

1901 to 300,000,000 pounds in 1902, and the total value of cattle and beef products has fallen from \$80,000,000 in 1901 to \$69,000,000 in 1902, a loss of \$11,000,000. In cotton the reduction is wholly due to the reduced prices, the quantity exported for the year being 160,000,000 pounds greater than in the preceding year, while the value was \$24,000,000 less than the preceding year.

One other item of exports which will show a marked reduction during the last year is iron and steel. While the total figures of exports have not been received by the Bureau of Statistics, sufficient have been received to justify an estimate that the reduction in exports of iron and steel will amount, in round terms, to \$20,000,000 due in a large measure to increase in the home demand, and in part to the decreased demand abroad. The principal reduction in the export trade of the year will then stand: Corn and corn-meal and oats and oatmeal \$75,000,000, due chiefly to the drouth of 1901; beef and beef cattle \$11,000,000, due to increased home demand and shortage in material for feed of stock; cattle \$24,000,000, due to reduction in prices; manufactures of iron and steel \$20,000,000, due to increased home demand and decreased foreign demand.

Thus in the four items of exports—corn and oats, beef and beef cattle, raw cotton, and manufactures of iron and steel the reduction for the fiscal year will amount to about \$130,000,000, while the total reduction in all exports is about \$90,000,000, thus indicating that the general exports aside from these four classes, in which conditions were abnormal, will show a satisfactory growth when complete figures of the fiscal year are presented.

Crop Conditions on July 1.

Preliminary returns to the Statistician on the acreage of corn planted indicate an increase of about 3,520,000 acres, or 3.9 per cent on the area harvested last year. Of the twenty-five States and Territories with 1,000,000 acres or upward in corn harvested last year, Iowa, Nebraska, and Michigan report an increase of 1 per cent; Pennsylvania, Indiana, Virginia, and Louisiana of 2 per cent; Georgia, Arkansas, Wisconsin, and Missouri 3 per cent; Ohio, Illinois, Mississippi, and Indian Territory 4 per cent; Kansas, Kentucky, and Tennessee 5 per cent; North Carolina and South Carolina 6 per cent, Texas 7 per cent, Alabama 8 per cent, Minnesota 9 per cent, and South Dakota and Oklahoma 11 per cent. The average condition of the growing crop on July 1 was 87.5, as compared with 81.3 on July 1, 1901, 89.5 at the corresponding date in 1900, and a ten-year average of 89.2. The condition in Illinois was 91, in Iowa, Nebraska, and Indiana 90; in Kansas and Oklahoma 99; in Missouri 102; in Ohio, 87; and in Texas 41.

The average condition of winter wheat improved during June nine-tenths of 1 point, standing on July 1 at 77, or 11.3 points below the condition on July 1, 1901, 3.8 points below that at the corresponding date in 1900, and 2.4 points below the ten-year average. It fell off during June 4 points in Kansas, 2 points in California and Oklahoma, and 1 point in Illinois, and improved during the same period 2 points in Pennsylvania and Ohio, 7 in Indiana and Nebraska, 10 in Michigan, and 3 in Missouri. Special field agents report a decline of 4 points in Indiana and Illinois since July 1.

The average condition of spring wheat declined 3 points during June, standing at 92.4 on July 1, as compared with 95.6 on July 1, 1901, 55.2 at the corresponding date in 1900, and a ten-year average of 85.8. The decline during June amounted to 5 points in Minnesota, 6 in South Dakota, 3 in Iowa, and 4 in Washington. On the other hand, there was an improvement of 9 points in Nebraska, with no appreciable change in North Dakota.

The condition of spring and winter wheat combined on July 1 was 82.9, as compared with 91.1 on July 1, 1901, 60.8 on July 1, 1900, and 76.2 at the corresponding date in 1899.

The amount of wheat remaining in the hands of farmers on July 1 is estimated at about 52,440,000 bushels, or 7 per cent of the crop of last year.

The average condition of the oat crop on July 1 was 92.1, as compared with 90.6 last month, 83.7 on July 1, 1901, 85.5 at the corresponding date in 1900, and a ten-year average of 87.3. With no measurable change of condition in Minnesota and Wisconsin during June, there is reported an improvement of 7 points in New York, 12 in Pennsylvania, 6 in Ohio, 8 in Michigan, 5 in Indiana, and 10 in Nebraska, and a decline of 1 point in Iowa and 5 points in Illinois. Special field agents report a decline

since July 1 of 3 points in Ohio, 5 in Indiana, and 2 in Illinois.

