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W. W. WALTIRE, Car-

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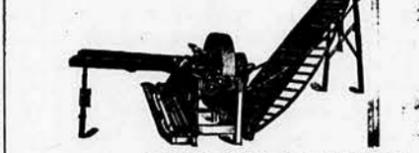
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LAPPEER, MICH., January 28, 1893.

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BEATS 'EM ALL!
Mention *KANSAS FARMER* when answering.

The Stock Interest.

IOWA FEEDING EXPERIMENTS.

In the summer of 1891 the Iowa Agricultural and Experiment college planned an experiment in steer-feeding for the purpose of comparing oil meal and corn meal on grass, and to ascertain the result of finishing on an increasing carbonaceous ration as compared with an increasing nitrogenous ration. Incidentally it was also desired to note the various results of stall, pasture and open-lot feeding. Eighteen grade steers, calved in the spring of 1890, were secured at an average cost of \$3.25 per 100 pounds. There were two steers of each of the following breeds: Short-horn, Hereford, Angus, Galloway, Devon, Red Poll, Brown Swiss, Holstein and Jersey. The cattle were grazed together until winter; they had had corn fodder on a winter blue grass woods pasture, with access to open sheds until February, when they were tied up in the barn and prepared for the trial for two weeks until the experiment began. Three periods of ninety-two days each are covered in the experiment. From March 1 to May 31 they were stall fed; from June 16 to September 15, pasture, and from October 1 to December 31, open lot. During the first period each steer was separately fed, but during the second and third they were divided into two lots, each lot containing one each of the nine different breeds. During the first period the eighteen steers gained 4,116½ pounds at a total cost of \$244.08, the average gain per day being 248 pounds, and the cost of gain per pound 5.93 cents. The total organic matter fed to each steer per day averaged 29.39 pounds. The nutritive ratio (i. e., the ratio between flesh-forming and heat-producing substances) was 1 to 9.4.

For the second period the steers were divided as above mentioned into two lots as nearly similar in all respects as possible. Lot one had gained during the first period 2,011½ pounds, and lot two 2,104½ pounds; the aggregate weight of the former June 15 was 10,016½ pounds, and of the latter 10,014 pounds. After a preparation of two weeks, consisting of a gradually increased ration of cut clover, with short grazing periods, the steers were turned into a field of upland rolling clover pasture, an average of four-fifths of an acre being assigned each animal. The clover was of luxuriant growth, eight to ten inches high. A tank of fresh spring water was placed before each lot, and rock salt was kept constantly at hand. In addition to their pasturage, lot one was fed eight pounds of corn meal per steer per day, and made a total gain of 723½ pounds. Lot two received eight pounds of oil meal per steer per day, making a total gain for the month of 682 pounds. The cost of the corn meal was \$12.96; of the oil meal \$27, thus showing that it cost \$14.04 more to make 682 pounds gain on clover and oil meal than to make 723½ pounds gain on clover and corn meal. The second month it cost \$1.98 more to make 534 pounds gain with clover and oil meal (made by lot two on an average daily ration per steer of eight pounds of oil meal) than to make 535 pounds gain with clover and corn meal (made by lot one on an average daily ration per steer of 13.7 pounds of corn meal). The third month it cost \$3.17 more to make 463½ pounds gain with clover and oil meal than to make 645½ pounds gain with clover and corn meal; lot one on an average feed per day per steer of 15.2 pounds of corn meal making the latter, and lot two on an average daily ration per steer of 8.2 pounds of oil meal, the former gain. Lot one gained during this second period 1,924 pounds at a total cost of \$82.72; the average gain per day per steer was 2.32 pounds, and cost of gain per pound 4.31 cents. Average corn meal per day per steer 12.35 pounds. Nutritive ratio 1 to 5.8. Lot two in the same time gained on an average daily ration per steer of 8.09 pounds of oil meal, 1,679 pounds at a total cost of \$105.35. The average gain per steer per day was 2.03 pounds, and cost of gain per pound 6.21 cents. Nutritive ratio 1 to 2.6.

During the third and last period of the

experiment lot one gained an average per day per steer of 3.26 pounds, a total gain of 2,701 pounds at a cost of \$160.03. Cost of gain per pound 5.92 cents. The total organic matter (snapped corn, corn meal, oil meal, corn fodder green and dry, hay, stover and mangels) per day for each steer to make the above gain averaged 43.31 pounds. Nutritive ratio of lot one during this period 1 to 9.5. Lot two gained on an average 2.8 pounds per day per steer, the total gain being 2,320 pounds at an aggregate cost of \$148.03. The organic matter fed to each steer averaged 44.57 pounds per day. The nutritive ratio of lot two for period three was 1 to 9.9.

The experiment concluded, the stock was at once prepared for shipment to Chicago. They were weighed January 2, received a liberal grain ration at noon, but none at night; their mangers were filled with clover hay and they received no water until evening. The following morning they were shipped and were sold on this market on the 4th at \$6 per 100 pounds to Swift & Co. The cattle were killed on the morning of the 5th, the carcasses hung in the cooling rooms until the 8th, when they were cut and weighed. The result of this block test we are able to give our readers in brief summary as follows:

Live weight.....	27,580 lbs.	
Dead warm weight.....	17,806 lbs.	
Percentage of beef, warm weight.....		64.6
Dead cold weight.....	17,505½ lbs.	
Percentage of beef, cold weight.....		63.6
Eighteen cattle, 27,580 lbs. at 6c per lb.....	\$1,654.80	
Cost of buying, killing and cooling 18 cattle.....	31.50	\$1,683.30
Less—		
Hides (green weight), 1,730 lbs. at 7c per lb.....	\$121.10	
Tallow (unsalvaged), 2,532 lbs. at 5¼c per lb.....	130.26	
Eighteen tongues at 5c each.....	9.00	
Eighteen guts at 1c each.....	1.80	
Eighteen tripe at 5c each.....	9.00	
Eighteen heads at 20c each.....	3.60	
Eighteen sets feet at 14c each.....	2.52	
Blood eighteen cattle at 6c each.....	1.08	279.26
		\$1,404.04

Divide net cost \$1,404.04 by 17,505½ (dressed weight) gives dead cost \$3.02 per 100 lbs.

WEIGHT, PRICES AND PERCENTAGES OF DIFFERENT CUTS.

Pieces.	Weight.	Price.	Amt.	Per cent.
36 loins.....	2,462½	18c	\$443.45	16.8
36 ribs.....	1,809½	18c	325.71	10.3
36 rounds.....	4,035	6c	242.10	23.1
Suet.....	720	6c	43.20	4.1
36 kidneys.....	52	3c each	1.56	0.3
36 flanks.....	522½	2c	1,045	3.0
36 chucks.....	3,783	5c	18,915	21.6
36 plates.....	2,011½	3¼c	84.87	14.9
36 shanks.....	1,063	2¼c	26.07	5.8
			\$1,453.08	

Shrinkage, 16%
17,505½
Sold at.....\$8.30 per 100 lbs.
Cost.....8.02 per 100 lbs.

To cover cost of cutting, selling, delivering and collecting.
\$.28 per 100 lbs.

It may be interesting to note that of the \$1,453.08 realized for the meat cut from the eighteen steers \$531.45 (36.5 per cent. of the entire value) came from loins; \$325.71 (22.4 per cent.) from ribs, or 60.9 per cent. of the value of the total amount from loins and ribs. Twenty-seven per cent. of the carcasses by weight sold for 60.9 per cent. of the total value. This portion sold for 18 cents per pound. Contrasting the percentages of dressed beef produced by the various breeds it may be noted that a Jersey of 747 pounds carcass had 190 pounds of tallow, while a Hereford of 1,062 pounds carcass had but 131 pounds. The latter dressed 66.4 per cent. of beef, the former only 57.5 per cent. The carcasses of the dairy breeds were deficient in thickness of cuts, and the marbling of fat and lean was not equal to that of the others.

We may add that we are indebted to Prof. C. C. Curtiss for the foregoing statistics, the same being a brief summary from Bulletin No. 20 issued by the station. In his concluding remarks Prof. Curtiss says: "It is plainly apparent that the highest selling steer is the one that will give the largest proportion of meat in choice loins and ribs," and, "the profitable killing steer should have a liberal amount of fat marbled with the lean, and not an excess deposited about the internal organs."—*Live Stock Report.*

It is barbarous to force the horse's head out of its natural position by the use of the over-head rein. Fortunately, the practice is gradually growing out of fashion.

The Kind of Sheep.

In one locality wool is the most desirable item in sheep, and the fleece that will bring the most money is the one that is the most desirable to raise. Of course as regards fineness and other qualities, the locality must be considered; as experience has shown that soil, climate and other conditions will make a considerable difference in the quality of the wool. Another, that is convenient to a good market, will often find a good mutton carcass of more profit than anything else. Early lambs may be the best source of income with another, and a class of sheep that will breed well and whose lambs make a rapid growth with good treatment will be the best sheep.

Portable Swine Pens.

A well-known swine breeder uses portable pens, and says that whenever the ground around them becomes foul they are easily removed to a fresh location, and the ground previously occupied plowed up and a crop or two raised from it, thereby purifying the soil. After two or three years it can again be seeded to grass and the pens returned to their original location. A rotation of hog pens once in two or three years goes farther in the direction of maintaining fertility than anything he has ever tried. With this kind of pen, or as many pens of this kind as may be necessary for the number of hogs kept, the original outlay for pens is reduced to a mere nothing in comparison with the large hog house. They will pay for themselves every year they are used. With this system, less than half the labor will keep the pens clean; they are warmer, the air is purer, the young pigs are healthier, and large numbers at any season are prevented from piling up together. At farrowing time each brood sow is isolated from the others, thereby being removed from anything liable to make them irritable and restless.

About Red Polled Cattle.

F. Van Buskirk, Blue Mound, Kas., says: "I have lived in Kansas twenty-five years. I commenced farming on a homestead with one Indian cow to start with. From that stock I went to the long-horned Texas and then to the Short-horn. I used these about ten years and raised some good cattle, but I always had a dislike to horns. One cow got loose in the barn once and killed another one with her horns. I then began to look for some kind of cattle without horns. I first tried the black polls, but did not like the cross because of so many bad colors.

"Six years ago I bought an imported Red Polled bull and I made more improvement on my cattle with the first cross than I had in ten years before. The calves were all dark, cherry red, and 90 per cent. hornless. Their good qualities are early maturity, uniform size and color, deep milking quality, and they are good feeders. I fed some half-blood beeves two years ago for sixty-five days and then sold them to the butcher when twenty-three months old for \$48 per head. I would as soon think of raising horned horses and hogs as horned cattle now."

Live Stock Husbandry.

Beware of the stallion whose pedigree will not stand publicity. If a horse has not a pedigree worth publishing, he should not be used as a stallion.

An old horseman says that carrots are the best of all roots for horses. If we would use them more we would find the feeding less expensive and the horses more easily kept in good condition.

At the present price of wheat, 1 cent per pound, there is no better way to dispose of it than to feed it to the pigs. I have been feeding wheat for one month to the sows and pigs and have never had pigs to do better and grow faster. I soak the wheat for twenty-four hours, as this softens it and it is easily digested. I first tried it dry, but too much passed them whole. I think that soaking is as good as grinding, and saves the time and expense of taking to mill, besides 5 cents per bushel for grinding, which price is charged at our mill. We have been to enough expense to raise the

wheat, and how to dispose of it to the best advantage and realize the most profit is the question, and pork at the present price is the only way I can see out of the hole.

The number of sheep in the United States seems surprisingly small when compared with the number in other smaller countries. While the United States has 44,000,000, New South Wales has 56,000,000 and the Argentine Republic 70,500,000. France has nearly half as many sheep as the United States, and Great Britain about three-fourths as many.

An illustrated and comprehensive work on Texas fever has been issued by the United States Department of Agriculture. It covers fully the investigations into the nature, causes, and prevention of Texas or Southern cattle fever, which have been made under the direction of Dr. D. E. Salmon, Chief of the Bureau of Animal Industry. The book may be secured by addressing Hon. J. Sterling Morton, Secretary of Agriculture, Washington, D. C.

The mammoth 5,000-pound steer, Prohibition, was recently sold at auction for \$500, which is at the rate of about 10 cents per pound. It is said that this mountain of bovine flesh was purchased for a California man who intends to use him for show purposes. The steer was taken to Chicago to exhibit at the World's Fair, but was barred out because he did not have a registered pedigree. Taking into consideration style, color and weight, the steer probably has no superior in the world.

The *Brewers' Journal* last year gave the following method of preventing the annoyance of flies: Then before harnessing, pass a dry cake of carbolic acid soap over the animal's entire body, giving special attention to those parts upon which the flies are wont to settle. The cake of soap is to be fresh, with as much as possible of the odor of the carbolic acid perceptible; but it is not, on any account, to be wet. The soap, besides protecting the horse from the flies, will give the animal's hair a polish that is highly satisfactory.

The horse's teeth. A horse at 5 years of age has a full mouth of teeth, viz., forty; mares have only thirty-six. They are described as follows: Six incisors (fore teeth or nippers) above and below; two canine (fore teeth or nippers), and twelve molars, situated between the incisors, and molars are back teeth or grinders, also above and below. A horse, therefore, has twenty teeth above and twenty below. By careful attention to the teeth the age of the horse may be ascertained with accuracy up to seven years old.

My business is to raise and feed stock for the butcher, consequently have no ax to grind. A great many farmers are opposed to buying stock for breeding purposes from advertisers or men who make a specialty of producing fine stock, arguing that prices are too high and that the only difference is feed and care. In order that you may stay where you started a selection of the best is a necessity. With judicious feeding comes improvement. Any of our improved breeds will rapidly degenerate with poor keep. The men who are making a specialty of producing good stock are a boon to the average farmer and deserve his patronage. If we expect to keep moving we are compelled to patronize the specialist. It will pay all farmers to use full-blood males, and it will pay to buy of men who have for a term of years been good feeders. These men use their brains in combining the requisites for the production of good stock, and no matter what means are employed (trickery excepted) it will pay to buy it.—*National Stockman.*

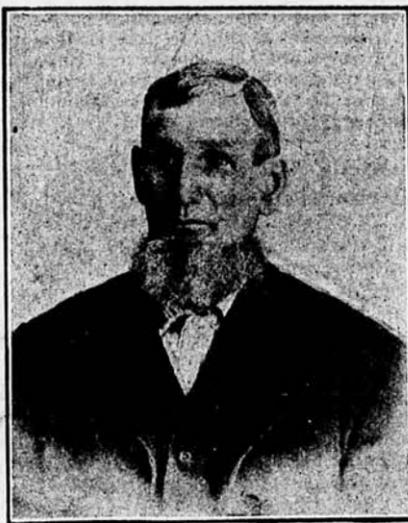
Every one who has the care and cleaning of horses realizes the annoyance that comes from wet and dirty animals, resulting from lying down where there is an accumulation of urine and manure upon a tight floor. To remedy this, a very good way is to make the flooring of strips instead of plank or cement, as is sometimes the case, and in such a manner as to prevent the escape of urine. We have seen it recommended to use strips of inch board six inches wide, setting them on the edge and keeping a space between each two strips by pieces of lath, so that there will be no retaining of water upon the floor. Instead of using inch stuff, we should make the strips at least two inches wide, and believe there will then be no obstacle to the free passing off of the urine. The floor will thus be kept dry and there will be less danger of a horse lying down in urine, as may be the case on a tight floor with the bedding kicked away.—*Germantown Telegraph.*

Agricultural Matters.

A FARMER'S EXPERIENCE AND OBSERVATIONS.

In a splendid 4th of July number in honor of its twenty-first birthday, the Hutchinson News publishes some letters from Zeno Tharp, a practical farmer of Troy township, Reno county. After eliminating the politics and some other extraneous matter, the FARMER presents the following valuable excerpts from Mr. Tharp's letters, as showing the evolution of the Kansas farmers:

"I will try to tell you of our present condition and what it was. We came to Reno county in 1873, quite poor, indeed, with two wagons and two teams, and ten head of cattle. We made us a dugout and lived there two or three years. In 1874 we had 100 acres of good corn for the grasshoppers. We then put out sixty acres of wheat and twenty-nine of rye. In the spring we sowed twenty acres to oats and forty acres to corn. On the 2d day of June came a terrible hail storm and left us nothing but the bare land. Wheat was ready for the sickle, and would have



ZENO THARP.

made thirty bushels to the acre; \$3,000 gone in a few moments. The year after that we had good crops. My wheat averaged twenty-six bushels to the acre. Next April we had another hail storm. This time I lost 150 acres of wheat and an orchard of 400 trees; \$3,000 more gone. Afterward I sold \$925 worth of wheat to the miller and never received one cent for it.

"When we moved into our dugout we had not one dollar left. We were not a broken merchant when we came here. Unfortunately for us we were born of poor parents. When we were 21 years old we could not read or write our own name, and at the age of 27 we married a poor girl who had been working in the kitchen for six or eight years for her board and what schooling they might give her, and that was but little. She has been worth her weight in gold to me. We have a family of eight children—three boys and five girls. Two sons and two daughters are married, there now being five families of us, and each one has their home; each one bought their land and covered it all over with a mortgage for all that it was worth, and started bare-handed. We never drew one dollar's worth of relief, but worked wherever we could get the work. We all started poor alike; no bank to draw on; all farmers.

"Now let us see what we have accomplished, commencing, as we did, on the raw land. To-day we have 1,460 acres of land—five good farms, well improved—and fifteen town lots all paid for. Three of the boys are clear of mortgage, the other two and myself will pay out this spring. We fed six car loads of steers last year, and I raised thirty-six of them. We are now feeding ten or twelve car loads of steers and half that many hogs. We have fifty-five head of horses and mules to run the farms, 340 head of cattle and 290 hogs. The last year we raised more than 20,000 bushels of grain. We can pay out and the farms are well stocked and just ready to make more. A few years ago we were paying inter-

est on \$12,000, so now we can hurrah for Kansas.

"We have neighbors all around us that have done as well. Hundreds of farmers in Reno county have money in the banks on deposit. Not one of us drags himself from morn till night; we get up early, yet we are all happy and contented.

ZENO THARP.

"P. S.—We hope that every paper that is interested in the Kansas farm and farmer will copy this letter, as every word is correct. We refer any inquiring friend to Hon. J. F. Greenlee and Hon. J. W. Dix, Representatives of this county in the Legislature; to E. L. Meyer, cashier of the First National bank; A. J. Lusk, President of the Hutchinson National bank, and W. E. Hutchinson, President of the Valley State bank. My postoffice address is Partridge, Reno county, Kas. Z. T."

Troy, Reno Co., January 25, 1893.

II.

