¢@64¢. Soft, No. 2, 77¢; No. 3 red, 73¢@76¢; No. 4 red, 65¢; rejected red, 58¢@59¢. Spring, No. 2, 68¢@69¢; No. 3 spring, 61¢@67¢.

Corn—Receipts here to-day were 113 cars; a week ago, 91 cars; a year ago, holiday. Sales by sample on track: Mixed, No. 2, 30¢@30½¢; No. 3 mixed, nominally 29¢@30¢; No. 4 mixed, nominally 29¢; no grade, nominally 25¢@28¢. White, No. 2, 31¢; No. 3 white, nominally 30¢; No. 4 white, nominally 29¢.

Oats—Receipts here to-day were 14 cars; a week ago, 8 cars; a year ago, holiday. Sales by sample on track: Mixed, No. 2, 20¢@27¢; No. 3 mixed, 26¢; No. 4 mixed, nominally 25¢. White, No. 2, 28¢; No. 3 white, nominally 27¢.

Rye—No. 2, 58¢; No. 3, nominally 57¢; No. 4, nominally 56¢.

Hay—Receipts here to-day were 46 cars; a week ago, 58 cars; a year ago, holiday. Quotations are: Choice prairie, \$7.00@7.50; No. 1, \$6.25@6.75; Timothy, choice, \$8.50@9.00. Clover, pure, \$6.25@7.00. Alfalfa, \$7.00@8.00.

## Chicago Cash Grain.

Chicago, May 29.—Wheat—Cash, No. 2 red, 76¢@77½¢; No. 3 red, 72½¢@75¢; No. 2 hard winter, 72½¢@73½¢; No. 3 hard winter, 70½¢@72½¢; No. 1 northern spring, 75¢@76¢; No. 2 northern spring, 74½¢@75¢; No. 3 northern spring, 70¢@74¢.

Corn—Cash, No. 2, 32¢; No. 3, 31¢.

Oats—Cash, No. 2, 24¢@24½¢; No. 3, 23¢@24¢.

## St. Louis Cash Grain.

St. Louis, May 29.—Wheat—Cash, No. 2 red, elevator, 79¢@81½¢; track, 79¢; No. 2 hard, 75¢. Corn—Cash, No. 2, 33¢; track, 34¢@35¢. Oats—Cash, No. 2, 25¢; track, 25½¢@26½¢; No. 2 white, 28½¢.

## Kansas City Produce.

Kansas City, May 29.—Eggs—Strictly fresh, 11c per doz. Butter—Extra fancy separator, 15c; firsts, 13c; seconds, 11c; dairy fancy, 13c; country roll, 11¢@12¢; store packed, 10c; packing stock, 10c. Poultry—Hens, 7½¢; broilers, 20c; roosters, 20c each; ducks, 6c; young ducks, 15c; geese, 5c; turkeys, hens, 7c; young toms, 6c; old toms, 6c; pigeons, \$1.00 per doz. Berries—Strawberries, choice to fancy, \$1.25@1.50 per 24-box crate; poor to fair, 75¢@1.00. Vegetables—Lettuce, home grown, 15¢@25¢ per bu. Pleplant, 10¢ per doz bunches. Spinach, home grown, 15¢@25¢ per bu. Asparagus, home grown, 20¢@30¢ per doz bunches. Radishes, 2½¢@5¢ per doz. bunches. Potatoes—Home grown, 35¢@40¢ per bu.

"Weaver Grace."

T. F. B. SOTHAM, Proprietor. EDW. J. TAYLOR, Director.

W. H. SOTHAM, 1839. T. F. B. SOTHAM, 1899.

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Breeder, Commissioner, Exporter and Importer

—OF—

HEREFORD CATTLE.

We feel our obligation to the entire Hereford fraternity for appreciation expressed March 1 for our work and herd which encourages and enables us to expend greater effort in behalf of the peerless Hereford. We are not pricing Weaver Grace-bred Herefords, though we will try to meet the views of customers who cannot attend our annual auction, when they make acceptable offers. No Corrector females for sale at any price for two years.

Pure-bred Herefords. So many orders constantly being placed with us to purchase Herefords, we feel it would be wrong to have our own stock on price. Farmers and ranchmen requiring bulls will find it to their interest to entrust their orders to us. We give the benefit of our experience and will save buyers ten times what we charge in fees. We make a specialty of foundation stock for herds. Fees \$5 per head and railway fare.