The acreage of potatoes is 3.5 per cent, or about 100,000 acres, greater than that of last year. Of the 48 States and Territories reporting, 40 show increased and 8 decreased acreages. The average condition of potatoes on July 1 was 92.9, as compared with 87.4 on July 1, 1901, 91.3 at the corresponding date in 1900, and a ten-year average of 92.3. Wisconsin shows a condition 1 point above the ten-year average, Ohio 5, Iowa 3, and Illinois 9, while New York, Minnesota, Michigan, and Pennsylvania show conditions 1, 3, 5, and 10 points, respectively, below such average.

Reports on sweet potatoes are rather unfavorable, but few States showing conditions above their ten-year averages, and the majority of the more important producing States show conditions considerably below such average.

Reports of hay crop are very favorable, an improvement in condition being noted during June in nearly every important hay-producing State. The rains of the past two months have been very beneficial to pastures, and their present condition is excellent, nearly every important State reporting a condition considerably above the ten-year average.

While there has been a general decline in the condition of apples and peaches as compared with last month, reports of those fruits from almost every important State indicate that more than an average crop of each of them will be harvested. The condition of grapes is very good, and it is quite probable that the crop will be as large as that of any ordinarily good year.

Farmers' Institute at Britton's Grove.

Following is the program for the Farmers' Institute at Britton's Grove, three miles south of Florence, under the auspices of Spring Valley Farmers' Club and State Grange:

MONDAY, JULY 28, 1902.
Morning Session—10 O'clock.

Song..... Reverend McCartney
Prayer..... David Britton
Welcome..... Mrs. Henrietta Calvin
Address..... Kansas State Agricultural College.
"Just a Minute" Talk..... Prof. L. M. Knowles
County Superintendent.
Song..... S. V. Quartet
Address..... Prof. D. H. Otis
Kansas State Agricultural College.

DINNER.

Afternoon Session—1.30 O'clock.

Song..... Chorus
Address..... E. W. Westgate
Master State Grange.
Declamation..... Bessie Rowe
Song..... Comic Company
Address..... "The Grange"; Its Objects and
Accomplishments..... Aaron Jones
Master National Grange.
Band Music.

Agricultural Matters.

High Rates.

EDITOR KANSAS FARMER:—On your first page in the article headed "Let this kind of trouble come," I read that the rate on wheat from Kansas City to New Orleans a distance of 900 miles, is 12 cents per hundred; from Kansas City to Chicago a distance of 500 miles the rate is 7 cents per hundred. The rate from Abilene to Kansas City, a distance of 163 miles, is 14 cents; from Solomon City, 172 miles, it is 14½ cents. If this is not robbery I'd like to have it ex-

A Shipment from Ward's



There must be considerable satisfaction to every man when he realizes that he has done something wise and creditable, especially when it directly concerns the welfare of himself and family. Here is a man who is hauling a shipment home, content with the knowledge that all his supplies for several months have been purchased at wholesale prices, or in other words at a saving of about 30 per cent over his home prices.

He has no cause to worry as to what he will find inside the boxes. He has received shipments from us before and knows that everything will be found first-class and exactly as represented. Even if something is wrong, he knows that no firm in the country is more anxious to make it right than we are. We have customers everywhere—in every nook and corner of the United States. Beyond a doubt some of your neighbors deal with us. If you are not a heavy buyer, why not join with a neighbor and get your supplies by freight? It only takes 100 pounds to make a profitable freight shipment.

You may need a catalogue to start with. Our 1,000 page catalogue containing over 70,000 quotations and 17,000 illustrations will be sent on receipt of 15 cents to partly pay the postage. This catalogue is already in the homes of over 2,000,000 careful buyers and should be in your home also. Send for it today.

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CHICAGO
The house that tells the truth. 11

plained to me, but I suppose it can't be explained. We have to grin and bear it. I shall vote the Socialist ticket however, which is all I can do.
P. H. MEYERS.
Abilene, Dickinson County.

Feeding Flaxseed.

EDITOR KANSAS FARMER:—I have a lot of flaxseed which I would like to feed cattle on full feed. Could you or some reader of the FARMER tell me how and how much to feed a day per head. Should I grind it or feed it whole.
JOHN M. SWART.
Oneida, Nemaha County.

Pocket-gopher.

EDITOR KANSAS FARMER:—Will you please give me through your valuable paper the best way of ridding my farm of the pocket-gopher? They are a great drawback here to alfalfa-planting. I have tried trapping with steel traps with only fair success. I have also tried poisoning them with strychnine put in potato but with only fair success. I find they carry the poison out of the holes and do not eat it.
S. A. BOWMAN.
Council Grove, Morris County.

Sowing Alfalfa Seed.