"In my letter some time ago I wrote you of my success as a farmer in Reno county. Since my writing I have traveled over several townships and conversed with a great many farmers, so I can write you truthfully. First, in Lincoln township, I can assure you I was surprised to see the great change in the last two or three years. So many new houses, all large and handsome houses, with new barns and piles of corn. We had our horses fed and took dinner with Mr. Tucker. He had just finished a beautiful house. He said to me that he had done well the last two years; that his debts were not heavy enough to worry him. He came here quite poor, but now has a farm worth \$10,000, well stocked. His near neighbor had a very large, fine house, just built last summer, a good barn and one corn crib and a lot full of fat steers and hogs.

"The next farmer we called upon was a Mr. Henry. He said he came here very poor, took a homestead and commenced work with a good yoke of cattle, without any money. 'I was so poor and hard up,' he said, 'at times I did not know where the next meal was to come from.' He stuck to the homestead. He has it now all under fence, a good young orchard of 400 trees, all well stocked with both horses and cattle, a large two-story house, well furnished, with plenty of out-buildings. He opened the door to his carriage house and there stood a fine carriage and a brand new one-horse top buggy. He said he just owed \$400; that he could pay that by fall and have enough left to take himself and wife back to York State on a visit.

"We also passed through Haven township. We just thought of the letter some time ago by a Haven correspondent, wherein he referred to the nice, large houses and well improved farms. I thought the man that owned such a farm, in such a rich, thrifty township, ought to feel proud. Every word he wrote of the wealth and good farms was true.

"Then we passed into Clay township. There we met an old friend with whom, when we were poor and had to work away from home in 1873 and 1874, we slept in the same straw stack. He came here from Missouri with \$1,100, took a homestead near Hutchinson. That money he earned by months' work and that was all he had to by a team and commence on the homestead with. He made himself a sod house and lived there until he could build a better one. He sold that home long before the boom, then bought right in sight of the old home, where I now find him, yet unmarried. In sight of the county seat, with 900 acres of good land, well improved, 150 head of steers and fifteen or twenty head of horses. He don't owe a dollar, has money loaned out, a reserve in the bank, and wine and cider in the cellar.

"The next day he went with me to see some of his old former friends. First we called at Henry Hartford's, just in time to look around and get a good dinner. He has about 800 acres of land, came here as poor as all the rest of us. He had just sold a car load or two of cattle, had sixty or seventy head left, with 100 head of stock cattle, with 100 or more hogs.

"We had a very pleasant visit that day. We called on several old farm-

ers. One of them was Mr. McKinsley. He had just sold a car load or two of fat steers. He, poor fellow, only had 130 head left. Had just sold sixty head of choice ones at home for \$4.85 per hundred. The next day he went to the Hutchinson packing house to sell a car load of hogs at \$7.50 per hundred weight.

"Yes, and we learned by an old farmer that one farmer in Salt Creek township has made more money on the farm than me and all my boys, and I believe it.

"The next question you may ask, may be, 'Are there no poor in Kansas?' We can say in truth, yes, sir. Kansas has been the dumping ground of almost all other States of poor people, and a few remain poor, notwithstanding they live under the same laws and surroundings as those other men referred to, who came here poor and got rich.

ZENO THARP."

Troy, Reno Co., March 2, 1893.

The Supreme court of the United States has finally settled a question which has proved a source of vexatious disputation in this country for many years. In ruling upon a tariff law, which was recently submitted to its attention, it decided that the tomato is a vegetable and not a fruit. Now if the watermelon can be properly classified by judicial edict, there will be nothing left for the American people to quarrel over but silver.

Secretary Morton is reported to have said: "The statistics really show that agriculture is safer than banking, manufacturing or railroading, taking all things into account. There is no farmer of good sense and good health anywhere in the West," Mr. Morton declares, "who cannot make a good living for himself and family, and that is as well as the majority of men are doing in any other pursuit. The man who owns a farm and sticks to it is certain to profit by it in the future. There is practically no more land to be added to the area of cultivation. The supply of agricultural products has almost reached its limit in the United States, and must now remain stationary, while the demand will go on increasing every year. This implies a gradual improvement in prices and a steady appreciation of the value of farming lands."

Drought and tame grasses do not go well together. Farmers have been trying for many years to find some good tame grass which would withstand the dry spells to which we are subject in the West. The recent dry, warm weather has tried tame grasses enough to show that some are weaker than others. Some of the tender ones have been nearly killed. In the experimental plots of the Oklahoma Experiment Station grasses sown this year show a vast difference in their drought-resisting qualities. Among those which are reported to have done the best thus far are Bermuda grass, orchard grass, Awnless brome grass and two varieties not so well known, called respectively in the language of science, *Lolium perenne* and *Lolium italicum*. Among the clovers, alfalfa has stood dry weather best. Common red clover has done very well, crimson clover made a splendid start but has suffered severely during the late trying weather.

Publications of the United States Department of Agriculture for June.

Report No. 105 of the Division of Statistics. Report of the Statistician for May. Contents: Crop Report for June; Agriculture in the Caucasus; The Customs Tariff in Martinique; Agricultural Produce Statistics of the United Kingdom; Transportation Rates. Pp. 179-221.

Synopsis of Report No. 105 of the Statistician. (Issued in advance of the monthly Report of the Statistician, from which it is condensed.) Pp. 4.

The Journal of Mycology, Vol. VII, No. 3. (Devoted especially to the study of fungi in their relation to plant diseases.) Contains articles on experimental treatments of rusts of wheat and other cereals, peach rosette, remedies for the almond disease, prevention of leaf diseases of nursery stock, removal of lichens from pear trees, etc. Pp. 195-331, pls. 21-31.

Farmers' Bulletin No. 11. The Rape

THERE Never was a better fit—Vacuum Leather Oil for all black leather; 25c, and your money back if you want it.

Patent lambskin-with-wool-on swob and book—How to Take Care of Leather—both free at the store.

Vacuum Oil Company, Rochester, N.Y.

Plant: Its History, Culture and Uses. Pp. 20.

Farmers' Bulletin No. 12. Nostrums for Increasing the Yield of Butter. Pp. 16.

Bulletin No. 7 of the Division of Forestry. Forest Influences. Contents: Summary of Conclusions; Review of Forest Meteorological Observations; Relation of Forests to Water Supplies; Notes on the Sanitary Significance of Forests, and appendix, including articles on the determination of precipitation and its bearing on theories of forest influences, and on the analysis of rainfall with relation to surface conditions. Pp. 197.

Bulletin No. 80 of the Division of Entomology. Reports of Observations and Experiments in the Practical Work of the Division, made under Direction of the Entomologist. Contents: Beneficial and Injurious Insects of California; Insect Injuries in Nebraska during the Summer of 1892; Insects of the Season in Iowa; Entomological Notes for the Season of 1892; Experiments of Apiculture, 1892. Pp. 67.

Bulletin No. 13 of the Office of Experiment Stations. Organization Lists of the Agricultural Experiment Stations and Agricultural Schools and Colleges in the United States. (A list of the experiment stations, with their governing boards and station staffs; and also of the agricultural schools and colleges, with their courses of study and boards of instruction.) Pp. 123.

Studies of Parasitic and Predaceous Insects in New Zealand, Australia and adjacent Islands. (Made at the request of the California State Board of Horticulture.) Pp. 39.

Monthly Weather Review for April. (A summary of weather conditions observed throughout the United States during April, 1893.) Pp. 91-122; charts 6.

Experiment Station Record, Vol. IV, No. 8. Contents: Editorial note—Two Factors often Disregarded in the Purchase of Feeding Stuffs; conclusion of Dr. Wolny's article, Relation of the Physical Properties of the Soil to the Cultivation of Plants; abstracts of publications of the agricultural experiment stations in the United States, and of reports of foreign investigations. Pp. 625-700.

Bulletin No. 8 of the Division of Forestry Timber Physics, Part 2; Progress Report. Results of Investigations on Long-leaf Pine. Contents: Mechanical tests at Washington University testing laboratory, St. Louis, Mo.; the long-leaf pine, its characteristics and distribution; results of mechanical tests; field report regarding turpentine timber; resinous contents and their distribution in the long-leaf pine; field records of test material. Quarto, Pp. 92, pls. 12.

Reprints in small editions from the Report of the Secretary of Agriculture for 1892:

Special Report of the Assistant Secretary of Agriculture. Pp. 67-84.

Report of the Chief of the Bureau of Animal Industry for 1892. Pp. 85-122.

Report of the Chief of the Division of Chemistry for 1892. Pp. 123-152.

Report of the Botanist for 1892. Pp. 201-214, pls. 9.

Report of the Pomologist for 1892. Pp. 247-280, pls. 13.

Report of the Microscopist for 1892. Pp. 281-292, pls. 9.

Report of the Special Agent in Charge of Fiber Investigations, 1892. Pp. 359-376, pls. 6.

Report of the Superintendent of Gardens and Grounds for 1892. Pp. 377-402.

Report of the Statistician for 1892. Pp. 403-470.

Report of the Chief of the Division of Records and Editing for 1892. Pp. 497-508.

Report of the Director of the Office of Experiment Stations for 1892. Pp. 515-549.

That Terrible Scourge.

Malarial disease is invariably supplemented by disturbance of the liver, the bowels, the stomach and the nerves. To the removal of both the cause and its effects Hostetter's Stomach Bitters is fully adequate. It "fills the bill" as no other remedy does, performing its work thoroughly. Its ingredients are pure and wholesome, and it admirably serves to build up a system broken by ill health and shorn of strength. Constipation, liver and kidney complaint and nervousness are conquered by it.

The whole world is being searched to find hay, says the Times, which is now selling in London as high as £8 10s. a ton.

The Farmer's Forum.

This department is devoted to the discussion of economic questions and to the interests of the Alliance, Grange and kindred organizations.

A Pertinent Inquiry.

EDITOR KANSAS FARMER:—I want to know if the charge is true, that the stringency in the money market is caused by the purchasing of silver under the Sherman law. Has the payment of \$47,435,173 of idle gold for equally idle silver caused it? The gold might have passed into circulation and to that extent prevented stringency. If it did not, and the gold is hoarded and remains idle, how is the situation changed? And whose fault is it?

According to available information, \$2,536,011 of silver certificates issued in payment for silver are yet in circulation. That is so much inflation, trifling it is true, but it could not have caused stringency. These certificates, while they continue in circulation, rest upon a corresponding amount of idle silver, and the entire amount paid for silver has been, in fact, the utilization of idle gold and silver, and if it had not been hoarded and used for purposes of speculation, would have increased the amount of money available for the transaction of business by just so much. How the Sherman law has produced or can produce a stringency is what I want to know.

Less than a half crop of wheat and oats harvested. None of the wheat will grade No. 2. Corn is suffering for rain.

P. C. BRANCH.

Sterling, Kas., July 14, 1893.

Demonetize Gold.

EDITOR KANSAS FARMER:—The time has come when the United States must take decided steps to protect its own interests in the world. We have large obligations to Europe that are made payable in gold. Interest on loans, returns on investments and other debts are all specified to be payable in gold.

Now, these creditor nations have joined cause to enhance the value of what we must pay by demonetizing silver. They have actually succeeded so far by our acquiescence as to run up the gold dollar to about one dollar and sixty cents, and now they would like us to do away entirely with silver money and so help them to raise their dollar of tribute to about two dollars. There seems to be some so blind as to be willing to do it. The American nations are pre-eminently silver-producing countries. Why should we join in destroying the value of our own products? If we attend to our own business we will at once demonetize gold and adopt free coinage of silver, restoring it to be legal tender for all debts, public and private. If we and the other American nations whose interests are identical with ours should do this, we would, within a few months, have sixteen ounces of silver worth more than an ounce of gold. Let all the gold in the treasury, or that comes in, be stamped into ounces or fractions of an ounce and cast on the world's market. We need not repudiate a single gold debt. We will give gold to those whose contracts call for it. But just now, when the leading money loaning nations think they have us cornered, it would be well to let them know that we have it easily in our power to make gold cheap and silver dear. The interests of the United States are in peril, and it is time to rise above party loyalty, to the supreme duty of patriotism.

MAXWELL PHILLIPS.

Scandia, Kas.

Don't Be Afraid of Us, Mother.

For the statistics it contains, as well as for the humorous side presented, we copy from the *National Agricultural Union Cable*, an English agricultural paper edited by the Earl of Winchelsea, the following communication:

SIR:—You deserve the sincere thanks of all persons who desire the welfare of their country for your motion in the House of Lords with reference to the insecurity of our food supplies. Probably no one expected any other result than the withdrawal of the resolution, but it is a great pity that some peer with a real knowledge of the subject did not follow Lord Playfair, and tell the whole truth. That noble lord told the House that the proportion of home

supplies of wheat compared with foreign was now 82 per cent. This is true, if the average of the eight years ending 1892 is taken, but it very inadequately represents the present position. The average area of wheat in the United Kingdom for those eight years was 2,512,000 acres, whereas last year it was less than 2,300,000, and with a deficient crop, the total quantity of British and Irish-grown wheat available for consumption was only 7,000,000 quarters; and taking the consumption this year at 28,000,000, it only represents 25 per cent. instead of 82, or just one-fourth of our consumption. Now the proportion of home-grown wheat to foreign for the twenty-four years, 1852 to 1876, was 61 per cent., so it can be seen at a glance how completely the conditions have changed, and how absolutely serious has become our dependence upon other countries for the supply of the first necessities of life.

But perhaps Lord Playfair's most astounding argument was that in the case of any threatened interruption of our food supplies, we should have the active assistance of the United States of America to resist the hostile movement. It seems never to have occurred to his ingenious mind that the United States themselves might be the aggressors. They would rejoice in making 40s. or 50s. per quarter of their wheat instead of 30s., and as for their affection for Great Britain, there are some of the States, where, before a British subject can be accepted as an American citizen, he is compelled to renounce his allegiance to his sovereign. There is a widespread feeling in the United States that the cry should be "America for the Americans," and one of their leading statesmen has said that within ten years the representatives of Canada will be members of their Congress. In the face of facts such as these, it is with no little regret that I find peers on both sides of the House cheering such feeble and illusory arguments and statements.

Yours faithfully,
A RETIRED FARMER.

Ipswich, June 22, 1893.

The Safest Banks.

Amid the crash of failing banks and tumbling banking concerns of doubtful character, a contemporary calls attention to the fact that the suspension of the two national banks in Chicago and one in Indianapolis shows the strength of the national banking system rather than any weakness; that they will pay depositors every dollar, and the stockholders are the only ones who will lose anything. If these banks pay their depositors it will simply show that the failures were not so bad as they might have been. While the government protects the people from loss through the issue of notes, there is no absolute protection to depositors of national banks, and in the nature of the case there never can be as long as men are incompetent, reckless or dishonest. During the recent stupendous failures in Australia, when panic seized upon every heart, the government stepped in and averted universal ruin, perhaps, by absorbing all the private savings banks, and thus assuring the people that their money was safe. We must come to this, sooner or later, in the United States. The postal savings bank is our "manifest destiny." It is the only absolutely safe system of deposits, and its adoption would not only establish confidence and thus tend to prevent financial panics to a large extent, but would foster and encourage the spirit of saving, and thus promote the material welfare of the country. With the government itself behind the doors of a bank, failure is impossible until the nation fails. Let us have the United States postal savings bank at the earliest possible moment, that the hard-earned savings of the common people may be protected from the defaulter, the speculator, and dishonesty and incompetency in general. The failure of a savings bank is a terribly cruel thing. It takes the money of the poor, the struggling, deserving, industrious, provident poor, who deny themselves present necessities or common luxuries to be prepared for the inevitable "rainy day"—it robs these of their "rainy day" savings and gives them to reckless and dishonest men who perhaps never earned a dollar by hard work and self-denial in their lives. One savings bank failure will destroy the work of years in promoting economy and saving among the people. It fosters the spirit of "eat, drink and be merry, for to-morrow we die." It is the solemn duty of every government to sacredly protect the savings of the people, and nothing will more effectually contribute to their prosperity, and consequently to the material prosperity of the nation.—*Ohio Farmer*.

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

The African Gold Mines.

The *London Times* has published some information about the more recently opened African gold mines, which, if true, as there seems no reason to doubt, has an important bearing on current questions of general finance and currency throughout the world. According to the *Times* there is a prospect of such an enormous addition to the world's stock of gold from that source during the years immediately at hand as to upset a good many of the calculations of the economists and statisticians. It reports that the area of these newer gold fields is not less than eleven miles long, and that experts, who have made careful investigations, testify that there is £315,000,000 worth of gold in sight. The deposits are of a nature that presents no great difficulties to the working of them; and it is expected that the entire amount can be placed on the market in about ten years, provided the most improved methods of extraction are employed and proper facilities for transportation furnished.

The magnitude of this coming addition to the world's supply of gold can perhaps be best understood by comparison with other famous deposits and their yield. The prospective African supply amounts, in terms of American money, to, say, \$1,527,750,000. The chief other gold deposits which have been worked during the present century are in Australia and the United States. When gold was discovered in the former country it was thought for a time that a practically exhaustless supply had been found. Indeed, the first fifteen months of practical mining in that country yielded an amount which was estimated to be four times what the annual production of the world had been supposed to be five years before. Some of those early hopes were destined to be disappointed, though the total production from that source has certainly been large. On an estimate of \$50,000,000 of gold exports from Australia per year, the total addition to the world's supply from that country has been not much more than \$2,000,000,000 during the forty years that the mines have been worked. The new African mines are expected to furnish three-quarters as much as that in ten years. The annual supply from Africa during the next ten years promises to be three times the annual supply from Australia since the latter has been a gold-supplying country.

As for the United States, the prospective gold supply of the near future cannot be compared with the promises of the African field. According to the last report of the Director of the United States Mint, the entire gold product of this country in 1891 was only \$33,175,000, scarcely more than a fifth of the promised African annual supply. All this gold in sight in Africa will speedily find its way to London, and so into the hands of men who will know how to use it. The presence of it there and the uses to which it will be put must necessitate taking some new views of the currency problem. What effect it will have on the monetary systems of all the great commercial nations will become a pressing topic for discussion when it is made quite sure that the experts are correct in their estimates of the possibilities of the African deposits.—*Providence Journal*.

To Alliance Men and Editors.

By authority of President Loucks and Executive Board for the Alliance, and appointment of the National Reform Press Association, the undersigned have secured rooms 3 and 4 in the Stock Pavilion of the World's Fair as National Alliance and reform press headquarters, where all farmers and editors visiting the World's Fair will be extended a hearty welcome.

Editors are requested to send a copy of each issue of their papers to be placed on our reading tables for the benefit of all visitors who desire to rest and read.

Each visitor is requested, when at headquarters, to register, giving place where he is stopping in the city. This will enable members and friends from different sections to find each other while here. We have arranged to have a duplicate register kept at H.

R. Eagle & Co.'s, 68 and 70 Wabash avenue, eight miles from the fair, which may be examined by persons stopping in the city who desire to find friends before or after locating. Those desiring to write us before starting, or to send papers for our reading tables, should direct to Rooms 3 and 4, Stock Pavilion, World's Fair, Chicago, Ill.

J. HUGH MCDOWELL, Chairman.
S. McLALLIN, Secretary.

AVOIDABLE TROUBLE.