Grade Herefords. No grade bulls handled on any terms. Grade Hereford steers and heifers bought on commission. Fees, \$1 per head and railway fare. Steers that can top the market our special pride. We will not touch inferior stock.

Buying orders wanted for the 8,000 top steer calves of America for delivery at Kansas City, October 25-28, during the Hereford show.

No Commissions Accepted From Sellers. The buyer pays us. Sellers will confer a favor by listing saleable stock with us. We desire to locate all unsold Herefords and this does not prevent the seller from selling elsewhere.

Order blanks and blanks for listing sale stock. Colortype of Corrector (16x22) suitable for framing. New General Weaver Grace Catalogue and Star List (June 1). Hereford tract giving history and characteristics of the breed. Address

T. F. B. SOTHAM, Chillicothe, Mo.

Agents Wanted.

Acme Hame Fastener a great money maker for agents. Sells Quick and Easy. Send 25 cents for sample or 40 cents pair by mail. Circular and terms to agents for stamp.

ACME HAME FASTENER CO., Sixth and Vermont St., Quincy, Ill.

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Cures every known disease, without Medicine or Knife. Hundreds willingly add their testimony.

Prof. Axtell heals all manner of diseases, and teaches this art to others.

He grants to all men the power he claims for himself. The reason why he can heal without medicine is because he knows how; he not only cures all manner of diseases in his office but HE CURES AT A DISTANCE WITH EQUAL EFFICACY. Circulars of many prominent people—who sign their names and recommend his treatment—mailed on application. Prof. Axtell is endorsed by the leading business men of this city. Address all communications to

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VARICOCELE cured without knife, pain or danger. Illustrated booklet free. Call or write. DR. H. J. WHITTIER, Kansas City, Mo.

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Will depend largely upon who handles it.

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We make liberal advances on consignments at the low rate of 5 per cent. per annum for the money thus used. We supply all our shippers with free wool sacks and sewing twine. We send our Circular Letter to all who ask for it. It keeps you informed on the wool situation and wool prices. Write for it to-day. Address,

**SILBERMAN BROTHERS,**  
122-124-126-128 Michigan St. CHICAGO, ILL.

**WOOL WANTED!**  
500,000 Pounds of Wool,

For which we will pay the highest market price in cash. Send us sample, giving number of fleeces. Place your name on sample, and on receipt of same we will quote you prices. For small lots you can send sample by mail. Address Oakland, Kans.; or you may ship direct to us and we will allow you all it is worth. For large clips send three or four fleeces by freight or express. We will furnish sacks or wool twine if desired. Address **TOPEKA WOOLEN MILL, Topeka, Kans.**

**Higgins' Hope Herd Registered Poland-China Hogs.**

I am now offering a Choice Lot of Gilts and Sows bred to my Herd Boar, Eberley's Model 20854. If you are looking for the right kind, drop me a line and get my list before buying.

**J. W. Higgins, Jr., Hope, Kans.**

**VALLEY GROVE SHORT-HORNS.**

THE SCOTCH BRED BULLS

Lord Mayor 112727 and Laird of Linwood 127149

HEAD OF THE HERD.

LORD MAYOR was by the Baron Victor bull Baron Lavender 2d, out of Imp. Lady of the Meadow and is one of the greatest breeding bulls of the age. Laird of Linwood was by Gallahad out of 11th Linwood Golden Drop. Lord Mayor and his sons are bred to the Scotch breed of Linwood for sale. Also bred Shetland ponies. Inspection invited. Correspondence solicited. A few young bulls sired by Lord Mayor for sale.

Address **T. P. BABST, PROP., DOVER, SHAWNEE CO., KAS.**

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Have for sale at all times, singly or in car lots... **Registered Herefords and Short-horns.**

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Are the Finest Equipped, Most Modern in Construction and afford the Best Facilities for the handling of Live Stock of any in the World. The Kansas City Market, owing to its Central Location, its Immense Railroad System and its Financial Resources, offers greater advantages than any other. It is the Largest Stocker and Feeder Market in the World, while buyers for the great packing houses and export trade make Kansas City a market second to no other for every class of live stock.

	Cattle and Calves.	Hogs.	Sheep.
Official Receipts for 1898.....	1,846,233	3,672,909	980,303
Sold in Kansas City 1898.....	1,757,163	3,596,828	815,580

**C. F. MORSE,** Vice Pres. and Gen. Mgr. **E. E. RICHARDSON,** Secy and Treas. **H. P. CHILD,** Asst. Gen. Mgr. **EUGENE RUST,** Traffic Manager.