EDITOR KANSAS FARMER:—I have seen a great deal in the KANSAS FARMER about sowing alfalfa. I have some thirty acres full of seed and I would like to know through the columns of your paper when to cut it and the care of it up to threshing.

I pastured thirty head of cattle on it this spring using Bush's "Gas releasing bits." It has not been cut this year.
O. E. MATSON.
Furley, Sedgwick County.

Let the alfalfa stand until the older pods are about ready to lose their seed; then cut and handle as for hay. A side delivery rake is excellent to rake alfalfa on account of saving more of the leaves for hay and shattering the seed less than the ordinary rake. As soon as the alfalfa is dry enough, stack and cover the top of the stack with stough-grass or millet, or something equally good to shed rain. Where there is much alfalfa to thresh, machines specially fitted for this purpose may be obtained. The usual charge for these is \$1 a bushel for threshing. The ordinary grain-thresher may be used if provided with coarse-set riddles. For threshing with this kind of machine the usual charge is 50 cents a bushel. Unlike clover, the alfalfa seeds are arranged several in a pod, and are knocked out by the action of the ordinary threshing-machine so that a clover-huller is not necessary.

Early Plowing for Wheat.

FROM FARMERS' BULLETIN NO. 122, UNITED STATES DEPARTMENT OF AGRICULTURE.

The opinion generally prevails that early preparation of land for wheat is an advantage. A number of stations have studied this problem, and have reported results showing the advantages of breaking the ground for wheat upon the removal of a preceding crop of oats.

As the result of seven years' trial at the North Dakota station, fall preparation for spring wheat gave an average increase in yield of one bushel per acre over spring preparation.

At the Kansas station, the average was even greater with early plowing for winter wheat. Starting the plow immediately after harvesting the previous crop resulted in a considerably increased yield over September plowing. Of two large plats lying side by side, one was plowed August 7 and the other September 7. The ground was very hard on both plats and broke up in large lumps. At the first plowing the land was comparatively free of weeds, while in the later breaking there was an even crop of weeds almost one foot in height. The early-plowed plat was disked twice to keep the weeds in check. The late-plowed plat was disked five times immediately after plowing, to prepare it for planting. Both plats were seeded September 12, at the rate of one and one-fourth bushels per acre. At the time of seeding, the early-plowed plat was moist three inches below the surface, while the late-plowed plat was very dry. Though the latter was moist when turned up, it dried out rapidly when exposed to the sun. A large portion of the seed on the early-plowed strip germinated promptly, but on the late-plowed remained dormant until the October rains. The difference in the two plats was noticeable throughout the growing period. The early-plowed plat ripened first, and yielded at the rate of 14.57 bushels of grain and 0.7 ton of straw; the late-plowed, at the rate of 11.99 bushels of grain and 0.49 ton of straw per acre.

In another trial at the same station, two plats were plowed July 20, just after removing a crop of oats, and two others were plowed September 3. Several heavy rains occurred between these two dates, causing a packing of the first-plowed plats. They were also rather weedy at the time of seeding, and were disked to bring them into good condition. All were seeded September 18. The wheat on the early-plowed plat came up first and was more uniform than on the late-plowed, and maintained the advantage throughout the fall. The early-plowed plats yielded at the rate of 23.66 bushels, the late-plowed at the rate of 19.74 bushels, per acre.

At the Michigan station, in experiments recently reported, one plat was plowed for winter wheat immediately after removing the oat crop. The soil was rolled and harrowed at once, harrowing being repeated every seven or ten days until the wheat was sown. On another plat the ground, after the removal of the oats, was allowed to remain undisturbed until the day before sowing the wheat, when it was plowed, rolled, and harrowed three times. The early plowing, followed by rolling and repeated harrowing, approached the condition of summer-fallow. In case of the late plowing, done September 16, the ground became very hard and lumpy and the plowing was difficult. It was impossible to prepare the seed-bed as well as in the preceding case. The yield of the early-plowed plat was at the rate of 23.65 bushels, the late-plowed, 19 bushels, of grain per acre.

Very similar experiments, with like results, are reported from the Oklahoma station. Wheat seeded on oat land, plowed July 19, August 15, and September 11, yielded at rates of 31.3, 23.5, and 15.3 bushels per acre, respectively. Early plowing tended greatly

to the suppression of weeds and the conservation of soil moisture in these experiments. Three days before seeding the early-plowed soil contained 16.8 per cent of moisture, the medium-plowed 13.9, and the late-plowed 7.7 per cent—some 4 per cent less than the amount required to germinate wheat readily.