A Few Hints to Lighten Many a Burden.

Every dyspeptic in the world suffers untold wretchedness that Pe-ru-na would relieve at once. All victims of chronic catarrh endure a constant misery which a course of Pe-ru-na would dispel in nearly every case. Consumptives without number, who are silently submitting to fate as if there was no help, could be saved and restored to health by Pe-ru-na. Scores of women, who drag themselves wearily through their daily tasks with some female derangement which has destroyed all hope, cannot only be promptly relieved, but the vast majority permanently cured by Pe-ru-na. The great multitude of nervous wretches from nervous weakness or any form of weakness, who have lost all expectation of cure, would find Pe-ru-na able to quickly soothe, and finally cure all these derangements.

Every invalid in the land ought to have a copy of the "Ills of Life," a free medical book, giving a brief description and treatment for all chronic diseases. Sent to any address by The Pe-ru-na Drug Manufacturing Company, of Columbus, O.

Weekly Weather-Crop Bulletin.

Issued by the United States Department of Agriculture, in co-operation with the Kansas State Board of Agriculture, for the week ending July 17, 1893; T. B. Jennings, observer:

Rains have been badly distributed. Good rains have fallen in the central counties of the western half of the State and in the extreme northeastern counties, while the central counties of the east half have generally received little or none.

The sunshine has been excessive. The temperature has been about normal in the eastern division but excessive in the middle and western divisions.

In the eastern division the week has generally proved a good one, while in the middle and western divisions it has been somewhat severe on crops.

Corn is generally in tassel, and has begun to silk in the central and northern counties, and it is now where it needs good rains.

Oats harvest is about over. Flax, in Coffey and Anderson, is about ripe and promises a good crop. Millet is generally reported doing well and promising a good crop.

In the middle and western divisions grass has suffered in common with other crops, but is generally good in the eastern, where haying has begun in a few localities.

Hot winds prevailed more or less in the middle and western divisions and in Riley.

Chinch bugs are disappearing in Montgomery, but have appeared in some fields in Phillips.

Among the Ozarks.

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

Piles! Piles! Piles!

Not piles of worthless stuff, but Stekete's Ointment and Pile Remedy combined will cure the worst case of Piles in any form, and have plenty left to cure burns or any sores on man or beast. Was never known to fail to cure sore breast and scratches on horses. All for 35 cents. Do not pay \$1.00 when you can have this for 35 cents. For sale by druggists, or on receipt of 35 cents in U. S. postage G. G. Stekete, Grand Rapids, Mich., will send it. Cut this out and take it to a druggist first; 3 boxes for \$1.00.

Make Your Own Bitters

On receipt of 30 cents, U. S. stamps, I will send to any address one package Stekete's Dry Bitters. One package makes one gallon best tonic known. Cures stomach and kidney diseases. Now is the time to use bitters for the blood and stomach.

WHEATON, Ill., December 7, 1890.

MR. STEKETE:—Your Dry Bitters has no equal for kidney or liver complaint. Have been troubled for the past ten years. Find your bitters excellent.

FRANK SCHUBERT.

Send G. G. Stekete, of Grand Rapids, Michigan, 30 cents, U. S. stamps, and we guarantee that he will send at once.

The Family Doctor.

Conducted by HENRY W. ROBY, M. D., consulting and operating surgeon, Topeka, Kas., to whom all correspondence relating to this department should be addressed. This department is intended to help its readers acquire a better knowledge of how to live long and well. Correspondents wishing answers and prescriptions by mail will please enclose one dollar when they write.

Medical Men Confer.

Last week (Thursday) about a score of medical men who had not gone into liquidation on account of the hot weather, under the title of the Eastern Kansas Medical Society, held their quarterly session in Topeka. The program was a lengthy one, and its rendering took till midnight, with the first number left out. That first number was a paper on "The Duty of Government in Establishing Quarantine for the Preservation of Public Health" (a long title for a hot night in July), by Senator John Martin. But the Senator, who is always urbane and polite in the extreme, sent word that he had been unable to quarantine himself against some uncanny microbes that had invaded his alimentary canal, and that canal had to be quarantined against the cook and he against the medical meeting. So the paper was put on ice and held over for another quarter.

Dr. Roup, of Lebo, finding it more comfortable to sit fanning himself under a big cottonwood tree in Lebo than to sweat through a loose-woven paper and a close-knit discussion, sent his paper to be read by the Secretary. The paper was on "Laparotomy for Peritonitis," and described the case of a patient who could not get a move on his alimentary canal for eight or nine days, though he was puked and purged and dosed and drenched, head up and head down, during nearly all the long hours and days of waiting. Then when they thought he was as near the great St. Peter's gate as he could go without slipping through, a council was called and an agreement entered into to create a gateway through the great Chinese wall of his abdomen and peep in and see what was the matter. A dormor window of suitable dimensions was cut near the gable and twenty or thirty feet of tubing unreeled from his commissary store-house, and replaced without finding any cause of offense. The *causis belli* not being visible, his belly was closed in due form and he was permitted to recover.

A number of gentlemen with coats off and rivers of perspiration playing Niagara Falls from their brows to their waist-bands, discussed the paper. Nearly all agreed that the treatment preceding the operation had been sufficiently heroic to suit even Paracelsus or Galen, although Dr. Sheldon did venture to suggest that if a regular course of salines were adopted in such a case, it should be masterful and very ample. Then some one suggested, and the Mayor seconded the suggestion, that the dormor window was not made in the right part of the gable; it should have been in the center, just under the ridge pole, and that had it been thus located, a better chance would have been afforded for finding something wrong. But it was finally agreed that "all is well that ends well," and as the man got well, the treatment was well, and Dr. Rodgers justified the proceeding on the theory that no man is any doctor at all until he has made a record in abdominal section, and in this case the author of the paper had made his record, and some wag who was not sweating very freely remarked that the title of the paper might be changed to "a laparotomy for a record."

The paper that probably elicited most discussion was by Dr. Lindsey, on "The Odor of the Breath in Mental Diseases." As there is an odor peculiar to measles, smallpox, diphtheria, typhoid and other fevers, by which they could be detected, even in the dark, by physicians familiar with them, so there is a characteristic odor to the breath of insane people. The writer thought this peculiar breath probably originated in decomposition of certain brain tissues, the decaying cells being taken up by the venous circulation and carried back to the lungs, where, in contact with oxygen, the specific odor is developed. But as the peculiar odor could not be described so that one unfamiliar with it could detect it, some of the members thought it of little diagnostic value. But, when one comes to think of it, no odor of any kind can be described in words so that one unfamiliar with it can recognize it. Who, that never smelled a rose or a carnation or an apple blossom, or any one of a million sweet and fragrant odors, or as many unsavory ones, could recognize any odor? Only the trained eye can differentiate many diseases at sight, and so only the trained olfactory nerve can detect any disease by its odor. So that odors are only useful in diagnosis to the trained nosologist, and it is the training that makes any one skillful in diagnosis. The fact is that no one can be a good diagnostician until all his faculties are trained and cultivated to a high degree of acuteness. The eye, the touch, the ear, the olfactory and

the taste are all important factors in such study, and none of them have any right to be off on vacation when a close study is to be made, and enthroned over all of them must be the king of faculties, the reason, that takes the testimony of all the subordinate faculties and sifts and weighs and then enters the solemn judgment of the final human arbiter. So that Dr. Lindsey is right in setting a task to the olfactory, and training them on the scent of disease.

Cocaine a Wonderful Drug.

FAMILY DOCTOR:—I hear there is some kind of medicine that can be put in the eye and then the eye cut to pieces without pain. Do you know any such medicine? I do not believe the statement. M. J. Larned, Kas.

Yes, there is such a medicine, and it is a most wonderful drug, and one of the most useful and beneficent of all the medicinal substances known to man. It is known as Erythroxyton coca. It is obtained from the leaves of a shrub growing wild in Peru, Bolivia, Colombia, Brazil and the Argentine Republic.

When the Spaniards conquered the Incas of South America, they found the natives chewing the coca leaves, the use of which enabled them to undergo all kinds of hardships and privations to a remarkable degree. With them it was a divine gift from the Deity. It was almost their only medicine, as well as a talisman to ward off all evil. When Humboldt was exploring South America he found the natives chewing coca leaves, and says that as couriers and burden-bearers they performed most astonishing feats; that they could travel over the steep mountain sides faster than horses and could go without food and water and only a few hours sleep, for days, and sustain their strength to an incredible degree by the simple use of coca leaves as our people chew tobacco.

The hydrochlorate of coca is one of the very greatest blessings in surgery, and next to chloroform or ether it stands at the head of surgical drugs. But unlike them, it does not produce general anesthesia; but infinitely better than they, it produces the most perfect local anesthesia known. A few drops of it in the eye renders that most sensitive organ of the body perfectly insensible to pain, while the eye still retains its power of vision. Many a patient has had a splinter of steel or iron removed from the eye without a particle of pain and at the same time looked on the operation calmly with the same eye. Many a patient under its use has had a cataract removed from the eye and then suddenly looked out of that previously darkened window of the soul and beheld the operator, and all that sight and light could reveal to one with good vision. Eyes that have been accidentally burnt with lime or hot water or caustics may be relieved of the intense suffering in five to ten minutes by cocaine and the pain kept out until the eye healed. Inflamed eyes may be cured very promptly by it. Intense earache, likewise, can be almost instantly relieved by a few drops of cocaine. It acts with the same marvelous effect on all mucous surfaces—in the nose, the mouth and the throat, and when injected under the skin it puts the part to sleep so that a vast amount of what is called minor surgery can be performed without chloroform or ether, and even so great and formidable an operation as amputating a thigh has been done with cocaine injected into the limb in a circle at the point of amputation. Only yesterday, I was called to a patient with an immense tumor in the roof of the mouth. A little spray of cocaine thrown onto the growth and around it enabled me to cut it away without any pain at all. It is very useful in dentistry. Many a very tender mouth has been insensitized by it so that teeth could be cleaned and filed and otherwise repaired with little or no pain. Removing of ingrowing toe-nails, the lancing of boils and abscesses, removal of slivers from the flesh, the dressing of cuts, bruises, burns and a hundred other things may be accomplished nicely under cocaine. In cases of shock or great fatigue or exhaustion it is of immense value as a stimulant. Given internally it cures many painful conditions, especially neuralgic.

Every family ought to have a small vial of cocaine solution in the house. Then a cinder in the eye, an earache, a sore mouth or a tickling throat, could be at once relieved by applying a drop or two of the liquid to the painful spot. In cracked nipples, where every time the baby nurses the mother cries with pain, it is of the utmost service, applied four or five minutes and then washed off thoroughly before nursing the child. It has many other triumphs to its credit, too numerous to mention.

Over 75 per cent. of the young men who took the dairy course at the Iowa Agricultural college last winter have positions at from \$60 to \$80 a month, many of them getting house rent and butter and cream for the table besides. And then there were not nearly enough young men to fill the positions offered.

Get up a club for the FARMER.

The Horse.

A Milch Cow Race.

The latest thing in the way of racing is a milch cow race, as told in a telegram from Galveston, Tex., which says: "A milch cow race to the World's Fair will start from the town of Tyler, in eastern Texas, the home of Governor Hogg and the abiding place of numerous other Texas statesmen. Clyde Zeberg offers \$5,000 for the winner and \$1,000 for second place. All herds will be allowed to enter provided they are four years old or over. Applications will be received until July 13. Each person on entering a cow for the race will be furnished a two-wheeled gig, set of cow harness, one churn, one hundred pounds of meal, fifty pounds of bacon, ten pounds of coffee and cooking utensils with which to prepare his food. Drivers will be allowed to consume all the milk and butter they desire for their own personal wants en route. The cows are to be driven twelve hours a day, allowing one hour for dinner, and churning is to be permitted while traveling or at a stop. The cow arriving at the World's Fair first having fifty pounds of butter to her credit, made en route, will receive first money. The cow having the largest amount of butter to her credit, and arriving within one week of the winner, will receive second money. Drivers are not allowed to walk, but must ride in the gig provided for him. So far six entries have been made. The start will be made from the Tyler public square at 7 a. m., July 25."

Horse Marks.

The following from the *Spirit of the Times*, about horse marks, will enable many of our readers to call them by their right names:

- A white spot in the forehead is a star.
- A white face from eye to eye is a bald face.
- A white stripe in the face is a blaze.
- A stripe between the nostrils is a snip.
- A white eye is a glass eye.
- A horse has pasterns, not ankles, and there is no such joint as a hind knee or fore shoulder.
- White below the pastern joint is a white pastern. Above the pastern a white leg.
- White around the top of the hoof is a white coronet.
- A star, blaze or bald face can't be anywhere except on the face. A snip can't be anywhere except on the nose.

Horse Notes.

Maud S. 2:08 $\frac{1}{4}$, is training satisfactorily. Lord Clinton 2:10 $\frac{1}{4}$, was sold recently for \$4,000. Allerton will be bred to over 100 mares this season.

A exchange says that mares by Wedgewood are the coming brood mares.

The dates of the live stock exhibits at the World's Fair are from Monday, August 21, to September 9.

Bonnie Wilmore 2:14 $\frac{1}{2}$, the only trotter that ever took a heat from Nancy Hanks, is in excellent form this year, and will get a low mark.

There is a double-gaited mare at Independence, Ia., that trotted a mile in 2:31 and paced the same distance in 2:33, in one afternoon, recently.

Blondie, by Lemont, now holds the two-mile trotting record. He went the distance in 4:48 at Portland, Ore., recently, breaking the record half a second.

Last Saturday the pacer, Flying Jib, lowered his record from 2:05 $\frac{1}{4}$ to 2:05 $\frac{1}{2}$, at Saginaw, Mich. The track was muddy and about three seconds slow.

The three-year-old stallion stake at Lexington, October 7, will be worth \$10,000 to the winner. It is one of the most valuable trotting races of the year.

The pacer Saladin, by Sultan, now holds the pacing stallion race record of the world. In a race with Mascot 2:04, over the Kirkwood, Del., kite-track, July 4, he defeated that horse, going a mile in 2:05 $\frac{1}{4}$.

Land plaster is the best stable absorbent and deodorizer known, and can be profitably used in every stable. It is cheap and adds to the value of the manure. There is no stimulant to clover like it, and corn quickly responds to its application, especially in dry seasons.

After a long straining drive wash the horse's legs and rub them and wind carefully with woolen bandages. When a horse is thus cared for it will rarely be blemished or go lame. It is also a good plan to give a warm bran mash with eight or ten drops of aconite after a hard drive or if obliged to drive in a storm.

It used to be said that a black horse could not stand heat, and there are people who believe the nonsense even now, not pausing to think that the inhabitants of Africa can stand more heat than any people on earth and are black for that purpose. The same prejudice existed against white horses on account of the fabulous tradition that they could not stand the cold. Here again no

thought is given to the subject, or else they would certainly remember that the Polar bear and other Arctic animals are as white as the driven snow. The facts are that the color has not so much to do with a horse's constitution as some persons would have us believe. The powers of endurance may be just as great in a white horse as in a black, and in a black as that of any other color.

Jack Prince, a well-known wheelman, who claims to be the champion long-distance bicyclist of the world, was beaten at the State fair grounds track Saturday by two local horses in a twenty-mile relay race. The horses entered were Daisy D. 2:30, owned by Zack Ransdell, and a green trotter, Blackwood Bess, owned by Geo. W. Tanner. Prince rode the whole distance without stopping, and the horses changed at the end of every mile. The time for the distance was one hour three and one-half minutes. Prince gave up at the end of nineteen and a half miles and went that distance in one hour and two minutes. Daisy D. made the twentieth mile in 2:28 $\frac{1}{2}$. The race was for a purse of \$300, and 1,500 people witnessed it.

Publishers' Paragraphs.

The Great Northern Railway, operated under the style of Wilbur, Sioux Falls railway, Duluth, Watertown & Pacific railway, together with the Great Northern railway, forming the Great Northern railway system, recently celebrated the important event which has brought a great deal of favorable comment by publishers, as well as prominent financial men throughout the land. Their new route to the Pacific coast is completed, an accomplishment which speaks great ability on the part of President Hill.

Our Chicago manager reports a visit to the establishment of C. E. Ross, manufacturer of the World's Washer, Lincoln, Ill. The World's Washer seems to be gaining great favor, and Mr. Ross reports favorable progress in his business. From the large number of testimonials he shows it is evident the World's Washer possesses special merit. Mr. Ross enjoys a good reputation as a business man, and the World's Washer is giving the best of satisfaction wherever introduced. He will send a circular upon application, giving full explanation.

The *New England Magazine*, with the current issue for July, passes into the hands of Warren F. Kellogg, who has purchased the assets of the old company, and will continue the publication of the magazine, managing it himself from its new offices at 5 Park Square, Boston. Mr. Kellogg was formerly Treasurer of the *Boston Post*, under the old regime, when it stood for all that was highest in American journalism, and more recently he has been interested in different Boston magazines. Edwin D. Mead, the chief editor of the *New England* under the old stock company, and Walter Blackburn Harte, the managing editor, will be associated with Mr. Kellogg in his new enterprise. The July magazine is now on the news stands, and the August number—an especially strong one—will be out at the usual time.

MR. EDISON HATES A TELEPHONE.—"What makes you work?" I asked with real curiosity. "What impels you to this constant, tireless struggle? You have shown that you care comparatively nothing for the money it makes, and you have no particular enthusiasm in the attending fame." "I like it," he answered, after a moment of puzzled expression, and then he repeated his reply several times as if mine was a proposition that had not occurred to him before. "I like it. I don't know any other reason. You know some people like to collect stamps. Anything I have begun is always on my mind, and I am not easy while away from it until it is finished. And then I hate it." "Hate it?" I asked, struck by his emphatic tones. "Yes," he affirmed, "when it is all done and is a success, I can't bear the sight of it. I haven't used a telephone in ten years, and I would go out of my way any day to miss an incandescent light."—From C. D. Lanier's *Sketch of Thomas A. Edison*, in the *July Review of Reviews*.

The *New York Press* proposes to send to the World's Fair as its guests fifty Union veterans, members of regular Grand Army posts, who are to be selected by the readers of *The Sunday Press*. This proposition is made as an evidence of the esteem and gratitude in which the *Press* holds the men who imperiled their own lives to save this nation. Each of the chosen veterans will be the guest of the *Press* from the moment the train leaves New York until its return, and the journey will be timed to include a full week's sojourn in Chicago, with all expenses paid, including daily entrance to the grounds of the Exposition. All G. A. R. veterans in good standing are eligible. They may come from any town, city, State or Territory over which the stars and stripes proclaim its government. The selection of the fifty favorites will be made on the grounds of popularity, their popularity to be voted by ballots printed in every issue of *The Sunday Press*.

The Home Circle.

To Correspondents.

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

Secrets.

July roses wet with rain
Tap against the window-pane;
There is something they would seek,
Had they voices and could speak.
Silence seals their crimson lips,
And the dull rain drops and drips.