**THE SHAWNEE FIRE INSURANCE COMPANY,**  
.....TOPEKA, KANSAS.....

Insures Against Fire, Lightning, Windstorms, Cyclones and Tornadoes. The only company in Kansas with a paid-up capital of \$100,000. It writes more business in Kansas than any other company. It has paid losses amounting to \$493,266.63. Call on your home agent or write the company.



## The Poultry Yard

Conducted by C. B. TUTTLE, Excelsior Farm, Topeka, Kans., to whom all inquiries should be addressed. We cordially invite our readers to consult us on any point pertaining to the poultry industry on which they may desire fuller information, especially as to the diseases and their symptoms which poultry is heir to, and thus assist in making this one of the most interesting and beneficial departments of the KANSAS FARMER. All replies through this column are free. In writing be as explicit as possible, and if in regard to diseases, give symptoms in full, treatment, if any, to date, manner of caring for the flock, etc. Full name and postoffice address must be given in each instance to secure recognition.

### Crops for Poultry.

Profitable poultry-raising depends mainly upon a liberal supply of eggs in winter. Among the desirable or really essential foods for producing eggs in winter are "greens." A daily supply of some kind of green food in winter, in connection with the regular allowance of other food, adds the proper material for the so-called balanced ration. It is not generally understood what an important relation pastureage bears to success in poultry-raising. It may be noticed how quickly a flock of hens confined to a yard will completely denude it of all herbage. Though many notice this, they afterward wonder why the hens cease to be as productive on the bare yards. Hens will pasture as close as sheep. The very best natural pasture for poultry is a well-established sod, where native grasses abound, interspersed freely with white clover. A first-class cow pasture is an ideal place for a poultry pasture.

### ALFALFA.

On farms where business attention is given to poultry it will pay well to put in crops for both summer pasture and winter use. Good judgment will enable the farmer to readily supply the demands of his flock, and in doing so to greatly increase the ready money income of his farm. Alfalfa is destined soon to be one of the leading crops for poultry pasture. Its wonderful recuperative powers prove it to be just the plant for the purpose. It can be cut several times during a season for hay-making. Poultry can be turned on it, and when it has been eaten down pretty close they may be removed and the alfalfa will soon be growing again with its usual vigor. This may be repeated the entire season.

### RAPE.

Another crop which will become a favorite for poultry pasture is rape. The immense quantity that can be grown on an acre will make rape a great favorite, especially where there are bare poultry yards. The large rape leaves are just the "greens" to supply yarded fowls with, and they seem to relish it just as much as they usually do the early cabbage heads they find growing in the gardens. Where it can be had convenient to the poultry yard, crimson clover should be seeded in August or during the last working of the corn. This will afford a most excellent pasture during the winter, when there is no snow on the ground. The crop will also be highly beneficial to turn under in the spring, to be followed with any crop.

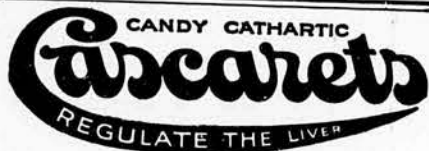
Among the crops desirable for winter feeding when nothing outside is available are rutabagas, mangels-wurzels and turnips. Any of these are good to feed for greens, and can also be boiled, mashed and mixed with the regular allowance of morning mixed food.

Perhaps in the near future there will be regular silos for preserving green cut clover for poultry feeding. It is doubtful, however, whether ensilage, if it has to be fed in the fermenting stage, would prove a safe or desirable food for poultry. Properly cured, cut quite green, clover, cut fine and packed dry in bags, will, in time, become a standard product on the markets for poultry.

The sooner that farmers recognize the fact that poultry-raising should be followed on the same line that dairying is—giving food and care to secure results—the sooner will they begin to reap their share of profits and become competitors with practical poultry-raisers. The idea that "anything is good enough for hogs or chickens" is a mistaken one that has anchored many a farmer on the wrong side of the road to profitable farming. Nothing can be attained without effort, and the more practical and intelligent the efforts the greater the success.—Baltimore Sun.

### Prepare for Next Winter.

Now that the hatching season is about over, we should begin to prepare the houses and sheds for our fall and winter layers. The young males should be sep-



arated from the pullets before they begin to crow, and the latter should be provided with suitable quarters, where they must remain after they are fully matured.