At the Minnesota station, it was found that early plowing opened the surface of the ground, so that the rainfall could be more readily absorbed, while the furrow slice formed an effective dirt mulch; retarding the movement of moisture to the surface. This is a matter of much importance in a droughty season. It was also found that on unplowed land the growth of weeds following a crop of grain dissipated a large amount of the moisture that early plowing conserved.

The results secured in all these experiments are quite uniform in showing the good effects of early plowing for fall wheat. Briefly stated, early plowing, followed at intervals by harrowing, prevents the growth of weeds, conserves the moisture of the soil, keeps the soil in good tilth, and results in the formation of a seed-bed best suited for the prompt germination and growth of the seed. The cost of preparing the ground is lessened, the yield of grain is increased, and the practice is financially profitable.

Forage from Russian Thistles.

FROM SECRETARY COBURN'S JUNE QUARTERLY.

Eight years ago the equanimity of Kansas farmers, especially those in the more northwestern counties, was disturbed by the appearance on their cultivated lands of a new and strange weed, which proved to be the dreaded Russian thistle or Russian tumbleweed. Its source of introduction has been ascribed to Colorado and Nebraska—being brought in alfalfa seed from the former and "tumbled" in by winds from the latter. Immediately following its appearance in Kansas strenuous efforts were made and stringent measures adopted to prevent its spread and if possible to eradicate it. Much information was disseminated, telling of the weed's pernicious habits, and giving the observations and experiences of others who had dealt with it, as well as the best means of preventing its spread.

Russian thistle seeds probably were brought to the United States in flaxseed from Russia, and the presence of the plants in any alarming numbers was first noted in South Dakota, where they rapidly spread more or less to North Dakota, Minnesota, Wisconsin, Iowa, Nebraska, Colorado, and other sections, and, regardless of location, soils, conditions, or climates, they seemed to thrive and multiply. But all along the line a fierce fight has been waged against them, although often with little avail, and nothing but the vigilant cooperation by the inhabitants of infested districts is likely ever to bring about their extermination.

In Kansas the thistles have as yet been pretty well confined to the north-west corner of the State, the section earliest seeded, and it is gratifying to note that they have not been permitted largely to extend their area in a threatening way. In the territory where they are, however, nothing but condemnation of them has been heard until recently. Within the past few years, however, there have come indirectly to the Kansas agricultural department occasional reports of their being utilized, both green and cured, as feed for live stock, and with a view of ascertaining the facts as to such practices the department has interviewed numerous parties who have harvested thistles and fed them to live stock on a considerable scale, and what they say is set forth in detail in the following pages of this quarterly, along with other kindred information.

Russian thistles, as generally understood, are regarded as the farmers' implacable enemy, a hateful menace to all useful vegetation, and a curse to agricultural districts; difficult to prevent the spread of or to exterminate. While it is well known that, when young and growing, they are often greedily eaten by live stock, especially sheep and cattle, their utilization as indicated is new. In this connection, it is proper to say that the State Board of Agriculture, in devoting a publication to the discussion of this subject, does not in any sense intend to appear as encouraging or even countenancing the growth of thistles for any purpose whatsoever, as the farms of Kansas should not be disgraced nor depreciated by their presence.

Of those interviewed, most agree that the so-called "thistle hay" quite favorably corresponds in feeding value

with that from native grasses, and some even assert that it is equal to alfalfa, which it is said to resemble in some respects, when properly cured and handled. At all events, from a general survey of the reports, thistle hay is considered by those who have used it nutritious and fattening, and cattle and sheep, with no other feed, can be sustained throughout the winter in as fair condition as when other ordinary forage is used. It is also indicated that horses and mules do not seem to care so much for nor do so well on thistle hay as do other stock, and hogs will not eat it at all, although they relish the thistles when cut and fed green. When used with sorghum, millet, alfalfa, etc., the general experience has been that cattle made no apparent distinction between them, and if any preference were shown, it would likely be in favor of the thistles. The hay is generally all thistles, owing to their habits of growth, as on land sufficiently numerous to justify harvesting, they have usually choked out other vegetation, even other weeds, and in the majority of cases no cultivated crops were grown; as, if attempted, they more often than otherwise came to naught. Small grains, such as wheat, rye, and oats, are easy victims of the thistles. Crops that can be frequently cultivated, like corn, can be successfully grown, in other conditions being favorable, in spite of the thistles, as the frequent cultivation necessary for the best development of the corn greatly retards and dwarfs the growth of those not killed by it; but lands badly infested with Russian thistles are at best much depreciated for general farming.