Th' other side the streaming glass
Stands a little sad-eyed lass;
There is something she would seek,
But a maiden may not speak—
Silence seals her longing lips,
And the dull rain drops and drips.

And salt tears in showers stain
Her side of the window-pane;
And the crimson roses grow
Pale as dreams dreamt long ago;
(Hearts may break behind sealed lips),
And the dull rain drops and drips.

The Cricket.

O, to be a cricket,
That's the thing!
To scurry in the grass
And to have one's fling!
And it's O, to be a cricket
In the warm thistle-thicket,
Where the sun-winds pass,
Winds a-wing,
And the bumble-bees hang humming,
Hum and swing,
And the honey-drops are coming.

It's to be a summer rover,
That can see a sweet, and pick it
With the sting!
Never mind the sting!

And it's O, to be a cricket
In the clover!
A gay summer rover
In the warm thistle-thicket,
Where the honey-drops are coming,
Where the bumble-bees hang humming—
That's the thing! —*Cosmopolitan.*

A Day in the Woods.

A mocking bird, sweet-singing on a spray
Of dew blossoms lightly shaken down;
A river running by the brushwood brown,
Its green banks drifting dreamily away,
And the sun centered in the splendid day!
Far off, faint echoes of a noisy town,
And hills that wear a blue and golden crown,
And fields of corn, and meadows sweet with May!

And then—the bells of twilight—restful, sweet!
A lulling murmur from the languid rills—
A gray star glimmering in the blended blue!
And my heart heaving with a happier beat,
Answering the calling of the whip-poor-wills
That time my footsteps home to love and you!

MARVELS OF MIGHTY LONDON.

London's area is larger than New York, Paris and Berlin put together, an area which may be represented by a circle of thirty miles in diameter. Think of its 30,000 streets, which, if put end to end, would reach from London to St. Petersburg, yet some thirty miles of new streets are laid out yearly. Imagine its thousands of miles of sewers of glazed white brick, all as carefully mapped out as the streets themselves. Consider its 70,000 gas-jets—to efficiently replace which by electricity would cost £12,000,000. If any one were to undertake to walk one way through all the streets of London he would be obliged to go a distance of as far as it is across from New York to San Francisco. Walking at the rate of twenty miles a day it would take one some years.

A stranger is not so much struck by London's splendid and imposing appearance as by its immensity. In every direction there seems to be no end to the town. Its population is greater than that of many a kingdom. It has been said there are more Scotsmen in London than in Edinburgh, more Irishmen than in Dublin and more Jews than in Palestine, with foreigners from all parts of the world. Yet there are so many Englishmen in the capital that one is not likely to notice the people of other nations. Its thoroughfares are the most crowded of any city in Europe. Ten thousand new houses are annually added to the 700,000 dwellings which shelter its population of 5,000,000—that is, as many houses as there are people in any other town or city in the kingdom. Sixty miles of shops open every Sunday, and there are 1,400 places of worship to counteract the evil effects of some 12,000 public houses.

The population of this mighty Babylon increases at the rate of 200 souls a day. In some districts the number of people has increased by nearly 100 per cent. within the last ten years. Who can realize the multitudinous life of London? Every seventh person in England and Wales is a Londoner. A birth takes place in London every three minutes and a death every five minutes; recently the births registered twice the number of deaths. In one year there have been nearly 37,000 marriages in London. Its foreign population has been roughly estimated at well on to 300,000, yet there are only 14,000 police and 400 permanent police detectives to control this multitude.

It is calculated that there are fully 70,000

Germans living in London at the present time, and that over 50 per cent. of the foreigners in England take up their abode in the metropolis. Each day some 10,000 strangers enter London, which is infested by 120,000 paupers. Over 400 newspapers of all descriptions are published in London, two of which are printed in the Spanish language. It is calculated that every week day morning 1,000 miles of London newspapers are given to the world by means of the rotary press. The combined circulation of these papers is over 30,000,000 copies weekly; the expenditure for news in the capital alone would amount to at least £12,000,000 a day.

Ten million letters are delivered weekly in London by over 4,000 postmen, who walk together a distance equal to twice the circumference of the globe. Last year 10,000,000 postal articles passed through the general postoffice a day at Christmas time, a total which has never before been reached in this or any other country. There are twelve postal deliveries a day in the E. C. district. Londoners write more than 57,000 letters a day, requiring thirty gallons of ink, and each inhabitant receives on an average two letters a week. There are said to be twice as many letters delivered yearly in the metropolis as in Ireland, Wales and Scotland together in the same time.

The number of telegraph messages received in London last year was 6,000,000—a third of the telegrams daily dispatched in England being sent from London offices; 10,000 miles of overhead telegraph wires almost shut out the smoky canopy over some of the London streets, while 34,000 miles of similar wires worm their way underground in company with the 3,200 miles of gas pipes and 4,500 miles of water mains. There are well on to 14,000 street hydrants in London. Twelve per cent. of the water supply is drawn from artesian wells, and in one month Londoners obtained considerably over 87,000,000 gallons of water daily from their famous river.

London has the distinction of being the first city to use coal. Its use was shortly after forbidden, and one man was actually executed for violating this law. About 6,000,000 tons of coal are required to produce the gas consumed in London every year. Four and one-half million pounds are paid yearly for gas, the gas companies making a profit of £1,500,000. The profits of the water companies last year were over £1,000,000. We are told that about 150,000,000 gallons of water are used every day by Londoners, and that 45 per cent. of the water used for domestic purposes is wasted. It took 21,000,000 gallons of water to extinguish the 2,300 fires in the capital last year; this gives an average of forty-four fires a week, the greatest number of which occur on Saturdays, the days on which the most crimes are perpetrated.—*Tid-Bits.*

Taught Him a Lesson.

It was just a little lesson, that was all, but it went right to the spot. He stopped a moment on his way home to look in a florist's window, and the florist, who saw him, asked him inside to see something extra fine.

"You don't buy any more flowers now!" said the florist.

"No," was the response, given good-naturedly, though it was brief.

"And it used to be, a year ago or more, that roses and violets and carnations and all sorts were a great attraction to you?"

"Yes; I had a sweetheart then," and the man blushed and laughed.

"You used to take her a flower every time you went to see her, didn't you?" pursued the inquisitive, kindly old florist.

"Yes."

"And they didn't cost very much as a rule, did they?"

"Oh, no; but that didn't make any difference to her. If I brought them fresh and fragrant, that was enough."

"Why don't you take them to her now? Did she choose another in your stead?" and the florist's voice was sympathetic.

"Oh, no; I married her a year ago."

The florist waited a moment as if thinking.

"And you don't love her now?" he asked cautiously, as if treading on thin ice.

"Of course. We are very happy. But you know the flower business doesn't go any more."

"Did she ever say so?" asked the florist.

"Well-um-er-no, I can't say that she ever did."

"Have you ever asked her about it?"

"No. I never happened to think about it. Busy, you know, with all sorts of things, so much more practical."

The florist didn't answer. He went to a pot of roses and violets, and taking a handful, he handed them over to his late customer.

"There," he said, "I give them to you in remembrance of old times. You might take them to your wife, and if she doesn't like them, you bring them back to me."

But they never came back.—*Detroit Free Press.*

25 cents for a box of Beecham's Pills. Tasteless.



Harvesting is hard work. It makes a man perspire, but when evening comes, after resting and cooling off, a tub of clear water and a cake of Ivory Soap will make him feel like new. The bath will open the skin pores, and fit him for a good night's sleep. Ivory Soap costs less than medicine and will do more to keep the man in good working order.

R. 6.

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Pensioners of the Revolution.

Upon the death of Mrs. Anna Maria Young, which occurred at Easton, Pa., on Wednesday, the last revolutionary widow who drew a pension in this district was stricken from the lists. Michael Fritz, the last survivor of the war of 1812, in this district, died about a year ago at his home near in Reading. There are still several widows of the survivors of the war of 1812 drawing pensions from the Philadelphia office, and quite a number of survivors of the Mexican war.

The theory that pensions prolong life by the removal of the constant worry to which aged persons of the poorer classes are subject, is borne out by the remarkable vitality of the vast army of pensioners. There are still fifteen widows of revolutionary soldiers drawing pensions throughout the country. Mrs. Young, who died on Wednesday, was the oldest, having been but a few months less than 100. She was the widow of the late Capt. Jacob Young, whom she married when she was 22. Despite her tender age Capt. Young was her third husband. The gallant captain survived six months of married life. Mrs. Young leaves thirty great-grandchildren and a large number of great-great-grandchildren, all by her first and second husbands.

When one considers the great disparity in the ages of the surviving revolutionary widows and their late husbands, it looks very much as though some of the marriages had been purely commercial transactions. The revolutionary war was over in 1783. Take the case of one of these dames, who is now 75, and who married her husband when she was 25 years old. He could scarcely have been less than 20 when the war was over. This would make the mar-

riage take place in 1848. On the theory that he was 20 when the war was over, and she was 25 when she married him, he must have been 80 at that interesting period of his life. Then, when he died, shortly after, she merely exchanged a husband for a snug pension.—*Philadelphia Record.*

A Lady's Duel by Proxy.

A rather curious institution is arising in Paris, that of duelling associates of lady journalists. On Saturday, the lady known as Mme. Severine, who was intimately connected as a friend, literary helper and disciple of M. Jules Valles, contributed an article to the *Journal* at which M. Massard, a socialist, took offense. He called on M. Xau, the editor, to ask for satisfaction. It being impossible to call Mme. Severine out, the answer was that, in virtue of a fiction adopted for the purpose of releasing M. Xau from all responsibility in such cases, Mme. Severine was supposed to be the joint author with M. Labruyere of all her articles. He had agreed to be answerable for any offense she might give. M. Massard then sent seconds to M. Labruyere, who, admitting that he was the fighting partner of the lady, referred him to a couple of male friends. The duel, which has taken place, was a fierce affair. It was fought with foils. In the second round M. Labruyere received a cut on the chin, but the doctors saying it did not signify, there were five other rounds. The combat was ended by M. Massard running his foil through the forearm of Labruyere. Honor was then declared satisfied, and M. Labruyere was driven back to Paris.—*London News.*

Oscllator Threshers, Horse Powers, Engines. JOHN S. DAVIS' SONS, Davenport, Iowa.

27 Per Cent. Stronger.

The amusing advertisement of a rival Baking Powder, claiming that "it is 27 per cent. stronger than any other," must refer to its smell (as it is a well known ammonia powder).

Dr. Price's Cream Baking Powder

Is a pure cream of tartar powder, brought to the highest degree of strength and perfection.

Truly the ideal Baking Powder.

Its superiority over every other can be clearly shown by any fairly conducted competitive test, whether made in the laboratory or kitchen.

The Young Folks.

The Old Clock.

Half way up the stairs it stands,
And points and beckons with its hands,
From its case of massive oak
Like a monk, who under his cloak,
Crosses himself, and sighs, alas!
With sorrowful voice to all who pass—
"Forever, never!
Never, Forever!" —Longfellow.

In the broad staircase, dark and dim,
Where chequer'd sunbeams fall,
The tall clock standeth gaunt and grim,
Like sentry on a castle wall;
The house is old, the roof is gray
O'er which wisteria tendrils climb,
And over all is writ decay
By the effacing hand of Time.
The porch that slopes before the door
Wears many a mottled weather-stain,
While through the broken windows pour
The winter snows, the summer rain.
The honeysuckle once that hung,
Its coral tassels o'er the eaves
Is withered, and the vines that flung
Their purple clusters and green leaves
O'er the cross'd trellis now lie dead
With all their vernal chaple shed,
And weeds have chok'd the garden's bloom
Where once the roses shed perfume.
Still in the spacious darkened hall
The old clock leaneth at the wall,
As gray and ghost-like as of old,
When slow the passing hours it knoll'd,
Filling my tim'rous soul with dread
When crossing, with a frightened tread,
The space, with evening shadows spread.

Thro' many a fleeting year, alas!
Time's rapid wings have o'er it swept;
A dusty veil obscures its glass.
Gray cobwebs o'er its frame have crept;
Its iron weight sinks low in dust,
Its larum bells are brown with rust;
No more its pulses may repeat
Tim'rous progress with a steady beat,
No longer doth its mellow chime
Count slow the rosary beads of time;
But silent stands it in the gloom
An apparition of the tomb!

How oft in childhood, when the balm
Of sleep refused my soul to charm,
When in my feverish crib I lay,
Impatient for the dawn of day,
I've listened to thy measur'd stroke
That mark'd the hours 'till morning broke!
How with thy measured tick would blend
All voices of the lonesome night:
The sighing breeze that would bend
The elm trees and the willows light;
The chanting of the whip-poor-will,
The hidden crickets chirping shrill,
The dismal croakings loud and harsh
From reedy pool and sedgy mars.

Gazing upon thy faded face,
On dusty wheel and rusted chain,
I am reminded of the race
That ne'er may walk the world again;
The eyes that watched thee year by year
Have ceas'd to note the lapse of time,
The hearts that beat beneath thee here
Will throb no more to earthly chime!
—Isaac McLellan.

I. H. S.

No doubt many of our young people, as well as the older ones, have noticed the mystical letters at the head of this article either in the Catholic, Episcopalian, or even in other Protestant churches. Please do not understand that the word *Catholic* in the preceding sentence is intended to be placed in the class indicated by the word *Protestant*.

You have often seen a pretty hymn-book or a beautiful book-mark in the Bible at the church, with I. H. S. handsomely displayed, and no doubt have wondered what those letters were intended to represent. You asked papa, mamma or Uncle John for information, and they have told you several things about them; for instance, that the letters indicated "I Have Suffered," and referred to the sufferings of the Savior on the cross; this is what mamma told you. Papa had been to the academy when he was a young man, and had studied Latin a bit, so he told you that the letters stood for "Jesus Hominum Salvator," which means "Jesus of mankind savior," or, as we would twist it into English, "Jesus, savior of mankind."

Now, Uncle John is a good Free Mason or Odd Fellow, or something, and he told you that the letters represented the Latin words "In Hoc Signo," and referred to the fabulously miraculous vision accorded to the murderously Christian Emperor Constantine, who, according to the story, saw a huge cross in the sky with big letters thereon as follows: "In Hoc Signo Vincas," which in English would read: "By this sign thou shalt conquer."

Now, these are all pretty fair explanations, and under ordinary every-day circumstances would answer very well. You will notice, however, that two of them are Latin. The Christian church was Greek before it came to Latin Rome. Of course, you all know that the New Testament was nearly or quite all written, at first, in Greek. St. Peter was the one whom Christ designated as the head of the church. "Thou art Peter, and upon this rock I will build my church."—Matt. xvi, 18.

Peter, in his early life, had been a fisherman and made his living by catching fish. We read in the New Testament that Christ told him that he would make him a fisher of men. When St. Peter became the recognized head of Christ's church (if such was a fact), he adopted as his seal of office a fish. And the Popes of Rome to this day affix the "Fisherman's Seal" to all official documents which are sent out from the Vatican. Since the thirteenth century this

fisherman's seal has been a ring with a picture of St. Peter fishing, engraved on the stone setting.

When the early Christians were persecuted by the religious Emperors of the East and West, and had to be in danger every day of being arrested and fed to lions, tigers, etc., they were obliged to conceal their places of worship or even their ordinary gathering places. In order that the initiated might know whom to trust or where to go to worship, these places were marked with the figure of a fish. If you were to go to the city of Rome to-day and visit the catacombs, you would be shown this symbol engraved in the rock at various places.

But what has this to do with the letters I. H. S., you ask? Well, just this: The Greek word for fish is *Ichthus*, and that word was used to guide those who could read, while the figure of a fish would prove intelligible to all, whether they could read or not. Now the Greek word *I-ch-th-u-s*, when divided as here indicated, represented the initials of our Lord's title, viz.: "Jesus Christou Theou Utos Sotor," and this being translated into English would read: "Jesus Christ, Son of God, Savior."

In the Greek alphabet one letter represents what in our alphabet requires two letters, viz., "CH." Also the same with reference to the two letters of our alphabet "TH," so, that taking the initial letters of the Lord's title, we would have "I-ch-th-u-s." St. Peter's seal and the initials of the above title then were the same, and as the early Christians became familiar with the sign, instead of writing the word "Ichthus" in full, they abbreviated it—using the first, third and last letters. The Greek "I," and also letter "S" are very similar to the same letters in our alphabet, and the letter of that alphabet which represents the sound of "th" appears much like our letter "H," though oval in form and closed at the top and bottom. So that the abbreviated "Ichthus" became "I. H. S." Their churches and worshiping places were thus marked, and down to the present time these same mystical letters are found on the furnishings of modern churches.

If you were to ask the minister of your church to show you, in his Greek Testament, the name of Jesus printed in Greek capital letters you would find it like this: "IHOUOUS." The second letter, which looks like our "H," is in reality the Greek "E," so that the name would be pronounced Iesus. In writing the name they gradually became accustomed to abbreviate it, using only the first three letters "IHS," so that the name of the seal of the church, the initials of our Lord's title and the name of Jesus, all were written in the mysterious letters "I. H. S.," which were intended to carry the idea of "three in one." While these letters may represent to any one any of the many interpretations given them, yet the above explanation tells their actual origin.

Climbing and Swimming Rabbits.

On the continent of Australia the rabbits, by force of circumstances, are obliged to modify their mode of life. These animals are often observed to climb trees in search of food when they cannot obtain it on the ground. At a recent session of the Zoological society, of London, Mr. Tegetmeier exhibited the forepaws of one of these Australian rabbits, which were seen to be adapted to this new mode of locomotion.

It is found, in the first place, that they are more slender than those of the English wild rabbit. Their color is paler and the spots are dark. Besides, their claws are sharper and slenderer.

In the Australian rabbits differences have also been observed in the manner of raising their young. Thus in certain localities we find their ordinary seats, but in others the litter is placed upon the ground, without any covering. In summer they sometimes enter the water, with only their heads projecting above the surface. When they are pursued, during their migrations, they swim exceedingly well and cross the wide rivers with ease.—*Scientific American*.

A Clever Spaniel.

A correspondent writing from Kimberley, South Africa, relates an instance of remarkable intelligence in a spaniel he used for retrieving. I was shooting wild duck, he says, on the banks of the Dry Hartz river, which is more like an elongated bog than a river, and you can cross it nearly dry shod at places. It was in the evening, during the flight of ducks up the river. I shot one or two, and the dog scrambled straight across the river and brought one to me, but on my subsequently knocking down half a dozen more, one after another, the dog went across but did not return. I heard him splashing about, and he appeared to go on the land on the other side. When I had finished shooting I called the dog, and, as he did not come, I started to walk round on a dryish bit of ground to the other side. When half way, I met Dash (the spaniel) coming with a duck in his mouth. I took the bird from him, and, as soon as I did this, he whisked his tail in a

pleased manner, and turned back in the direction he had come. I followed quickly, and he led me to a pile of five ducks he had collected in one spot, evidently so that he would know where to find them again and bring them to me one by one. If this is not very nearly allied to human intelligence, I do not know what is. He had killed the winged ones, so that they would not run away, which was a very unusual thing for him to do, as he invariably brings winged birds alive to me. Either he did not relish coming over the boggy ground laden with duck, or else the birds were falling too fast to give him time, and he adopted this expedient to save all the ducks and himself trouble.—*London Field*.