Warm, dry houses, with scratching shed attachments, are first to be considered, and these should be constructed with a view of economizing labor, without depriving the fowls of any comfort.

There is really no best plan for these buildings. Each and every one should decide from his surroundings what kind of buildings are best adapted to his wants, the first and only considerations being comfort for the fowls and convenience for the owner. Decide now what you need, and while the little chicks are growing, provide it, so that when fall arrives everything will be in perfect readiness.—Home and Farm.

### June Hatching.

A late cold spring like the present necessarily prolongs the hatching operations later into the summer. We like to have all the chicks out of the shell by the first of June, but we shall be obliged to depart from that rule this year, and we have no doubt that there is a goodly-sized crowd of other breeders who are in the same fix. But Plymouth Rocks and Wyandottes can be hatched any time in June and made profitable winter layers if kept under conditions which will favor rapid growth. They will not begin laying so early, of course, as those hatched in May, it being assumed that the earlier birds received no setback from exposure or lack of other attentions such as the season required, but they will pay a handsome profit on the feed which they consume during the winter. There will be more profit in thrifty June hatched chicks than weakly ones hatched in February and March, and during a spring like the present a large proportion of the early chicks are likely to be weakly even though the parent stock is healthy and vigorous.

### Skim-Milk as Food for Young Chickens.

Did you ever notice how crazy the young chickens are for clabbered milk? They go for it in about the same way that young children reach for the sugar bowl. Has it never occurred to you that this must be excellent food and that there was something in the young chicken's constitution that demanded just that sort of food? Well, the subject has been taken up like a great many other things by the experiment stations, and among others by the Indiana station, and it finds that with oats and corn-meal at 80 cents per hundred pounds, shorts 60 cents and skim-milk 20 cents, it costs 4.5 cents to produce a pound of live chicken, green food not counted, while by adding milk it costs but 3.5 cents. It finds that chickens gain more, that the cost of the ration is cheaper, and the chickens are healthier. We do not go into the details of these experiments, but simply give some conclusions:

That if chickens have skim-milk they will eat more of other food than without it.

That the more milk they can be induced to take the more rapidly will they gain.

That skim-milk is much more valuable in hot, dry weather than in cooler weather.

In short, that adding skim-milk decreases the cost and secures greater returns from the other foods given, all of which is about what we would expect. Therefore, do not forget to have plenty of skim-milk in reach of the chickens during the hot weather.

### Starting the Chicks.

Nearly every one learns by sad experience that chicks are hard to raise. My experience has taught me that the hen must not be taken from the nest for at least forty-eight hours after the hatch has begun. In taking the hen from the nest she should be thoroughly dusted with insect powder. Each chick should have a drop of fresh lard or sweet oil placed on the throat and head; just a drop; then place the hen in a good waterproof coop and allow a small run to be attached. I usually take some boards and make a run on the grass, say four feet square. The hen will hover the little fellows in the coop and also pick grass for them in the run. I do not believe in shutting a hen up and letting the chicks out, as she can feed them best by instinct. For feed I sometimes give the proverbial hard boiled eggs, but more often stale bread soaked and then pressed dry or all the water out. I place oyster shell, mica grit, powdered charcoal and bran where they can get it always. For drinking fountains for each brood in the nursery I cut the side of a tomato can a couple of inches from the bottom and press the tin in so that the chicks can drink and not get their feet wet. I find two very serious drawbacks—cold and lice. Cold feet or wet bodies will produce bowel troubles and filth will produce lice. At the end of a week I sprinkle the bottoms of the roosting coops with Pikes lice killer and

# Women and the Wheel.

The Danger of Excessive Riding Becomes Apparent.  
One Girl Illustrates the Experience of Many.

From the Gazette, Delaware, Ohio.

The healthfulness of bicycle riding for women is still a disputed question between eminent physicians and health reformers.

That the wheel has created a revolution in the lives and manners of modern women cannot be doubted. Used in moderation it surely creates for women a means of out-door exercise, the benefit of which all physicians concede. Used to excess, like any other pastime, its effect is likely to be dangerous to a high degree.

No better illustration of this can be offered than the case of Miss Bertha Reed, the seventeen-year-old daughter of Mr. and Mrs. J. R. Reed, 335 Lake Street, Delaware, Ohio.