The thistles are cut for hay with mowers, ordinarily when eight to twelve inches high and blooming, before the stems become hardened and woody. The methods of handling after cutting, are various. Some rake and stack immediately; others let them cure as they lie, afterwards stacking; while still others let them wilt, then cure in shock, and haul from the field as used, or stacking at convenience; whatever way they are handled seems to give satisfaction, provided the hay is not rain-washed after cutting, which discolors and may make it distasteful to stock. To prevent this possibility in a measure, it is suggested that thistle stacks should be topped with something that will turn rain, as at first the thistles lie very loosely and will not shed water, although later settling quite compactly. Some report that thistles can be cut two or three times during a season, when conditions are favorable.

Wherever live stock has access to thistles it is observed that the young plants are greedily eaten, and they are found excellent for increasing the flow of milk. Their early growth gives succulent grazing in the spring some time before other vegetation is advanced sufficiently to be available, and is likely to be abundant on infested tracts, regardless of weather or soil conditions.

It is generally reported that all live stock relish the pasturage afforded by thistles for the three or four growing months each year and sheep and cattle particularly like it, abandoning other herbage in its favor, and even break through fences in their eagerness to graze upon it, rather than be confined to the prairie- or buffalo-grass. Thistles, of course, are most valuable for pasturage when young and tender, but live stock will eat, apparently with relish, the matured plants in the fields, when damp and soft, sometimes even preferring them to the green grass. When intended for hay, thistles preferably should not be grazed upon. Whether grazed or cut for hay, they will in course of the season produce enormously of seed, and their survival is in no wise endangered by either.

It is also reported that the very young plants are excellent for human food as "greens."

Russian thistles are annuals, growing from the seed each year, and if no seed is produced eventually there will be no thistles. When young, individual plants are easily killed by cutting off at the surface of the ground, and whole fields of them destroyed by carefully plowing under, completely covering, and, of course, no seeds are produced. Nearly all agree, however, that wherever present in large quantities or scattered over wide areas, their eradication is difficult, and without the untiring cooperation of those in infested districts it will fall of accomplishment. There have been numerous opinions advanced by those reporting as to the best methods of ridding infested areas, and one, frequently mentioned as being most effective, is to utterly abandon the cultivation of such fields for three or four years, when the thistles will ordinarily cease to reproduce themselves thereon, on account of the

soil becoming soddy and hard—these conditions being unfavorable to their growth. This, however, if thistles are allowed to mature and tumble about unhindered, will not prevent their distributing seeds over other areas. In this connection, it is worthy of note that one correspondent says, if thistles are harvested while yet green with a lever harrow (pulled up), as done by him, no seed will be produced on the land so treated, which is suggestive, considering their habits of growth. These plants grow only on cultivated or abraded land, and not where the sod is unbroken.

The average number of years thistle hay has been used by those reporting is slightly over three; some feeding it as many as six years. The largest area given as having been harvested is 100 acres, others ranging from that down to a few acres. Reported yields per acre are widely divergent, the general average probably being about one and one-half tons, although in some instances nearly four tons have been secured. The largest aggregate quantity reported harvested by any individual is 250 tons.

To summarize, Russian thistles are undesirable and a menace to legitimate agriculture, but if no better feed for live stock is available their use as such is pronounced justifiable wherever present in sufficient quantities. Their production, however, is not encouraged for any purpose, and they should be exterminated, the ground formerly infested devoted to reliable forage crops which contain all the elements that recommend the thistles, and more, without their objectionable features.

The Hessian Fly.

In presenting the following discussion by Mr. C. L. Marlatt first assistant entomologist of the Department of Agriculture, the KANSAS FARMER hopes to do timely service to the wheat-growers:

Economic Importance and General Characteristics.—The Hessian fly is one of the principal enemies of the wheat crop, the minimum annual damage due to it being estimated at about 10 per cent of the product in the chief wheat-growing sections of this country, which indicates an annual loss of forty million bushels and over. An injury of from 50 per cent to a total failure of the crop is not infrequent in certain localities, and the resulting loss is proportionately greater. The parent insect is a very fragile, dark-colored gnat or midge, about one-eighth inch long, and resembling somewhat closely a small mosquito. As commonly observed, however, more or less hidden in the base of young wheat plants or other small grains, the insect appears either in the form of a footless maggot, or larva, or in what is known as the flaxseed state, which corresponds to the chrysalis of other insects. The injury to the plant is done altogether by the larva, which feeds on the tissues and juices and weakens and eventually destroys the plant.