The Ocean Flyers' Coal Bills.

A paragraph has been going the rounds of our exchanges to the effect that an "ocean racer" burns about \$13,000 worth of coal every trip. Very little calculation will show how extravagant this statement is. The American liner New York consumes about 328 tons per day, the White Star liner Teutonic about 316 tons, and the Cunarder Etruria 330 tons per day at full speed. It has been stated that the Etruria, at a speed of eighteen knots, burns only 275 tons per day. This consumption would send the greyhounds across with a total use of about 2,000 tons in round figures. The price of coal in New York is considerably less than \$4 per ton, and in Liverpool it is cheaper than here, but even at outside figures the cost of fuel per trip, it will be seen, does not exceed \$8,000, and we would not be surprised to find the actual average price paid to be less than \$6,000.

The fuel bills of such ships are, of course, far in excess of those of the average ocean steamer. Triple-expansion engines and improved machinery of the present day have made it possible to so economize coal that the consumption per indicated horse-power per hour has been reduced in ratio to much less than two pounds, as against nine pounds in 1836 and five and one-half pounds in 1840. The Teutonic's average is quoted at 1.6 pounds per hour. The majority of ocean steamers of ordinary size traveling at an easy gait think a ton of coal per hour is quite extravagant enough for their propulsion. Our big new warship Iowa will have a bunker capacity for only 2,000 tons of coal to speed her at sixteen knots, the Indiana's bunker capacity will be 1,800 tons, the 3,000-ton cruiser Cincinnati's bunker capacity will be only 556 tons, and the crack Japanese ship Yoshino, with a speed of twenty-three knots, has bunkers to hold only 1,000 tons. It is doubtful if the bunkers of any steamer afloat would hold \$13,000 worth of coal if bought in New York.—*Marine Journal*.

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In 1880 Atchison, Topeka & Santa Fe stock sold at 152½. On July 11, 1893, it sold at 19½.

The financial cloud hangs heaviest over the eastern part of the country. On Monday and Tuesday of this week all drafts drawn on points east of Chicago were refused at Kansas City.

The Citizens' bank, of Armourdale, Mo., last Monday found that a "run" was almost certain. The officers decided to pay only 50 per cent. of deposits. The effect was to stop the run.

The Kansas coal miners' strike is still unsettled. The mine operators are reported to be preparing to introduce non-union workmen and to defend them against danger of violence from the strikers.

Prophecy as to future prices is so uncertain of fulfillment that the wise man avoids it. But it is safe to say that all conditions point to better prices on the average for the present than for the last wheat crop and to a heavy advance in the best-fed beef steers over present prices.

In discussing the financial situation, Henry Clews, of Wall street, says: "The most stubborn difficulty is the extraordinary scarcity of currency which keeps the reserves of the banks below the legal minimum." Indeed! And money is scarce in Wall street, is it? Well, now, perhaps the rest of the country has concluded to take care of a larger proportion of the currency than heretofore. But "we told you so."

A dispatch from Guthrie claims that the Cherokee Strip will be opened not later than September 10. It was hoped that some plan would be devised whereby the race for claims and the contentions, violence and litigation as to priority of occupancy might be avoided. Every plan suggested has met with a legal objection which could not be overcome, and, as heretofore, the men who have the swiftest horses will get the best claims.

The financial institutions of Kansas still stand at the head of the list. Many of the banks are in the very unusual position of being prepared to withstand the most formidable "run" that could be made upon them and pay every depositor in full. The calamities are to the States on either side of us. In Colorado several large banks have been compelled to close their doors, at Kansas City there is at this writing great excitement and several banks have closed, while Nebraska on the north was found in a less favorable position than the Sunflower State.

IMPROVEMENT BY SELECTION.

The practicability of improving plants by seed selection has long been well understood by scientific propagators, and this method of developing superior varieties has been used both by station experimenters and by practical cultivators. The method, as is well known, has been simply to select for propagation seeds from plants characterized by a high degree of excellence. The value of some cultivated plants has by this method been more than doubled. In the case of other plants, a better adaptation to the conditions under which it is desired to grow them has been secured, thus rendering the crop more secure against vicissitudes. The limitations of improvements in these directions have not yet been touched in the case of any plant, with the possible exception of the sugar beet, which was one of the first taken in hand by scientific experimenters.

Even after the practicability of improvement by seed selection had been indisputably established, it was doubted—and is questioned to-day—whether plants which are propagated by cuttings or grafts are susceptible of improvement by the selection of propagating stock with reference to promoting desirable qualities.

This question has been taken in hand in a most intelligent way during the last three years by Mr. Hubert A. Edson, chemist of the Calumet sugar plantation in Louisiana.

It may be well to remind the reader that the sugar cane of Louisiana bears no seed, but is propagated by planting canes. These grow from the joints. Mr. Edson first addressed his efforts to answer the question whether there is a difference in canes produced from cuttings of varying richness in sugar. To obtain a conclusive answer to this question, selections were made of canes very rich and of others very poor in sugar, while those of average richness were disregarded. Those selected were planted and cultivated under conditions as nearly identical as possible. The canes produced from these two kinds of "seed canes"—as they are called in Louisiana—were carefully analyzed, and it was found that those from the "seed" which was rich in sugar contained more sugar and purer juice than those from the seed which was poor in sugar. The experiments in 1892 showed like results. Mr. Edson has averaged his results and calculates that the improvement thus obtained would give 7.2 pounds of sugar per ton as an increase in planting rich cane instead of the average cane, and that this, for a factory grinding 400 tons of cane per day, would add 2,880 pounds of sugar to the day's output, and on a crop of 25,000 tons give 180,000 additional pounds of sugar, worth say \$9,000, or the value of 2,000 tons of cane.

This would be the result of one year's selection and from the increased sucrose alone, the element of higher purity not being considered in the calculation. If the increased purity be considered and estimating from an average, the increase per ton of cane from the result of this seed cane selection would be 10.8 pounds of sugar per ton, or on a 25,000 tons crop 270,000 pounds of sugar, enough to pay the entire sugar house labor for manufacturing the crop.

The analyses made by Mr. Edson of these canes were made during several weeks, and indicate that the result is not of an early forced maturity, there being as marked a difference in the later analyses as in the earlier, and there seems thus to have been definitely proven that under the same conditions for each kind of seed cane, no matter what these conditions may be, a rich cane will produce a better progeny than a poor one.

Mr. Edson is one of the most painstaking and conscientious men now working in the experimental field. He has, by the work accomplished, pointed to immense possibilities heretofore considered doubtful.

It has been mentioned in these columns that the Ben Davis apple is nearly perfect in all respects except flavor. But all Ben Davis apples have not the same flavor. Some are indeed

much richer than others. Why may not the selection of grafts from the particular tree, limb, or even twig, which bore a well-flavored Ben Davis apple be expected to produce a tree bearing Ben Davis apples of improved flavor. By a few repetitions of the process we should have a strain of Ben Davis apples having in the tree the vigorous habit of growth, the early and profuse bearing, and in the fruit the large size, fine color and good keeping quality of the old Ben Davis, and in addition a flavor now unknown to this apple. So, also, we should be able to produce a strain of Maiden's Blush which, in addition to its other almost perfect qualities, will be a good keeper. Grimes' Golden should be so treated by selection as to be a common instead of a rare apple upon the market, where it always commands a ready sale at fancy prices.

This kind of improvement may be extended to all fruits and plants propagated by cuttings. While results will, in some cases, be slow, they are almost sure, and, while the present generation may receive little of the benefit, the next will bless the names of the patient workers who make the improvements.

THEY SWINDLED BANKERS.

We have had occasion frequently to warn farmers against smooth swindlers who, by various devices, sought to secure the farmer's cash or note without adequate or even valuable consideration in return. So often have the successes of these swindlers been told that an impression has prevailed that farmers are not only guys but the only prey of the barefaced swindler.

Of late, however, these rogues have turned their attention quite as successfully to bankers. Only a few weeks ago a sleek party came to Topeka and at several banks bought small drafts on Kansas City banks. He then proceeded to raise them to several times the original amounts, signed his name on the back and wrote under the signature a certificate that this signature was genuine. To this certificate he forged the name of the cashier of the bank at which the draft was purchased. These raised drafts were presented the next day at the banks in Kansas City and paid to the amount to which they had been raised. Of course his work was neatly done and his forgeries were skillfully executed. The losses fell upon the Kansas City banks.

A case is just reported from Boston in which a smooth swindle has been successfully worked on banks in surrounding places. Two bogus concerns known respectively as "White, Newton & Stockbridge, bankers and commercial brokers," and "C. H. Thompson & Co., commission merchants," were engaged in the swindle. It was their plan to send letters from their establishment on Chatham street, under the name of C. H. Thompson & Co., to the banks, with the representation that an agent from their house might call at the bank to which the letter was addressed and present a check for a few hundred dollars. It was stated in the letter that if this was done it would be all right to give him the cash, as Thompson & Co. said it had a large account with White, Newton & Stockbridge, bankers. To substantiate this claim they enclosed a certificate with the bankers, showing that they were all secure. They were printed on letter sheets bearing the heads of the two alleged firms. Inclosed with the letters would be a fac simile of the signature of the agent who would call, both in writing and a stamp impression made from a stamp that he was supposed to carry. All this was done so nicely that in many cases the swindle worked. A raid was made on the concern by the Boston police and some of the swindlers were caught, while others escaped by jumping from second-story windows, etc.

An English writer on the "British Empire" says: "A perfect cure for all our present troubles would be to give all leading politicians fixity of tenure without any rent on moderate sized farms in Ireland." He adds that he would cut off from these gentlemen all other sources of income, and rusticate them for six months.

KANSAS EXPERIMENT STATION REPORT.

The Fifth Annual Report of the Kansas Station reports upon the work accomplished during the year and announces some interesting experiments yet in progress.

In the Chemical Department, other work not yet reported upon includes an inquiry into the effects of certain foods upon the quantity and composition of milk, an investigation of the chemical changes that take place in the silo, the composition of soy beans preserved dry and in the silo, the analysis of feeding stuffs, and the nitrogen compounds of rain water.

Horticultural Department.—Extended experiments with different insecticides and methods for application were planned for the destruction of the cabbage worm, and important data secured. As the trials are partially inconclusive, through unfavorable weather, the publication of the results is deferred until after a repetition of some of the details. Studies of the grape-leaf hopper were made, and contrivances and methods looking to its destruction were put into operation, with favorable results.

In the garden, the matters under trial included, incidentally, variety tests of the cabbage, sweet corn, beans, peas and tomatoes, and, especially, culture methods, the effect of various fertilizers, and the influence upon production of repeated or deferred removal of the fruit. The lists of small fruits on trial have been increased by the addition of many sorts not before on the trial grounds, and cultural tests have been provided for, especially among strawberries, by the extension of the plantations.

As bearing upon the still-discussed question of the value of certain methods of working the apple, a large series of grafts were made according to the following scheme: Whip grafts, in lots of 100, with stocks and cions as described; the cions in lots I, II and III being, in each case, two feet long, one foot long, and six inches long, respectively, and the entire lot being repeated throughout with each of the four varieties—Ben Davis, Winesap, Maiden's Blush and Missouri Pippin.

A—Whole root, graft above crown; cion I, II, III.
AA—Whole root, graft below crown; cion I, II, III.
B—Root five inches long, graft above crown; cion I, II, III.
BB—Root five inches long, graft below crown; cion I, II, III.
C—Root two and one-half inches long, graft above crown; cion I, II, III.
CC—Root two and one-half inches long, graft below crown; cion I, II, III.
D—Piece roots, two and one-half inches long, small; cion I, II, III.
E—Piece roots, one and one-fourth inches long, standard size; cion I, II, III.
F—Piece roots, one and one-fourth inches long, small; cion III.

These will be treated with uniformity, and future comparisons will be published.

Farmer Department.—Experiments with oats seeding on spring-plowed, fall-plowed and unplowed land; treating oats with hot water for smut; single variety vs. a mixture of varieties; amount of seed that should be sown to the acre to give best yields; methods of seeding oats; the effects of light and heavy seed oats; stage of ripeness at which to cut oats for seed; time of harvesting oats; varieties of oats.

Experiments with Corn.—Results of using butt, middle and tip kernels for seed; distance at which to plant corn for ensilage; distance at which to plant corn for grain and fodder; frequency of cultivation of corn; deep and shallow culture of corn; listed and surface-plowed corn; large and small kernels for seed; cutting corn at different stages of maturity; effect of removing tassels from corn; test of varieties of corn.

Experiments with Forage Plants.—Distance at which to plant Red Kaffir corn for seed and fodder; culture of soy beans for hay; culture of soy beans for seed.

Feeding Experiments are in progress with twenty steers, which are fed essentially in the same manner as the steers fed last winter and reported upon in Bulletin 34; also feeding experiments with the soy bean, to ascertain its value, when fed at the various stages of growth, for the production of milk.

Veterinary Department.—Other work, not as yet reported upon in the

bulletin, is as follows: The collection of material and the preliminary work for the investigation of the so-called "cornstalk" disease, which it is hoped to complete as soon as outbreaks of the disease occur which can be investigated. The investigation of *Actinomyces bovis*, or lump-jaw, is being continued, with a view to determine, if possible, the life history of the organism which causes the disease. Some work has also been done to determine whether fistulous withers in horses is caused, in some cases, by germs. An effort is also being made to determine how long the spermatozoa of stallions will retain their activity outside of the animal body, as this has a very important bearing upon the artificial impregnation of mares, especially barren mares.

Botanical Department.—The work carried on by the Botanical department, none of which has been published, is as follows: During the year, notes were taken on the rusts of grain, including the germination of the spores in various chemicals, the wintering of the fungus, the distribution in the State, and the effect of spraying with fungicides. The results will appear in a forthcoming bulletin. A large number of experiments were tried to determine the effect of fungicides upon the germinating power of corn. Observations have been recorded concerning our weeds, especially their germination and the character of their seedlings.

ALFALFA IN CROP ROTATION.

Most Kansas farmers look upon their alfalfa fields as little less than permanent institutions, to be pastured or mowed as long as the return is profitable, and after that point is passed, possibly plowed up and planted to some other crop, the selection of which is in no way influenced by its fitness to follow alfalfa. In the pursuit of this policy a great deal of the possible profit from the culture of alfalfa is lost. No other crop, with the possible exception of red clover, is as valuable a fertilizer of land as alfalfa. In common with all leguminous plants, it has the power of extracting nitrogen from the air and storing it in the soil for the benefit of future generations of plant growth, and it has also the advantage, peculiar to itself, of penetrating to the deeper layers of the soil and bringing up from the depths elements of fertility which are out of the reach of most plants.

Where alfalfa is allowed to succeed itself year after year, a large proportion of the benefit which might be derived from its power to enrich the soil is lost. Alfalfa itself has little use for the atmospheric nitrogen which it stores in the soil, or for the surplus of ash elements which it draws from the subsoil, for it can gather more from the same sources as they are needed. Unless alfalfa is soon followed by crops which need and can make use of the fertility which it has rendered available, this fertility is in a great measure wasted.

The only method of growing alfalfa so that the most of benefit may be derived from it is to make it part of a rotation, just as red clover is used where it is a possible crop. A non-leguminous crop following a few seasons' growth of alfalfa will make use of the fertility gathered, to the marked profit of the proprietor.

In Colorado, where alfalfa is grown much more extensively than in this State, it is the common practice of farmers to grow it in rotation with other crops. Few alfalfa fields there stand more than four or five years, and it may be observed that as a usual thing the farmers who do grow alfalfa on the same land without any breaks are of the same general class as the Kansas farmers who crop their land to wheat successively for ten or a dozen years. Colorado farmers are firmly convinced by long experience and repeated trials that it pays much better to break up the alfalfa fields every few years than it does to allow them to stand. One of the most extensive and successful alfalfa growers of Arapahoe county was asked recently: "Can you afford to plow up your alfalfa fields after getting the crops of but two seasons from them? Does not the heavy expense of seeding, involving the al-

most total loss of the use of the land for a year, make it necessary that you should allow it to remain in alfalfa longer than two years to make it profitable?" The reply was: "We certainly can not afford to allow alfalfa to stand much longer than two seasons. We must have land on which to sow oats and plant corn and potatoes, and we have found that there is no other half so good as alfalfa sod. It seems almost too bad to plow alfalfa under so soon after it has cost us a year's time to get it established, but really it is the best thing that we can do. We lose, perhaps, \$10 an acre through not having any return from the land during the season the alfalfa is sown, but the same amount expended in manuring would not benefit succeeding crops nearly so much as growing them on alfalfa sod, so we feel justified in turning under the alfalfa and seeding other fields."

There is not a crop which will not make good and profitable use of the fertility stored by alfalfa, providing it is properly handled. It would not be the thing to turn under alfalfa in September and October and sow at once to wheat, for the ground would be so loose that it would dry out rapidly and render the outcome of the crop very problematic; but alfalfa may be turned under in July, after the first crop has been cut, and the land sown to wheat at the proper season with a good chance for success.

Wheat, however, is far from being the best crop to follow alfalfa—as far as it is from being the best crop to which to apply manure. Corn or potatoes are as good successors to alfalfa as any crops and are more often planted as such than any other two crops. A favorite and satisfactory rotation in Colorado is, alfalfa three years, corn one year, potatoes and millet or oats one year, and spring wheat one year. This leaves the ground free for fall seeding of alfalfa again, which saves nearly a year's crops.

It seems that Kansas farmers might perhaps experiment with alfalfa in crop rotation with advantage to themselves. There is no cheaper method of restoring fertility to soil, and none from which the returns are more immediate. The yield of every farm crop—corn, wheat, rye, broomcorn, millet and fruits alike—will be materially greater on alfalfa sod than it will on any other land. This of itself will be sufficient immediate return to make the practice of turning under alfalfa profitable, while there will be the added lasting advantage that by raising alfalfa on all parts of the farm in rotation the fertility of the whole will be maintained.

TO CROP REPORTERS.

The KANSAS FARMER requests each of its crop reporters, and as many other farmers as are willing to contribute information as to the yield of crops harvested and the condition of crops yet growing, to write and mail us a postal card on Friday, July 28. In order to make these reports comparable with those of the United States Department of Agriculture, and of the Kansas State Board of Agriculture, it is desired that estimates be made in percentages of a "full average crop."

1. Yield of wheat.
2. Yield of oats.
3. Area of corn.
4. Condition of corn.
5. Yield and prospect for hay.
6. Condition of pastures.
7. Condition of apples.
8. Condition of peaches.
9. Condition of other fruits.
10. Condition of work animals.
11. Condition of other live stock.