In describing her daughter's experience, Mrs. Reed says: "In the fall of 1896 my daughter's health began to fail in an alarming manner. It was evident that she was over-exerting herself by riding her wheel. We put it away for a time to see if health would return with rest and quiet; but, to our discouragement and disappointment, she became worse and grew steadily paler and thinner until we concluded she must have consumption, and we sent her to a physician for consultation. He told her that her lungs were in a sound condition.

"However, he found that her pulse registered one hundred and four beats per minute, and it actually remained at that number for two weeks.

"The doctor said that her condition was due to an almost bloodless condition of the body, so that the heart had to beat so much more rapidly to supply the wants of the body. My daughter had lost her appetite, and could not take sufficient food to nourish the system.

"The doctor prescribed some medicine, which was procured and a dose given. By this time she had become so weak that we almost gave her up.

"Meanwhile, I procured some of Dr. Williams' Pink Pills for Pale People, as they had been recommended to me by Mrs. Washburn, who lives in Galena, and who had been wonderfully cured by them, and I began to administer the pills in place of the doctor's prescription. I was greatly relieved to notice that she began to improve at once, and by the time she had taken two boxes was completely restored.

"It is because I feel so grateful for the restoration of my daughter's health that I hope, by recommending them, I may be able to help some one else to happiness and health by causing them to try the same restorative.

MRS. J. R. REED.

Sworn to and subscribed in my presence this 2d day of August, 1897.

H. W. PATRICK, Notary Public.

Miss Reed's affliction was caused by the loss of vital force aggravated by over-taxation of her strength. To restore her system to a normal condition it was necessary to infuse the blood with new life; to make it rich, red and abundant. With this accomplished by Dr. Williams' Pink Pills for Pale People nature asserted herself again and good health returned with all its joys.

All the elements necessary to give new life and richness to the blood and restore shattered nerves are contained, in a condensed form, in Dr. Williams' Pink Pills for Pale People. They are also a specific for troubles peculiar to females, such as suppressions, irregularities and all forms of weakness. They build up the blood, and restore the glow of health to pale and sallow cheeks. In men they effect a radical cure in all cases arising from mental worry, overwork or excesses of whatever nature. Dr. Williams' Pink Pills are sold in boxes (never in loose bulk) at 50 cents a box or six boxes for \$2.50, and may be had of all druggists, or direct by mail from Dr. Williams' Medicine Co., Schenectady, N. Y.

again dust the hen. At the end of ten days I let hen and brood out of the nursery and give them the liberty of the yard, where only hens with chicks are kept. For the first two months the principal feed is millet, wheat and cracked corn. A water fountain is ever at hand to satisfy their thirst. The chicks are kept enclosed in the brooding yard whilst the hens are allowed free range. Successfully rearing chicks can only be acquired by using common sense and judgment, but these must be used. A chick kept out of wind and water, and covered by the hen will grow for ten days and then they will grow anyway.—J. M. Atcheson, in Wallace's Farmer.

### INCUBATORS

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Free Catalogue.

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Sure Hatch Incu-

bator Co.,

Clay Center, Neb.

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twine is a **REAL DEALER**. We have MANILA,

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GALVANIZED WIRE—100-POUND-ROLLS—SHORT-LENGTHS—WRITE FOR PRICES.

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Dana's White Metallic Ear Labels. Stamped with any name or address and consecutive numbers. Adopted by more than forty recording associations and thousands of practical stockmen. Samples free. Agents wanted. Prices reduced.

C. E. DANA, 62 Main Street, WEST LEBANON, N. H.



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## STANLEY'S CORRUGATED STEEL HINGES

are not like other hinges; they are better. Why? Well, because they are corrugated, which is just like so much reinforcing; makes them at least 50% stronger, just as angle steel is stronger than flat steel. Are so made they can't bind on the pin even if hinge gets rusty. Are ornamental too. Don't be satisfied till you know all about them. Ask your dealer or send to us for circulars, etc.

THE STANLEY WORKS, Box 20, NEW BRITAIN, CONN.



## Will Give 10c. for every Gopher Scalp.

The above offer is made by many counties in the western states. We guarantee the

## "Out-O-Sight" Gopher Trap

to catch when all other traps fail. Send \$2.50 cents for a sample by mail, or have your dealer order for you. Don't wait; gophers are active.

ANIMAL TRAP CO. 13 Meek St., Abingdon, Ill.