Distribution.—In common with many other of our more injurious farm pests, the Hessian fly is an importation from Europe; and the evidence points very strongly to the fact of its introduction in straw brought over with the Hessian troops during the War of the Revolution. It first appeared in injurious numbers in 1779, in the vicinity of the landing-place of these troops three years before on Long Island, and has gradually spread westward, following the movement of settlement and wheat culture, reaching the Pacific slope about 1884, and now practically extends throughout the wheat belt of the United States and Canada. It has long been known on the continent of Europe, covering the wheat belt from Russia westward. It appeared in England in injurious numbers in 1836, and was first thought to have been recently introduced, but has since been proved to have been present long before in barley fields. In 1888 it was reported from New Zealand, and has since become an important grain pest there, thus nearly completing the circuit of the globe.

Natural History and Habits.—The Hessian fly is distinctively a wheat insect, but will breed also in barley and rye. What has been taken for this insect has, in recent years, been found occasionally in timothy and several wild grasses, but the insects in these cases are now known to be distinct from the Hessian fly, and the occurrence of the latter in plants other than those first named is extremely doubtful.

Over the bulk of the wheat area of the United States there are two principal broods of the Hessian fly annually, viz., a spring and a fall brood. There



When You Think

Of the periodic pain which many women experience with every month it makes the gentleness and kindness always associated with womanhood seem to be almost a miracle. While in general no woman rebels against what she regards as a natural necessity there is no woman who would not gladly be free from this recurring period of pain.

Doctor Pierce's Favorite Prescription makes weak women strong and sick women well, and gives them freedom from disease. It establishes regularity, dries weakening drains, heals inflammation and ulceration and cures female weakness.

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The sluggish liver made active by the use of Dr. Pierce's Pleasant Pellets.

are, however, supplemental broods, both in spring and in fall, particularly in the southern wheat areas, but in the extreme northern area of the spring-wheat belt there may be only a single annual brood, the progeny of the spring brood passing the late summer and the winter in the flaxseed state instead of developing a brood in autumn. It is possible, however, that in this region an autumn brood may develop in volunteer spring wheat. Each generation is represented by four distinct states, viz: (1) egg; (2) maggot, or larva; (3) pupa, or flaxseed; and (4) mature winged insect.

The eggs are very minute and slender, pale red in color, and are usually deposited in regular rows of three to five or more on the upper surface of the leaf. In case of the spring brood, they are sometimes thrust beneath the sheath of the leaf, on the lower joints. The number of eggs produced by a single female varies from 100 to 150.

The whitish maggots hatch in from three to five days and crawl down the leaf to the base of the sheath, embedding themselves between the sheath and stem, and develop on the substance of the wheat, causing more or less distortion and bulbous enlargement at the point of attack.

In a few weeks the larva contracts into a flaxseed-like object, which is the puparium. In the case of the spring brood, the insect remains in the flaxseed state during midsummer, yielding the perfect insect for the most part in September; in the case of the fall brood, the winter is passed in the base of the wheat in the flaxseed condition.

The fall brood works in the young wheat very near or at the surface of the ground. The spring brood usually develops in the lower joints of the wheat, commonly so near the ground as to be left in the stubble on harvesting. With spring wheat the attack is sometimes just at the surface of the ground, as in the case of the fall brood. The adults from the wintered-over flaxseed puparia emerge during April and May, most numerous before the middle of the latter month. The adults of the important fall brood emerge chiefly during September.

There is a supplemental spring brood following the main one and a supplemental fall brood preceding the main one. These supplemental broods are, as a rule, comparatively unimportant, most of the individuals of the spring and fall broods going through the course of development first indicated. Under any favorable weather conditions, as indicated further on, the supplemental fall brood may become a

(Continued on page 740.)

Horticulture.

Horticultural Products for Army and Navy.

COL. WILDER S. METCALF, LAWRENCE, BEFORE THE KANSAS STATE HORTICULTURAL SOCIETY.

If an examination be made of the ration furnished the army and navy of the United States, it will be found that a very considerable as well as an absolutely essential portion thereof consists of what may be termed horticultural products. Meat, of course, is a necessity; and it is being demonstrated that a plentiful supply of fresh meat is a wholesome and necessary part of a soldier's diet, even in a tropical country. But equally important, and especially palatable and wholesome, are the fresh potatoes and, of course, the beans. Beans have been so long recognized as a vital part of the ration that some beans are known the world over as "Navy" beans. Likewise many of you will doubtless recall some jingling lines, which it will not be necessary to quote on this occasion, in praise of the army beans. It may be well to announce at this point that our knowledge of this subject is more personal than practical—more the result of experience than of extended research.