It is desired to publish these reports in the KANSAS FARMER of August 2 and to have them as complete as possible, so that our readers may act intelligently on all matters depending upon knowledge of the crop situation.

In New York city over 100,000 women earn their own living, three-fifths of whom support whole families.

In Great Britain it has been reckoned that there are about 100,000 absolutely "homeless wanderers," and that 60,000 of these belong to London.

AMONG THE EXPERIMENT STATIONS.

President John M. Bloss, formerly of Topeka, and now of the Oregon Agricultural college, recently delivered an able address upon the subject of drainage, at Salem, Ore., which has been issued as Bulletin No. 26 by the experiment station.

"Deep vs. shallow setting" of milk is and has long been a question of more or less interest to farmers and others who handle milk for the profit there may be in it. Prof. C. S. Plumb, of the Purdue station, at Lafayette, Ind., has made a series of experiments bearing upon this point and arrives at the following conclusions: With a total of 984 pounds of milk in each lot continued for twenty-four days he finds (1) that there is a slight gain of cream from setting milk in shallow pans over that set in deep cans. (2) There was a very considerable loss of fat in the skim-milk from deep setting over that from shallow setting, amounting to nearly twice as much. (3) The butter milk from shallow setting contained much more fat than that from deep setting. (4) A slightly smaller amount of milk made one pound of butter, when set in shallow pans, compared with that set deep. (5) Assuming that milk is to be set in the open air, other things being equal, it would be most economical to use shallow pans. Prof. Plumb also experimented upon the influence of dilution upon creaming milk. To do this he daily took ninety pounds of milk from Holstein and grade Short-horn cows and divided it into three lots of thirty pounds each. Into the first of these lots he put fifteen pounds of cold water; into the second, fifteen pounds of warm water, and the third was left undiluted. These lots were placed in Cooley creamers and skimmed at the end of twenty-three hours. The churning was done twice a week. A summary of the result of this work shows that: (1) A loss of fat occurs in the skim-milk when dilution is practiced. (2) This loss is increased, rather than decreased, by the use of cold water. (3) A larger amount of cream is secured by dilution of milk, though a fat test would show this increase in weight to be due to water and not butter fat. (4) A much poorer quality of skim-milk for feeding results, where dilution is practiced. (5) Cream raised from milk diluted with essentially hot water will necessarily sour more rapidly than that diluted with cold water or that undiluted. He also tested the so-called "Baby" separator with a view to its profitable use in the private dairy, and concludes that the modern dairyman, who makes butter from a herd of ten or more cows, in the opinion of the writer, can profitably invest in a hand separator. The losses of fat from hand skimmings will pay for a "Baby" separator in a surprisingly short time, (1) through butter saved from the skim-milk; (2) through reduction in cost of purchasing and maintaining outfit of creamer and pans; (3) through reduced expense for ice in summer.

Perhaps there is no single enemy that the farmer has to contend with that is more to be dreaded than the insect. In some of its forms it meets him at every turn and must be fought. To do this successfully a knowledge of the life habits is, in some degree at least, necessary. Hence it is true that bulletins like No. 28, of the Minnesota station, which gives the classification of insects and their relation to agriculture will be more or less welcome. We are told that there are two great classes of insects, viz., those with sucking mouths, which feed upon the juices of plants, and those with biting mouths, which feed upon the leaves or substance of the plant. It is also true that there are insects which have both a biting and sucking mouth. Of course it would be nonsense to attempt to fight the first named with any poison spread upon the leaves, as Paris green, as they do not eat. For this class of insects the spray of kerosene emulsion, or something similar, which acts by stopping the breathing pores along the sides of the insect, is to be used. Insects which feed upon the leaves may be successfully combated by a spray of Paris green or some similar poison, upon the leaves or parts of the plant attacked. The following rough classification will aid in this war with insects: (1) Insects with both a biting and sucking mouth, wings with few veins—*Hymenoptera*, or bees, ants, etc. (2) Insects with a biting mouth, upper wings horny—*Coleoptera*, or beetles. Upper wings like parchment—*Orthoptera*, or grasshoppers. Upper wings with many veins—*Neuroptera*, or dragon-flies. (3) Insects with a sucking mouth, all wings scaly—*Lepidoptera*, or butterflies. Only two wings—*Diptera*, or flies. Upper wings half leathery and half membranous—*Hemiptera*, or squash bugs, etc. The commoner insecticides and their methods of application are also given in this bulletin. It is well worth writing for. Address Agricultural Experiment Station, St. Anthony Park, Minn.

The New York station, at Geneva, reports upon the manufacture of cheese from normal milk rich in fat and a study of cheese-ripening process in their Bulletin

No. 54. In the first experiment it was found that the milk used averaged fourteen pounds of milk solids to the 100 pounds milk; that there was an average of pounds of fat to the 100 pounds of milk and that the casein and albumen averaged 8. pounds for the same quantity. The amount of solids in the whey was 7.15 pounds to the 100 pounds. The amount of fat in the whey was 0.33 pounds to the 100, and the amount casein and albumen was 0.97 to the 100.

Dairymen as well as honest people will doubtless welcome Farmers' Bulletin No. 12 of the United States Department of Agriculture, which bears the title "Nostifums for Increasing the Yield of Butter." In this bulletin the "Gilt-Edge Butter Compound" from the Planet Manufacturing Co., of Wichita, Kas., the "Black Pepsin" from the U. S. Salix Co., of New-Concord, O., and a "New Process of Butter-making," by J. D. Hollister, of 133 and 135 Adams street, Chicago, Ill., and several others are exposed as frauds. Prof. Wiley says: "It is not believed that any further exposition of this barefaced fraud is necessary. We have made an attempt to obtain samples of all the various compounds which are sold for producing the effects described. There are many of them, however, which we were not able to get. Farmers can rest assured that any substance which is presented to them for the purpose of increasing the yield of butter above that of the normal belongs to some such class of fraud as has been exposed in this bulletin. The proper way for increasing the yield of butter is to secure a breed of cows giving a milk with a high content of butter fat, giving the animals proper nourishment and keeping them in a clean and healthy condition. The proper treatment of a herd of cows, together with neatness in the dairy, not only will give an increased yield of butter, but will also enable the producer of it to get an increased price." The actual value of a box of the so-called "black pepsin" is only a few cents, and therefore the enormous profits which are made in its manufacture and sale at \$2.50 a box can well be imagined.

SAVE THE FORAGE CROPS.

A distressing shortage in forage crops is reported both from Great Britain and the continent of Europe. It is stated that in France the government has caused the bill boards to be posted with appeals to farmers to save every spear of forage in view of the coming scarcity. Indeed, the scarcity already exists in consequence of the short crops of last year. The early forage crops of this year are a failure, and the deficiency of pasturage on account of the drouth has created an unusual summer demand for this kind of feed. Hopes are entertained that the later rains will be more propitious and that the present distress will not be augmented by total failure of late forage. Hay is now being shipped from the eastern parts of the United States and brings about \$50 per ton in the foreign markets.

This shortage may not greatly affect Western markets for forage, but directly and indirectly it is likely to make an unusually brisk demand for all feeding stuffs. Extra diligence in saving these cannot this year be labor lost.

That prices of live stock will speedily rally from the present depression can scarcely be doubted. Just now English and continental European farmers are obliged to market their stock on account of scarcity of feed. The animals are not generally in prime condition, but they are better than they are likely to be again for many months, and are forced on the market for what they will bring. This run will soon be over and the later markets will have short supplies. Poverty may curtail consumption to some extent, but poverty does not greatly affect the chief meat-eaters of the old world. Our markets should be given a rest pending the settlement of our monetary disturbance and the disappearance of the glut in the foreign live stock markets.

"Character told by the teeth" is the latest fad. Small teeth, it seems, are the least to be desired. Under-sized teeth are signs of an under-sized character, no matter how white and regular they may be.

The prolonged drought in France has had such a serious effect upon the grain and other crops that the Chamber of Deputies has decided to suspend for the rest of the year the custom duty on oats and hay, and to reduce by one-half the duty on barley and maize.

Horticulture.

THE CHRYSANTHEMUM.

A paper read before the Shawnee County Horticultural Society.

The chrysanthemum derives its name from the Greek words chrysos (gold) and anthos (a flower). The literal meaning, then, is "gold flower," and in such varieties as Golden Dragon, Grandiflorum and Kioto the petals are a golden yellow, which abundantly justifies the name.

We first hear of the chrysanthemum in China and Japan in the year 1186, where it is known as "Kiku," or star-eyed daughter of the fall. The common ox-eye daisy, found growing wild so abundantly in the East, is of the same family. In Japan they have a certain day, during its flowering season, set apart as a festival, and all the inhabitants turn out to pay due homage to their national flower. It is also one of the crest badges of the imperial family, and is used as an official seal. The hilts of the swords forged by the Emperor To Toba, who ascended the throne in 1186, had the Kiku figured upon them.

We first hear of it in this country in 1810. Its early history on our continent is lost, and it is impossible to say, with any certainty, who first cultivated it in the new world. As it was cultivated in England in 1795, it could not have been very long before it was cultivated in American soil. Ten years ago but few chrysanthemums were grown in this country, and it is very likely they were brought from England.

It is surprising to think of the advancement that has been made with this popular flower. Ten years ago it was hardly noticed and to-day it is one of the most beautiful we have, and it has most certainly come to stay. During these ten years we have had between two and three thousand new varieties, so that you can, as the saying goes, "pay your money and take your choice."

The first name to be mentioned in connection with the chrysanthemum in America is that of Dr. H. P. Walcott, of Cambridge, Mass. He was the first American to raise new seedlings. They were produced in 1879, from seed ripened in his own garden, and were exhibited in Boston at the horticultural society, in the fall of that year, where they attracted very little attention. Now we have a vast number of growers. Among them are John Thorpe, of Pearl River, N. Y.; W. K. Harris, of Philadelphia, Pa.; T. H. Spaulding, N. J. Hill & Co., of Richmond, Ind.; Nathan Smith & Son, of Adrian, Mich., and a great many others.

The way most people grow chrysanthemums is this: They bring up their old plants out of the cellar, where they have been kept all winter, just in time to set them out in the ground to grow all summer; then take them up in the fall, pot them in old boxes or old tin slop-pails that have been thrown away; then they bring them into the house for their beauty. Now, where is the beauty? I can't see it in that kind. Now, this is the way to treat them for beauty: Bring up your old plants in January; water them and get them to growing good; keep the sprouts from the roots cut down to the ground, and take the shoots for cuttings (or slips) that come out from the old stalks. They should be at least three inches long and the wood should be in a condition to break with a snap without bending. When you have taken as many slips as you care to have plants, get an old pan or box, fill it with clean, coarse sand, make holes with a stick, put in your slips and press the sand firmly around them, then throw the old plants away. In about two weeks the slips will be rooted; then pot them in small pots and let them grow until time to set out. In planting out you can not have the ground too rich. Chrysanthemums are gross feeders. When they have grown eight inches high, cut them back to four, and when the new shoots are four inches high pinch out the end, and save three or four of the branches that will spring from each of these. Allow these

branches to attain a height of, say, nine inches, then stop them back for the last time, but never pinch them back after the 10th of July, as it will spoil your flowers if you do. After the 1st of June put a good mulching of straw manure around them. This keeps the roots from drying out so quickly. If it is a very dry season I would water them.

I hear you say, "What a lot of work and trouble," but you can have nothing without more or less trouble, and you will be more than repaid for all the trouble you have taken when they come into bloom.

Not later than the 20th of August they should be lifted and potted in large, clean pots. If you have old pots on hand, get out the scrub brush, a tub of water and some soap and scour them up. You will be surprised to see how it will help the looks of the plants, and the pots, too. Make your soil very rich. Water them thoroughly and set them in the cellar for about a week. Sprinkle two or three times. At the end of the week you may bring them out of the cellar, but keep out of the hot sun for a few days longer. After they have begun to pick up give manure water, weak at first, increasing in strength until the buds begin to show color, then stop entirely.

Now, there is one thing more: If you want fine, large blooms, you must pinch off all the buds except the end one while they are very small. If you do not do this you have a whole lot of little flowers that do not pay for the growing, and all your work is for nothing. At least, that is the way I look at it. I would rather have a half dozen fine, large blooms than a whole tub full of little bits of ones. I think we all like a large apple better than a small one, and we also know what kind we generally get when the tree hangs loaded down with fruit and they are all allowed to mature before picking.

Now I have a suggestion to make: Let each lady who belongs to this society grow at least three plants this summer, and next fall bring the blossoms to our meeting and compare them to see who has had the best success. All are to grow them under the same directions. The gentlemen bring their fruits and compare them and derive a great deal of benefit from it. Now why can't we get up a little enthusiasm? What is the use of being a member unless you do something towards making the meetings interesting? Come, let us all try and see what we can do.

Doubted His Qualifications.

"Governor," said Mr. J. T. Donovan to Hon. Norman J. Colman, "I have been appointed to represent, with you, the great city of St. Louis in the new State Board of Agriculture. Give me some idea of my duties. What do we do?"

"Well, my boy," said the Governor, slowly, "we ought to do a lot of good things. For instance, we ought to grapple first with the phylloxera vastatrix. I know of nothing so important in the line of our duty."

"Yes, but er-er, is that dangerous, Governor?"

"Dangerous? Well, I should say so. That's what ruins the country every year, and"

"But, Governor, don't we have something to do with the tariff or the silver question? I'm just aching to tackle something my size. Your phyl-what-you-may-call-'em is all very well in its way. I'm down on 'em as much as you are. I hate 'em, but why can't we wipe them out at the first meeting and then go at something better?"

"I'm glad to see you so ambitious, old fellow, and I'll keep you in mind when we meet. I have a letter here from Frank Russell, of Laclede, in which he complains bitterly of the ravages of the phyllophagan. Why not begin on that?"

"Well, er-er, what is it?"

"Why, it's one of a section of lamellicorn coleopterous insects containing the chafers, and so called from these insects feeding on the leaves of trees?"

"Sounds like a good thing. Any politics in it?"

"H—no! I mean of course not. It's business. As a member of the State

Board of Agriculture you want to post up on these things, old fellow. We ought to be at work right now on the causes of ogganition. These dog days—"

"Governor—excuse me—but what's that?"

"Great Caesar! Don't know what ogganition is? Why, its the murmuring and grumbling of a dog and presages a case of hydrophobia. And then we ought to be looking after the samara."

"The samara?"

"Yes, you know what that is, of course—an indehiscent superior fruit, a dry nut elongated into wing-like expansions; in other words, the seed of the elm."

"Governor?"

"What is it, my boy?"

"Have you accepted your appointment?"

"Why, certainly. It's the opportunity of my life. I should like to be at work right now on the prunus."

"Oh, Governor."

"Yes, my boy."

"Guess I'll resign. I don't seem to be in it at all. No, sir-ee."

Shawnee Horticulturists.

The next regular meeting of the Shawnee County Horticultural Society will be held at the residence of Mr. A. Coleman, north of Menoken, on Wednesday, the 26th of July, at 10 o'clock a. m. The meeting is changed on account of school meetings on Thursday. A good programme will be presented and a regular old-fashioned basket picnic dinner. Come all, and bring your baskets well filled and enjoy a day with the horticulturists.

W. T. JACKSON, Secretary.

EDITOR KANSAS FARMER:—Please put this question in the "Flower" department of your paper: Will some one interested in flowers give a list of seeds that will grow bulbs or tubers, and oblige a reader? An early answer is desired. MRS. M. K. N.

Horticultural Notes.

Throw the dish and wash water around the peach trees.

The only sure plan of keeping up a supply of fruit is by continually planting and giving the young trees good care.

The longer an orchard is kept in cultivation, and a crop taken off, the greater becomes the necessity for liberal manuring.

The greater portion of the roots of a grape vine grow near the surface, and for this reason the cultivation should be shallow.

Spring budding of peach, pear, cherry and apricot can be performed most successfully in June. The budding can be done in the usual way.

Often when the orchard is seeded to clover and it needs fertilizing it will be a good plan to let the clover ripen and rot on the ground.

Wire is better than wood for trellises. The vines seem to take hold of it much more readily than they do of wood, and if properly put up the wire is more durable.

In many cases in spraying the fruit trees to destroy insect pests it will be best to repeat the application in ten days even if the solution is a little weaker. Better results will be secured than with only one application.

Trees that are difficult to transplant can, in many cases, be grown to the best advantage in a home nursery. Some varieties of trees that can be readily transplanted with plenty of roots and plenty of soil adhering to them will not bear the treatment generally given in shipping.

Wormy apples are made by the codlin moth. The female lays a single egg in the blossom-end of the small apple as it stands upright. If sprayed thoroughly with Paris green (one pound to 150 or 200 gallons of water) at the time while the apples stand upright, a worm will be killed as soon as it starts to eat. Spray again in a week.

Prof. J. A. Lintner, State Entomologist for New York, claims that Paris green and London purple can be used of double or treble strength if mixed with lime water, and no evil results will follow. If the Bordeaux mixture be used as a diluent instead of lime water, the poisons can be applied four times as strong as if only pure water be employed.

To keep plums from being stung by curculios in the spring, or the trees from being troubled by insects when in blossom, I always throw fine air-slaked lime into the

tree in the morning while the dew is on. Do this once or twice a week until the plums are the size of the hickory nut and you will be surprised to see the quantity you will have. To keep away black-knot I split the outside bark of the tree, but not deeply, or the tree will be killed.—Phel. Yeager, Ontario.

As a preventive of curculio the following is recommended in Texas and worth trying elsewhere: Rub the bodies of the trees with soft soap up to the section of the first branches, just at blooming time. It is well known that although the insect has wings, it crawls up the trees. If the application be washed off by excessive rains it is easily repeated. It is important to apply it early.

To raise good juicy fruit with a fine, rich flavor, you must begin as you do with corn—see that the weeds do not grow. Also, as soon as the blossoms are at their full, pinch off all but what the tree should carry to maturity and can develop without exhaustion, leaving plenty of sap for growth and for extreme drought. This insures a uniform growth of wood, as well as fruit. Wash the trees well at the time of budding with a strong solution of home-made soap, adding a little carbolic acid or carbolic soap. This kills insects and promotes a fine, healthy bark.—Gilbert Jeffry, Chenango, Co., N. Y.

Mr. S. H. Conklin writes from Mt. Carmel, Conn.: "Enclosed please find check for your bills of May 2 and 12. I repeat the gratification I expressed before as to the convenience, the economy, and the real artistic beauty the National Lead Company's Pure White Lead Tinting Colors have proved to me in using them. It would seem as if the old way of trying to produce the desired shade of color by mixing many colors together with much labor and guesswork must be abandoned in favor of your economical, sure and easy method. My painters wish to introduce their use in an adjoining town, and want a couple of your books as guides."

Next Monday is Your Day to Go to the World's Fair.