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This is the Best Representative of the Modern Mower.

embracing in its construction everything that is latest and best. It has our new pitman; close meshed concealed gear; direct right angle long stroke. This acts instantly and easily and does away entirely with the old hand lever. The only hand lever on this machine is used for tilting the cutter bar. Provided with serrated ledger plates—doubles the cutting capacity and the life of the guard. These are but a few of the many superior points of this mower. Above all it is lightest in draft and free from side draft. Made in four sizes, to cut 4 1/2, 5, 6 and 8 feet. We also manufacture the famous Hodges Headers, Hodges "Laddie" and "Lassie" Hand and Self Dump Rakes, Monarch and Acme Sweep Rakes and Acme Stackers. Don't buy until you get our new illustrated catalogue. Send for it, it's free.



Acme Harvester Co., Pekin, Ill.



## Burrowing Birds.

The stormy petrels nest just above the Atlantic surge, on the islets near Iona and the Hebrides. There above the rock on certain islands is a black, buttery soil, in which they burrow like little winged mice, and on a nest of sea-pink lay one white egg. As this desertion of the regions of light and air by birds is something outside the natural course of their lives, it leads to various odd and unexpected social complications and domestic problems. Among the latter is a serious one, the difficulty of keeping the underground house clean or moderately cool. It is usually very hot. Sand martins, for instance, do not attempt to ventilate their burrows as rabbits and rats do; neither do kingfishers nor the stormy petrels when they make their own burrows, and do not creep into chinks between piles of stones or rocks.

Evidence of the high temperature of this "hot chamber" where the young petrels are hatched is seen in a very pretty popular belief in the Outer Hebrides. The people say that they hatch their eggs not by sitting on them, but by sitting near them, at a distance of six inches between them and the opening of the burrow. Then the petrels turn their heads toward the eggs and "coo" at them day and night, and so "hatch them with their song." This, which sounds like a fable of the East Atlantic islands, has really a basis in fact. Mr. Davenport Graham says that the account is "very correct; though I never heard the cooing noise by day, I often did in the evening. It is rather a purring noise. When its nest is opened up the bird is usually found cowering a few inches away from its egg." This hot and stuffy atmosphere may aid the hatching of the egg; but there is no doubt that it brings into being other and very undesirable forms of life. The nests and burrows of sand martins are full of most unpleasant insects, and those of the kingfisher are nearly as bad.

The sheldrakes and puffins, which take possession of old rabbit holes, live far better in their burrowed quarters. The latter sometimes excavate burrows for themselves, and sometimes in rabbit holes. The former, we incline to think, always use the burrow of some other creature, usually that of a rabbit in a sand-hill. Sand-hill rabbits are the healthiest of their race, and the young "burrow ducks" which succeed them have a dry, comfortable, and well-ventilated house in which to make their start in life. It is generally believed that the bird takes the young away as soon as they are hatched. If so, she follows the example of most other ducks, whose ducklings "run" as soon as their down has dried. But a visitor to the Sandringham estate, before it was purchased for the Prince of Wales, informed the late Mr. H. Stevenson that the keeper had shown him a burrow from which an entire brood of young sheldrakes would come out to be fed when he whistled, and disappear into the hole again after their meal. —London Spectator.

## Deafness Cannot Be Cured

by local applications, as they can not reach the diseased portion of the ear. There is only one way to cure Deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube is inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed, Deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

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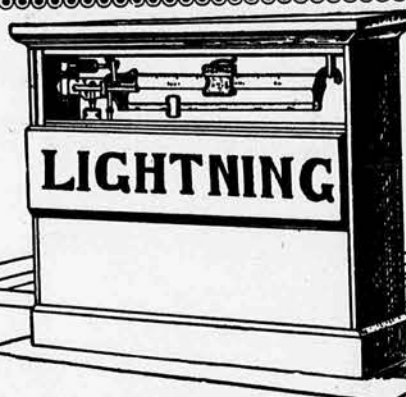
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**It will Save Money, Labor and Grain.**

**ACME HARVESTER COMPANY, PEKIN, ILL.**



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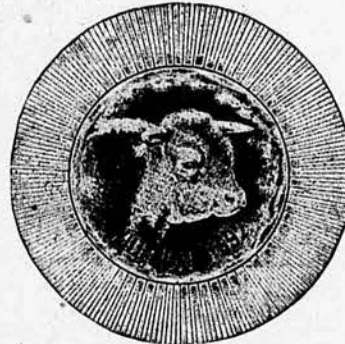
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