The United States army and navy of to-day have no such experience of hunger and hardship as was had in 1861 to 1865. Food of all sorts is wholesome and plentiful as well as regularly supplied. The American army and navy in the Philippines, 10,000 miles from home and its base of supplies, is unquestionably the best-fed army and navy ever known in the history of the world. Matchless Australian beef and mutton are usually delivered to the remotest lines several times each week. Fine fresh potatoes and the never-to-be-neglected beans, all grown at home, are shipped across the vast expanse of water and issued to the army and navy in the orient with comparatively little loss. Onions, also, a wholesome, fragrant and unjustly tabooed delicacy, are issued frequently. No more appetizing or satisfactory meal was ever eaten by the present speaker than raw slices of those same onions, with hard crackers and salt. Such a meal seemed to put new energy into weary bodies; new red strength into pale, thin blood; and fire into burned-out hearts; to say nothing of hot fragrance into each panting breath. Rotten potatoes and desiccated vegetables will not be mentioned in this address, as little or no experience was had with them. In their stead was had an abundance of canned fruit and vegetables, the purchase of which was always made possible by the savings of flour and vinegar and other articles of the ration, and always to be had from the stores of the commissary sales depot accompanying the troops within reaching distance.

HORTICULTURE IN THE PHILIPPINES.

But little can be said regarding horticulture in the Philippine islands. Horticulture means work, and work is something to which the native of a tropical country is traditionally and constitutionally opposed. Abundant fruit and some vegetables appear to grow spontaneously, and are to be had for the slight exertion of gathering. There was a yam or a sweet potato sometimes rudely cultivated, a small amount of very poor corn, and a root like a radish or turnip, sometimes found in the miserable gardens, and eaten by the army with scant relish. About the only fruit systematically raised seemed to be the banana, found in little groves near the better class of houses. This fruit is found in many varieties, and runs from small to enormous in size; and from poor and indifferent to excellent in flavor. There was an abundance of other tropical fruit, usually growing wild, without care or cultivation of any sort; the delicious mango, the king of tropical fruits, growing on large majestic trees; the peculiar, sweet chico, looking something like a russet apple or a rounded seckel pear and tasting like neither; the tomato-like pomelo, much liked by many. There are also an abundance of coconuts and pineapples. The guava is also found, well known as making most delicious jelly. There are numerous berries and nuts, some edible and some eminently not so. The soldiers of the Twentieth Kansas will never forget one extremely attractive berry found on some trees near a house in San Fernando de la Pampanga. This fruit was beautiful to look upon and pleasant to the taste, and was therefore partaken of most generously by the men of one company which happened to be camping near the trees, with the somewhat alarming result that the entire company was within thirty

minutes distressingly sick and disgracefully unfit for duty. Happily the effects rapidly passed away and left the men seemingly none the worse for the wear and tear, and very much wiser in regard to the proper uselessness of the fruit of at least one tropical tree. There are also lemons and limes, and sour, scrawny, ill-bred, uncultivated oranges.

We must not forget the many beautiful flowering trees: the peculiar flaming blossom of the fire-tree, presenting with its mass of blossoms a truly startling appearance from a distance; the wonderfully fragrant ylang-ylang, the source of one exquisite perfume and the base of many others. These beautiful, delicate, white blossoms, gathered by the natives and strung in long garlands, are eagerly purchased on the streets by the foreigner and wealthy native. And so, with the abundant home ration, supplemented by the varied fruits of the tropics, the army and navy lived well. The fact of the matter is, after all, that man's enjoyment of something to eat depends more on his appetite than on the variety or abundance of the food available, and man's appetite depends largely upon his habits and mode of living; and this brings us to another thought.

YOUTHFUL EXPERIENCES WITH HORTICULTURE.

Our paternal ancestor was a horticulturist of considerable local reputation. In his home place there were ten acres of excellent land, in the outskirts of a growing young city in northern Ohio. The family consisted of eleven sturdy boys and a few girls. These boys were given a thorough and well-considered twenty-one-year course in horticulture, the advantages of which were not at the time fully enjoyed or appreciated, the course being, in a measure, compulsory, and interfering frequently with other pursuits more congenial. However, we still remember the absorbing interest with which we watched the careful preparation of the soil of the garden, and how we enjoyed sorting over the various packages of seeds and the careful planting thereof. We knew which seed should go in trenches and which in hills, and which should be covered deeply and which lightly. We watched daily for the first appearance of the tender leaves and rejoiced in the marvelous growth and development of each little plant. We cut the seed potatoes, being careful to get eyes in each quarter. We dug in the earth and found and wondered at the shriveled seed potato giving its substance to nourish the growing stem. We watched with intense interest the forming pods of the beans and peas; we cleared and prepared the early vegetable ground and planted the attractive little turnip seed. We knew how to cut and trim brush and make supports for the peas and tomatoes. We were taught to drop the kernels of sweet corn five in a hill, and as we dropped the corn we sang the now scarcely remembered ditty, running something like this: "One for the chickens, one for the crow, one for the grubworm, and two to grow."