Why? Because the Great Rock Island Route has given greatly reduced rates, and you can now make that proposed trip to see the Big Show. The rates apply on the following dates: Go Monday, July 24, return Friday, July 28 or August 4. Go Monday, July 31, return Friday, August 4 or 11. Go Monday, August 7, return Friday, August 11 or 18.

Ask nearest ticket agent for full particulars. JNO. SEBASTIAN, G. P. A.

Strawberries -- Wanted: To let berry-growers know that our new Robinson strawberry is the ideal for market purposes. Is large, strong, staminate, firm as Captain Jack. 700,777 plants of other well-known varieties for sale. Send for price list. B. F. SMITH, Box 6, Lawrence, Kas.

The ROYAL FRUIT PICKER. Price \$1.75 Address W.H. RAUCH, WICHITA, KANS.

Election Laws EDITION OF 1893. Includes all the laws on the subject of elections, including the AUSTRALIAN BALLOT LAW, PURE ELECTIONS LAW, PRIMARY ELECTIONS LAW, With forms, and complete annotations of the Supreme Court. Everyone is interested and should have a copy. Only 25 cents.

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In the Dairy.

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

WORLD'S FAIR DAIRY TEST.

The Short-horn herd suffered the loss, by death, of one of its good cows. The herd contains but twenty-four head now.

From the cow to the scales it takes about twenty calculations, in figures, to make a score of the work of one day on each cow in the World's Columbian dairy.

The Jersey herd is short one cow, Annice Magnet, owned by Mr. Boyd. This cow is virtually out of the race, and the Jersey herd contains but twenty-four head.

In response to an inquiry: No sweet cream butter is being made at the World's Columbian dairy. The cream is ripened in one of Jno. Boyd's "vats," in twenty hours.

The youngest Jersey cow in the test is Princess Honoria, dropped November 18, 1889.

Gay Orphan, dropped February, 1882, and Sayda 3d, dropped February, 1882, are the oldest Jerseys in the butter test.

Materna, the oldest Guernsey in the test, was dropped September, 1882.

Butterfly 3d, the oldest Short-horn in the test, was dropped March 4, 1882.

Ida Marigold is the heaviest Jersey cow in the butter test, at 1,078 pounds, while Alteration is the lightest, at 791 pounds, two among the best in the herd—the largest and the smallest.

The average milk of the Jersey herd is 37.30 pounds a day. The highest record is 45.4, the lowest 28.3. The highest Short-horn record for one cow only is over 50 pounds, the lowest is 21 pounds 9 ounces. The highest Guernsey record is 37 pounds 8 ounces, the lowest 22 pounds 7 ounces. These figures were taken in May.

The only cow from Kansas in the Columbian dairy test is a Short-horn owned by W. W. Waltmire, of Carbon-dale.

The Jerseys exceed the Guernseys in milk 489.7 pounds, in cream 135.3 pounds, in butter 45.44 pounds. The Jerseys exceed the Short-horns in milk 79.7 pounds, in cream 177.3 pounds, in butter 66.70 pounds. The Guernseys exceed the Short-horns in cream 42.0 pounds, in butter 21.26 pounds. The Short-horns exceed the Guernseys in milk 410 pounds.

The ratio of milk to butter stands thus: Jersey milk, 17.24 pounds to a pound of butter; Guernsey milk, 18.71 pounds; Short-horn milk, 23.22 pounds. The ratio of pounds of milk to each pound of cream stands: Jersey milk, 7.52 pounds; Guernsey milk, 8.70 pounds; Short-horn milk, 10.76 pounds. The ratio of pounds of cream to a pound of butter stands: Jersey cream, 2.29 pounds; Guernsey cream, 2.13 pounds; Short-horn cream, 2.15 pounds.

Turning, for example, to the five days' record of the herds given in a previous week, we find that the totals stand thus:

	Lbs. milk.	Lbs. cream.	Lbs. butter.
J Jerseys	4,241.8	563.8	245.93
Guernseys	3,762.1	428.5	209.49
Short-horns	4,162.1	386.5	179.23

The difference in creams is an interesting study. It will be a surprise to most persons to find that it requires more of Jersey cream and of Short-horn cream to make a pound of butter than of Guernsey cream. But in turning to the preceding five days we find that the figures are changed; then it took 2.03 pounds of Jersey cream, 2.21 pounds of Short-horn cream and 2.31 pounds of Guernsey cream, respectively, to make a pound of butter. Only the full time test will fix this point.

To Clean a Churn.

If the churn is first scalded with hot water and then rinsed with cold water, the cream will not pack into the corners or crevices nor adhere to the sides. Then after the churning and the withdrawal of butter and the butter milk, reverse this process—that is, first thoroughly rinse with cold water and then scald with hot water, and the operation is complete. Keep brushes and cloths and soap of every description out of the churn. A little

sal-soda in the last scalding water may be occasionally used with good results.

Tainted Milk.

The causes of tainted milk have been classified by Dr. Gerber as follows:

1. Poor fodder.
2. Poor, dirty water, used not only for watering the cows, but also for washing the cans.
3. Poor, stinking air where the cows are.
4. Uncleanliness in milking.
5. Keeping the milk too long in too warm and poorly ventilated places.
6. Neglecting to cool the milk quickly after milking.
7. Lack of cleanliness in care of the milk.
8. Poor transportation.
9. Sick cows.
10. The cows being in heat.

Dairy Notes.

Remember a good bull is one-half of a paying dairy herd.

Good farm buildings are a sure sign of thrift and enterprise.

Keep the cream cool during the hot weather. Churn at 58° if possible.

The thoroughbred dairy cow at present prices is within the reach of all.

All the June butter in the Kansas dairy display at Chicago has been sold at 17 cents a pound, 3 cents below the best Elgin creamery.

Fly-time and hot weather lowers the quality of butter, and raises the price. Give the cows good water at this season and plenty of shade.

James McLain, of Sims, Ind., publishes an affidavit in the *National Stockman* to the effect that he has a Jersey heifer which dropped a healthy calf when 11 months old.

Where dairying is the chief occupation in a community, all the indications are toward prosperity. Such a system puts farmers on a "pay as you go" basis, and teaches them the surest methods to independence and affluence.

The *Rural Life* says the "man or woman who never reads farm or dairy papers, nor never goes to dairy meetings, will never make the best butter. It is out of the question, friends. There is progress being made in the dairy, and we must keep up with the procession." Every word of this is true, yet many prefer to remain in the rut of their ancestors.

The *Jersey Bulletin* says it has been moderately successful in keeping small quantities of butter, say ten pounds, cold and firm by placing it in earthenware crocks and wrapping the crocks in wet woolen cloths, allowing the lower edges of the cloth to hang in a basin of water. The air blowing on the cloth sets up evaporation and keeps the crocks cool.

Three Irish dairymaids, who have been selected from the Munster dairy school, will be seen in the Irish village at the World's Fair engaged in the making of butter and cheese according to the strictest standards of the Emerald Isle. This will constitute a part of the display under the direction of the Irish Industries Association, which was formed by Lady Aberdeen for the purpose of creating a market for the handiwork of Irish artisans of various sorts.—*Breeder's Gazette*.

This is not the time of the year when feeding liberally should be too hastily suspended because there seems to be plenty of grass. During the hot weather and fly-time cows should have a little extra feed at the barn night and morning, and the result will be the better yield of milk all through the season. The good start enables the cow to do better the whole year after. At the Cornell station it was found that those cows that had received a grain ration at pasture in 1891 made considerable additional product all through 1892 in consequence of the feeding in the previous year. This shows that the cows lay up a reserve force that will gradually become available even during the year following, as the result of liberal feeding. The rule should invariably be in accordance with this fact. Feed in

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

Royal Baking Powder

ABSOLUTELY PURE

the best manner always, and the feed expended on not only the cow, but all other stock, will appear after many days, even to the full extent of all the 365 of a year.

The ninth annual report of the Dairy Commissioner says the oleomargarine trade is practically stamped out in the State of New York. Before the Dairy Commission began its work 15,000,000 pounds of the tallow butter were manufactured and sold annually in the State. Now these sales are practically nothing, says the *American Creamery*, though it is believed that a little is still palmed off on the victims of cheap boarding houses in New York city and Brooklyn. This happy result was brought about by a determined and long-continued fight on the part of the Dairy Commission, backed by the real butter-makers of the State. Every step of the way had to be fought from one court up through another, till at last honest butter was victorious. The oleo manufacturers had no end of money to back them, but right and honest goods come uppermost at last. The fight has had a wholesome effect on the pure food interests in general. The law that finally broke the back of the oleomargarine monster was one making it a punishable offense for hotel, boarding house keepers or caterers to put the compound before guests to be eaten or to use it in the preparation of food. One result of the destruction of the oleo trade was that the first year after it was put down the sales of Eastern butter in New York city alone increased 1,361,850 pounds.

can be kept comfortably in the poultry house. A large number of these will usually be ready to market before cold weather sets in, and it will be much better and healthier to allow the poultry to roost out of doors at night than to overcrowd the poultry house.

While it is not best to feed so liberally that the fowls will not take sufficient exercise to keep healthy, yet they should be fed so as to keep thrifty and not be compelled to work too hard when the weather is hot and dry. If the fowls are properly fed and have good shade they delight in lying in the shade and dusting themselves during the hottest part of the day.

It is best to use every advantage to keep thrifty and healthy, as it is easier to prevent disease among fowls than to cure, once disease gets a start.

N. J. S.

Inquiries.

EDITOR KANSAS FARMER:—Will you please tell me what to do for chickens that have swollen eyes? They live quite a while and are lively and have a good appetite, but at last die. I have kept them by themselves and applied vaseline to the swollen parts, but it seems to do no good. The eyes began to swell during the warm, dry weather before the rains began. M. B. C. Geneseo, Kas.

Make a wash of alum and camphor, or strong soapsuds made of castile soap is good. If roup, wash the mouth with turpentine. Apply with feather and bathe the head with strong solution of salt and water. Apply while hot.

An Ode to the Hen.

Of robin and blue bird and linnnet, spring poets write page after page; their praises are sounded each minute by prophet and soothsayer and sage; but not since the stars sang together, not since the creation of men has any one drawn a goose feather in praise of the patient old hen. All honor and praise to the singing that cheers up the wildwood in spring; the old recollections oft bringing joy, childhood and that sort of thing; but dearer to me than the twitter of robin, or martin, or wren, is that motherly cluck when a litter of chickens surrounds the old hen. And her midwinter cackle, how cheery, above the new nest she has made; it notifies hearts all a-weary another fresh egg has been laid; and when the old bird waxes heavy and aged and lazy and fat, well cooked with light dumplings and gravy, there's great consolation in that.—*Nebraska State Journal*.

Making Cheese at Home.

Send \$1.00 to C. E. KITTINGER, POWELL, SOUTH DAKOTA, for ten rennets, with complete instruction, by mail, for making cheese at home without any costly apparatus or previous experience. Any woman can make cheese while attending household duties. Milk that will make one dollar's worth of butter will make two dollars' worth of cheese. Simplest process of all. Endorsed by the Manhattan Experiment Station and hundreds of farmers in all parts.

FARMERS,

WE WANT YOUR BUTTER. Will furnish vessels to ship it in, take it regularly, and pay the best Kansas City prices. We have hundreds of regular customers, and will convince you that we can handle your butter satisfactorily. Refer to Grand Avenue Bank and Bradstreet's Mercantile Agency. Chandler & Son, 515 Walnut, Kansas City, Mo.

PILES, FISTULA,

And all other Diseases of the Rectum cured by Drs. Thornton & Minor, Kansas City, Mo., without knife, ligature or caustics—no money to be paid until patient is cured. We also make a specialty of Diseases of Women and Diseases of the Skin. Beware of all doctors who want any part of their fee in advance, even a note. In the end you will find them expensive luxuries. Send for circular giving names of hundreds who have been cured by us, and how to avoid sharpers and quacks. Office, No. 100 West Ninth Street. Rooms 30-31-32 Burker Building.

The Apiary.

Edited by REV. E. T. ABBOTT, St. Joseph, Mo., to whom all communications relating to this department should be addressed. Inclose a stamp if you desire a reply by letter. We invite questions and communications from any of the readers of KANSAS FARMER who may be interested in bee culture.

The Superiority of Honey as a Food.

The following, slightly changed and condensed, is taken from the "Honey Almanac."

"Let me repeat the points of difference between sugar or sirups and honey, and their inferiority to it as a saccharine food. Honey is an inverted sugar, consisting of levulose (fruit-sugar) and dextrose (starch-sugar), and is readily absorbed into the system without being acted upon by the gastric juice.

"Honey is a physiological sweet, or, in other words, its constituents are such that it is absorbed into the blood without undergoing any chemical change. Such is not the fact with regard to sugar. It is indigestible, or rather not as susceptible of absorption and assimilation as honey, but it requires the action of the gastric juice to split or invert its elements, the muriatic acid element of the gastric juice being the chief agent in this chemical transformation. The change produces what is termed in chemistry dextrose and levulose. When sugar is thus acted on by the digestive organs it is assimilable, but when, in case of weakness of the digestive organs, this action does not occur, or is hindered, or, on account of an excess of sugar above the capacity of the gastric juice to transform, there remains a residue, the result is decomposition into elements that irritate and inflame the mucous membrane of the intestinal canal, producing a list of ailments too numerous to mention. Think of the legions of little ones who have been the victims of their universal fondness for sweets, and who so frequently suffer from the gastric troubles which are, in a large degree, the result of sugar indigestion.

"The importance of sugar as a food may be inferred from the large portion of it which is transformed by the action of the digestive organs into the constituents of sugar. Consider the amount of bread, potatoes and vegetables we consume daily, all of which must undergo this change before they are suitable to be appropriated by the human system, and it may give an approximate idea of the quantity of these elements that are required to nourish our bodies.

"If, therefore, the saccharine comprises so large a part of the elements of our food, does it not become an important question as to what form of sweet is the most appropriate and healthful for the nutrition of the human body? It seems to me that you will agree with me that honey is the most important and most healthful, because it is absorbed into the system without change, and, because, unlike sugars, it does not easily undergo fermentation. The formic acid which is an ingredient of honey prevents chemical change and the morbid processes arising from decomposition of sugar."

HONEY REMEDIES.

We select from the same source a few simple remedies that may be used with safety by any one:

A teaspoonful of warm honey taken every fifteen minutes has a surprising effect on catarrh.

Diphtheria and sore throat in the early stages can be cured by honey taken warm.

Onion juice instantly applied will allay the pain caused by the stings of bees or other insects.

Public speakers should freely use honey. The formic acid which it contains cures affections of the mouth, throat, lungs and chest.

Hacking Cough.—A heaping teaspoonful of honey stirred into a raw egg is a very good corrective for a cough, which should be continued for several mornings.

Coughing.—May be quickly relieved by mixing barley-water with honey and the juice of lemons, and drinking it warm.

Croup and Hoarseness.—A gargle made of sage tea, sweetened with honey, or pills made of mustard, flour and honey will be found very efficacious.

Lung Remedy.—This is an excellent remedy in lung trouble: Make a strong decoction of hoarhound herb and sweeten with

honey. Take a tablespoonful five times a day.—O. S. Compton.

Cough Remedy.—Cod liver oil, 2 ounces; honey, 2 ounces; lemon juice, 2 ounces. Take one or two teaspoonfuls three times a day.—Medical World.

Croup.—For speedy relief, take a knife or grater, and shave or grate off in small particles about a teaspoonful of alum; mix it with about twice the quantity of honey, to make it palatable, and administer as quickly as possible.

Honey for the Liver.—Eat as much clover or linden honey as can be taken without causing too much nausea, every two hours during the day, until cured. My wife is a living epistle of the virtue of honey as a remedy for diseased liver.—W. H. S.

Bee-Stings for Rheumatism.—Many testify to the fact that bee-stings will cure rheumatism. One had it so badly for three years that he was unable to work, and was seldom able to walk; he was stung fifteen or twenty times on the face and arms, and testifies thus: "The swelling was terrible, but before it was gone I could walk, and when it was gone I was well, and never had rheumatism afterward, and immediately went to work."

Constipation.—Granulated honey eaten on bread instead of butter, will have the desired effect. Honey which does not granulate, possesses this property in a much less degree. A sauce made of prunes, boiled and sweetened with honey, is an excellent remedy. In dangerous cases, apply an injection of milk and honey, having the temperature of the blood, about 97° or 98° Fahr.

Coughs and Colds.—Honey candy is an excellent remedy for coughs, colds, whooping cough, etc. Fill a bell-metal kettle with hoarhound leaves and soft water, letting it boil until the liquor becomes strong—strain through a muslin cloth, adding as much honey as desired—then cook it in the same kettle until the water evaporates, when the candy may be poured into shallow vessels and remain until needed, or pulled like molasses candy until white.

Honey for Sore Eyes.—Mr. S. C. Perry, of Portland, Mich., says: "A neighbor of mine had inflammation in his eyes. He tried many things and many physicians; was not any better but rather grew worse, until he was almost entirely blind. His family was sick, and I presented him with a pail of honey. What they did not eat he put in his eyes, a drop or two in each eye two or three times a day. In three months' time he was able to read coarse print, and after four months' use, his eyes were almost as good as ever. I have also found honey good for common-cold sore eyes."

Wounds.—From the earliest times honey has been used for healing wounds. Honey applied to inflamed wounds or boils, lessens the drawing, quiets the pain, and produces a good festering or suppuration. Undoubtedly, for all wounds, pustulous inflammations, bruises and bad festering, honey is the best and most reliable remedy, and affords quicker and safer help than all other known plasters; all that is needed is to spread it rather thick on a piece of linen, place it upon the fresh wound, bind it fast, and renew the plaster every four or five hours. Of course, if bones are broken, surgical aid must be had.

Men laugh when told that tobacco injures them, who, if they were honest, would confess to nervous headache, fluttering of the heart, throat disease, disarranged stomach and a general breaking down of their system. Hill's Chloride of Gold Tablets are the only remedy which effects a speedy, permanent cure. All druggists sell them.

Bureau of Information.

"The Burlington" has recently established in a convenient quarter of its elegant and commodious passenger station at Chicago, an office designed to afford travelers information on the thousand and one things they need to know, with regard to routes, rates, connections and accommodations. It has been placed in the hands of an experienced man, supplied with all railway guides, maps and time-tables, and is known as the "Bureau of Information."

It is a place to which all travelers may apply for information and receive a full and correct answer. This is the only office of the kind west of the sea-board cities; and it cannot but prove a convenience to the traveling public. All trains of the "Burlington" enter and depart from this station, and the intelligent and valuable service of the bureau may be enjoyed by all patrons of this line.

A special pamphlet will be issued by the "Burlington" in the near future, giving accurate information as to "How to get to the World's Fair Grounds;" How to secure rooms and board at the various hotels, boarding and lodging houses."

Trustworthy agents will be at the C. B. & Q. depot in Chicago to impart all information to visitors. Arrangements will probably be made by which some trains will be run direct to the World's Fair grounds without change or delay.

As an outsider, the greatest need of Kansas in my judgment is a good, healthy "fool-killer," and have him enter upon his duties and follow it up until there is a large amount of vacant land left for men who are willing to farm and not be statesmen.

TOBACCO HABIT

For sale by all first-class druggists, or sent by mail on receipt of \$1.00. Ask for HILL'S Tablets, and take no others. Particulars free: THE OHIO CHEMICAL CO., (mail address) 51, 53, and 55 Opera Block, LIMA, O.

HILL'S CHLORIDE OF GOLD Tablets will completely destroy the desire for Tobacco in any form in from 3 to 5 days. Perfectly harmless, cause no sickness, and may be given in a cup of tea or coffee, without the knowledge of the patient, who will voluntarily stop Smoking or Chewing in a few days

EASILY CURED

H. P. DILLON, President.

ORGANIZED 1882.

J. W. GOING, Secretary.

Shawnee Fire Insurance Company

TOPEKA, KANSAS. A strong Western Company. Insures against fire, lightning, wind storms cyclones and tornadoes. Losses paid, over \$100,000. Agents wanted everywhere in Kansas.

Prepare for Fall and Winter Feed.

Mr. C. H. Everett, of Wisconsin, in a recent address before a farmers' club in that State gave the following words of caution:

"To the stock breeder and feeder, and especially to the dairyman, the question of forage plants to tide over summer drouths and the preparation of some succulent food for winter use is of prime importance. Fattening stock cannot be kept thriving during July and August on pasture alone, except when we have continued rains and cool weather to hold the pastures flush, and the milch cow will always shrink. The want may be fairly met with rye, oats and peas, sweet corn, Yankee corn, millet, etc. Silage is an essential aid for cattle and sheep in winter, fed in connection with other food, and especially so for cows giving milk. I always manage to have a sufficient amount to carry the stock through until the pastures are flush. As fall advances and the grass becomes less succulent, especially after the first hard frost or two, unless special care is exercised the stock will shrink in flesh or milk. The successful feeder will watch his animals closely at such times and be ever ready to keep up the condition by adding or increasing the grain ration. We should always remember that it costs money to put on a pound of gain, and it is not good economy to allow the animal to shrink in flesh. The man who feeds from birth and keeps his stock growing constantly until ripe for the market makes the most profit, and it is well known to the practical feeder that the older the animal the less the average gain from birth and the greater the cost of production."

A Breach of Promise.

It was a case of phenomenal interest and everybody was ready to have a finger in the pie.

First, there was the engagement of Hank Stevens, good-looking and rich, a dry goods merchant and a middle-aged bachelor, and Almiry Smith, the little clerk in the postoffice. "What luck!" the girls all said when they saw her riding behind Hank's team of prize bays. And the little thing folded her hands and tried to look happy.

For it wasn't all plain sailing. She had struck a snag early in the voyage of love. Almiry didn't love Hank one little bit, and she did love somebody else. She was marrying him to help her family out of the usual financial difficulties. She had about made up her mind that she couldn't marry Hank after all, and wondering how she would be able to tell him, and break his heart, when he threw himself on her mercy and said he didn't love her, and would be doing an awful wrong to marry her, and offered to settle a breach of promise case without Judge or jury by paying her \$10,000 damages to her affections, in spot cash.

Almiry was so surprised at this carrying of the war into the enemy's camp that she nearly fainted.

"Poor girl," how she loves me," thought Hank.

Ten thousand dollars isn't to be sneezed at, thought Almiry, but she looked sad and distressed, as if it were a cheap plaster for a broken heart.

But she accepted, sure, and even said confidentially to Hank: "I'll spend it all in your store, so you'll get it all back again."

And she did. She bought her tresseau there when she married the other fellow.

To the World's Fair.

Save time and avoid the crowd in the city by buying tickets over the "Great Rock Island Route" and stop off at Englewood near the World's Fair gate. Electric line from the "Rock Island" depot direct to the gate. Time, ten minutes. Fare, 5 cents. You can check your baggage to Englewood and avoid trouble and save expense, as Englewood is in the great suburban hotel district near the fair, and you can have your baggage sent to your quarters at once.

Remember, the Chicago, Rock Island & Pacific is the World's Fair line for reasons given above. JOHN SEBASTIAN, Gen'l Ticket and Passenger Agent.

Germany is the greatest potato producing country in the world, averaging over 900,000,000 bushels per year.

Robinson Crusoe's island, Juan Fernandez, is inhabited by about sixty persons, who attend to the cattle that graze there.

Wheat this year is being grown at Manitoba on 1,000,000 acres. There is every prospect of an excellent harvest.

President Cleveland is trying to reduce his weight twenty pounds a month by a judicious regulation of his dietary.

A farmer at Gwithian has lost within the last few days through starvation, arising from drought, fifteen head of cattle.—English Exchange.

One of the largest exhibits of wool at the Columbian Exposition is that received from New South Wales, Australia. This immense exhibit covers a space in the agricultural building of 6,000 square feet, and represents 100,000 pounds of wool, mostly of Merino blood.

Farm Loans.

Lowest rates and every accommodation to borrowers on good farm loans in eastern Kansas. Special rates on large loans. Write or see us before making your renewal. T. E. BOWMAN & Co., Jones Building, 116 W. Sixth St., Topeka.

Indiana Farmer: From what can be learned abroad the export of cattle is likely to be largely increased. Taking the whole export of cattle and meat it is already large. Last year England paid us \$30,000,000 for live cattle and sheep, and twice that for meats of various kinds. To fill this demand requires the very best stock, the improved breeds properly finished. When we add to this the fact that we are getting educated up to better meats at home, and that the production of the great ranches is being steadily curtailed as the land is being cut up into farms, it will be seen that the outlook for the small stock-grower is not an unpromising one. The fact is, the small growers of cattle are the ones that are producing the export grades of beef cattle.

The Canadian Live Stock Journal gives the following method of weaning young pigs, as successfully practiced by many breeders: "If, at five or six weeks, the young pigs are eating and growing well, they increase their feed, giving them all that they will take, and decrease the feed of the sow gradually for nearly two weeks. At the end of this time the two strongest young of the litter are taken away; again, after two days another pair, and so on until all are weaned. This tends to even up the different pigs of the litter, if there is any variation in size, and uniformity in a lot does a good deal when it comes to selling, be they sheep, cattle or hogs. By following this method the sow is given the very best chance, and any danger of spoiling her milking qualities is prevented, which is very important if she is to continue to be a brood sow."

Nerve Tonic

Blood Builder

Send for descriptive pamphlet.

Dr. WILLIAMS' MEDICINE CO., Schenectady, N.Y. and Brockville, Ont.

50c. per box.
6 for \$2.50.

EPILEPSY OR FITS

EPILEPSY OR FITS

Can this disease be cured? Most physicians say No—It is incurable; all forms and the worst cases. After years study and experiment I have found the remedy.—Epilepsy is cured by it; cured, not subdued by opiates—the old, treacherous, quick treatment. Do not despair. Forget past impositions on your purse, past outrages on your confidence, past failures. Look forward, not backward. My remedy is of to-day. Valuable work on the subject, and large bottle of the remedy—sent free for trial. Mention Post-Office and Express address. Prof. W. H. FEEKE F. D., 4 Cedar St., New York.

The Veterinarian.

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the KANSAS FARMER.

TENDER SHOULDERS.—I have a three-year-old horse whose shoulders seem to be unusually tender under the collar. Can I apply anything to toughen them?

Answer.—Wash the shoulders every time the collar is removed with cold water; wipe dry and then apply a mixture of one part alcohol and two parts water.

SWEEENY—CALLOUSED SHOULDERS.—(1) I have a horse that was sweened about seven weeks ago. I have blown his shoulder up, but it does no good. What can I do for him?

Answer.—Make a liniment of equal parts of linseed oil, turpentine and aqua ammonia and rub in a little twice a day till the skin becomes sore, then let it alone for a few days, when the liniment should be repeated.

Review of Kansas City Stock Markets.

White & Rial, commission merchants of Kansas City, write the KANSAS FARMER, under date of July 15:

"We have had heavy runs of cattle this week, also heavy runs of hogs. Cattle receipts 40,345, against 27,208 previous week, and 56,087 hogs, against 40,336 previous week.

"Hogs have held up fairly well, considering the liberal receipts, but went off 10 to 15 cents yesterday, closing 10 cents lower than close of last week.

The Wool Situation.

Jesse T. Baker, President of the St. Louis Commission Company, writes the KANSAS FARMER, under date July 15:

"There is nothing new to report on our wool market. Received past week 2,339,850 pounds. Shipped 1,488,240. The market remains in just about the same condition as for a month or so, excepting that it is perhaps a little more quiet, if such a thing is possible, but our market is by no means an exception in this respect, as this is the case in all wool centers of the country.

"Kansas and Nebraska—Medium, 15 to 16 cents; light fine, 12 to 13; heavy fine, 10 to 11; sandy and earthy, 7 to 9; coarse, 13 to 15; fine medium, 13 to 14.

WE GUARANTEE That one tablespoonful of GOMBAULT'S CAUSTIC BALSAM

will produce more actual results than a whole bottle of any liniment or sprain cure mixture ever made. It is therefore the cheapest (as well as safest and best) external applicant known for man or beast.

THE LAWRENCE WILLIAMS CO., CLEVELAND, OHIO.

MARKET REPORTS.

LIVE STOCK MARKETS.

Kansas City. July 17, 1893.

The depression of the market is generally attributed to the closeness of money. Kansas City banks refuse New York exchange, so that currency is necessary to buy stock.

DRESSED BEEF AND SHIPPING STEERS. Table with columns for No., Wt., Pr., No., Wt., Pr.

G.-F. COL. STEERS. Table with columns for No., Wt., Pr., No., Wt., Pr.

MEAL-FED TEXAS STEERS. Table with columns for No., Wt., Pr., No., Wt., Pr.

TEXAS STEERS. Table with columns for No., Wt., Pr., No., Wt., Pr.

TEXAS COWS. Table with columns for No., Wt., Pr., No., Wt., Pr.

TEXAS CALVES. Table with columns for No., Wt., Pr., No., Wt., Pr.

INDIAN STEERS. Table with columns for No., Wt., Pr., No., Wt., Pr.

INDIAN COWS. Table with columns for No., Wt., Pr., No., Wt., Pr.

INDIAN HEIFERS. Table with columns for No., Wt., Pr., No., Wt., Pr.

INDIAN CALVES. Table with columns for No., Wt., Pr., No., Wt., Pr.

COWS. Table with columns for No., Wt., Pr., No., Wt., Pr.

BULLS. Table with columns for No., Wt., Pr., No., Wt., Pr.

CALVES. Table with columns for No., Wt., Pr., No., Wt., Pr.

HEIFERS. Table with columns for No., Wt., Pr., No., Wt., Pr.

STOCKERS AND FEEDERS. Table with columns for No., Wt., Pr., No., Wt., Pr.

HOGS—Receipts, 2,417. The bulk of sales at \$5 50@55. Many left unsold and could have been had at 10c less than the market.

PIGS AND LIGHTS. Table with columns for No., Dock, Av., Pr., No., Dock, Av., Pr.

REPRESENTATIVE SALES. Table with columns for No., Wt., Pr., No., Wt., Pr.

SHEEP—Receipts, 7,613. Demand very poor on account of tight money.

CATTLE—Receipts, 17,000, including 7,000 Texans. Market dull, 10@20c lower.

HOGS—Receipts, 31,000. Market opened 10c lower, closed weak. Mixed, \$5 75@6 05; heavy, \$5 60@5 95; light weights, \$5 80@6 25.

St. Louis. July 17, 1893. CATTLE—Receipts, 5,100. All Texans, 10@20c lower.

GRAIN AND PRODUCE MARKETS. Kansas City. July 17, 1893. In store: Wheat, 492,065 bushels; corn, 85,200 bushels; oats, 37,156 bushels, and rye, 1,981 bushels.

WHEAT—Market was again lifeless and lower, bearing news from elsewhere and further bank troubles checking trade and causing a draggy market and general decline.

CORN—Receipts, 392,000 bushels; shipments, 652,000 bushels. No. 2, 40c; No. 3, 38c.

WHEAT—Market steady; demand poor; holders offer moderately. No. 1 California, 1 1/4@1 1/2 per cental.

CORN—Market steady; demand poor. Mixed western, 4 1/4@4 1/2 per cental.

MARKET WEAK UNDER THE INFLUENCE OF THE INCREASED OFFERINGS AND UNSETTLED CONDITION OF THE MONEY MARKET.

WHEAT—Receipts, 186,000 bushels; shipments, 174,000 bushels. Market closed 3/4@1/2c lower.

CORN—Receipts, 144,000 bushels; shipments, 73,000 bushels. The market closed 1/4c lower.

WHEAT—Receipts, 46,000 pounds; shipments, 145,000 pounds. Market was quiet.

CASH QUOTATIONS WERE AS FOLLOWS: WHEAT—Receipts, 14,000 bushels; shipments, 94,000 bushels.

WHEAT—Receipts, 186,000 bushels; shipments, 174,000 bushels. Market closed 3/4@1/2c lower.

CORN—Receipts, 144,000 bushels; shipments, 73,000 bushels. The market closed 1/4c lower.

WHEAT—Receipts, 46,000 pounds; shipments, 145,000 pounds. Market was quiet.

CASH QUOTATIONS WERE AS FOLLOWS: WHEAT—Receipts, 14,000 bushels; shipments, 94,000 bushels.

CORN—Receipts, 392,000 bushels; shipments, 652,000 bushels. No. 2, 40c; No. 3, 38c.

WHEAT—Market steady; demand poor; holders offer moderately. No. 1 California, 1 1/4@1 1/2 per cental.

CORN—Market steady; demand poor. Mixed western, 4 1/4@4 1/2 per cental.

MARKET WEAK UNDER THE INFLUENCE OF THE INCREASED OFFERINGS AND UNSETTLED CONDITION OF THE MONEY MARKET.

WHEAT—Receipts, 186,000 bushels; shipments, 174,000 bushels. Market closed 3/4@1/2c lower.

CORN—Receipts, 144,000 bushels; shipments, 73,000 bushels. The market closed 1/4c lower.

WHEAT—Receipts, 46,000 pounds; shipments, 145,000 pounds. Market was quiet.

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CORN—Receipts, 144,000 bushels; shipments, 73,000 bushels. The market closed 1/4c lower.

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THE STRAY LIST.

FOR WEEK ENDING JULY 5, 1893. Bourbon county—G. H. Regua, clerk.

MARE—Taken up by Stephen Holeman, in Franklin tp., one bay mare, 4 years old, small white spot in forehead, black mane and tail; valued at \$40. Shawnee county—J. M. Brown, clerk.

HORSE—Taken up by G. J. Coleman, in the city of Topeka, June 22, 1893, P. O. address 511 east First street, one dark bay or brown horse, about 3 years old, about 14 hands high; valued at \$25.

FOR WEEK ENDING JULY 12, 1893. Haskell county—W. W. Hussey, clerk.

PONY—Taken up by Adolph Sorge, in Dudley tp., P. O. Conductor, June 6, 1893, one dark brown pony mare, fourteen hands high, no brands; valued at \$15.

PONY—By same, one mouse-colored pony mare, fourteen hands high, no brands; valued at \$20. Phillips county—J. F. Arnold, clerk.

MARE—Taken up by C. E. Ostrander five miles northwest of Phillipsburg, June 26, 1893, one bay mare, 7 years old, hind feet white. Montgomery county—G. H. Evans, Jr., clerk.

MARE—Taken up by G. G. Carrinder, in Caney tp., two miles east of Caney, May 29, 1893, one bay mare, three white feet, 11 years old; valued at \$25. Comanche county—F. C. Wilkins, clerk.

MARE—Taken up by F. C. Wilkins, at Neocutanga, May 31, 1893, one sorrel mare, 11 years old, sixteen hands high, left hind foot white, star in forehead.

MARE—By same, one bay mare, 12 or 14 years old, small star in forehead, scar on left side of neck, fifteen and a half hands high. Trego county—C. A. Hoar, clerk.

MARE—Taken up by F. C. Swiggott, P. O. Collyer, about June 20, 1893, one sorrel pony mare, about 3 years old, star in forehead, hind feet white; valued at \$20.

FOR WEEK ENDING JULY 19, 1893. Lyon county—C. W. Wilhite, clerk.

HORSE—Taken up by C. E. Brower, in Heading tp., July 10, 1893, one light bay horse, 8 or 9 years old, left hind foot white, collar marks, and star in forehead. Russell county—Ira S. Fleck, clerk.

MARE—Taken up by I. W. Holl, in Lincoln tp., P. O. Russell, June 30, 1893, one bay mare colt, 2 years old; valued at \$30. Brown county—J. V. McNamar, clerk.

HORSE—Taken up by W. H. Chandler, in Hiawatha tp., June 10, 1893, one sorrel horse, about 10 years old, weight about 1,600 pounds, a little under medium height, a white spot in forehead, slight saddle marks, no other marks visible. Leavenworth county—J. W. Niehaus, clerk.

HORSE—Taken up by Thomas Stone, in Fairmount tp., P. O. Barshor, June 10, 1893, one bay horse, fourteen hands high, herd brand on right shoulder; valued at \$20.

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PROPOSALS.

SEALED PROPOSALS will be received at the office of the Board of Public Works of the State of Kansas, at Topeka, Kansas, until 2 p. m. on Monday, July 31, 1893, and opened immediately thereafter, for all labor and material required in the construction of a library and agricultural science hall, State Agricultural college, Manhattan, Kansas, under the provisions of House bill No. 137, approved March 10, 1893, in accordance with the drawings and specifications prepared therefor by Seymour Davis, State Architect, copies of which may be seen at the office of the board, State capitol grounds, after June 20, 1893.

Each bid must be accompanied by a certified check for a sum not less than 3 per cent. of the amount of the proposal, made payable to S. M. Scott, President of the Board of Public Works, State of Kansas, and to be forfeited to the State of Kansas as liquidated and assessed damages by the successful bidder if they fail to enter into contract and give the required bond on or before August 8, 1893.

The right is reserved by the board to reject any or all bids if it be deemed in the interest of the State so to do.

No proposal will be received after the time above designated.

Each proposal will be enclosed in an envelope, sealed, and marked "Proposals for work and materials required in the erection and completion of a library and agricultural science hall, State Agricultural college, Manhattan, Kansas," and addressed to Wm. Wykes, Secretary Board of Public Works, Topeka, Kansas. Companies or firms bidding will give their individual names as well as the firm name, with their addresses.

The attention of all bidders is called to chapter 114 of the session laws of 1891, which they are expected to comply with in all State contracts.

All bidders are invited to be present at the opening of bids, either in person or by attorney.

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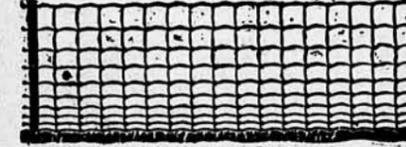
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