We remember well the pulling and hoeing of the fast-growing weeds, and our struggle to keep them down, and our pride in the clean earth, free to give all its nourishment to the growing vegetables. In the intervals between school hours, and in the long, pleasant days of the summer vacation, we often worked with bitter hearts, feeling that we ought to have, more often, the usually recognized right of boys to go fishing or swimming. We remember, also, the wondering interest with which we watched in the orchard the process of grafting; the preparation of the graft and of the notch in the limb to be treated, the skilful setting of the graft in place, and the sticky bandage with which the wound was dressed. We recall the curious slit prepared for budding; the bud with its bit of parent wood; its careful insertion in the slit, and that same sticky bandage. How we watched the growth of the bud or graft until the scar disappeared and it was almost impossible to tell where the wonderful cross-breeding took place! We remember the first green fruit, and the usual experience of boys with green apples, pears, and peaches. We never forget the first ripe apples, the Early Harvest and the Red Astrachan. We knew the names and qualities of the various apples, and peaches, and pears, and grapes. We climbed the apple trees and picked with tender care the fall and winter apples. We prided ourselves many a winter evening on our ability to tell the varieties of apples by the sense of taste alone; we recall the great map on which our father had indicated the location and name of each of the several hundred fruit-trees on the place. We had our favorite Bart-

lett and Seckel pear trees, Golden Sweet, Sweet Bough, Russet, Rhode Island Greening, Porter, Belmont, or that particular favorite, that prince of fall apples, the Rambo.

WORK AS A PROMOTER OF MANHOOD.

In short the boys knew something about horticulture because the respected ancestor before mentioned had a theory that there was a close and intimate relation between the raising of good fruit and vegetables and the raising of a good family of boys. The enforced application to duty, the having a definite something to do, developed the habit of industry and the love of work; the boys grew and thrived with the trees and the garden, and now we bless that wise paternal ancestor daily for his knowledge of horticulture and his interest in it, and for his masterful grasp of the wise and beneficent connection between the growth and training of vegetables and trees and the growth and training of boys. The love of work and the habit of industry are of inestimable value. Idleness and lack of responsibility are a terrible mistake in the life of any boy. Let me urge the fathers here present to bring up their boys to work; to have something definite to do each day. You may well praise God for the time when, with them, work becomes a habit; when idleness becomes impossible; while in their thoughtless youth they may complain and think hard things of you, take the word of a grown-up boy that the time will come when your boys will understand, and will bless and honor you all their lives for forcing upon them the priceless habit of application and industry. Did you ever think that the youth of Kansas are perhaps fortunate in their environment?

The withering hot winds, the long seasons of record-breaking droughts, the sudden changes from balmy Italian air to a bitter, six-below-zero blizzard, the occasional magnificent rains, all have helped to make our wonderfully productive soil. The constant struggle with the fitfully changing elements, the some-time affluence and the oft-time lamentable poverty, all tend to develop men. Exposure to the cold of our short, severe winters and the hot sun of our long summers develops strong constitutions. Stern necessity develops habits of industry and application. The whole history of our magnificent State, the conflicts with the Southern proslavery squatter in the fifties, the glorious record in the civil war and the never-ceasing struggle with the soil and the elements have helped to develop strong, aggressive, intelligent, far-seeing, all-conquering men. Keep up your good work, then, horticulturists of the State of Kansas, and remember always the plain connection between your boys and your business.

Hardy Oranges.

H. E. VAN DEMAN, WASHINGTON, D. C.

"Japanese orange trees are now being grown as far north as Virginia and Maryland. Sweet oranges have been grafted on these hardy stocks, and are growing reasonably well. There is no telling how far north oranges may yet be successfully grown, and also no telling when Boreas may blast an entire orchard that has intruded too far into his domain."

The above statements and others of a similar character have been going the rounds of the papers, which are misleading, if not entirely without foundation, in fact. There is a species of orange, citrus trifoliata, which is hardy

AN IMPROPERLY TIED BALE OF COTTON

Is a menace to every one who handles it, and in a short time it will be obsolete. The tie that solves the problem of Cotton Baling is the

WIRE COTTON TIE

Which combines strength and durability, ease and rapidity of application. These ties are adapted to any kind of press and are made from very tough and expensive steel manufactured especially for the purpose by the Illinois Wire Co. There is absolutely no breakage and the wire never slips, hence more density. The wire is round, therefore does not cut the bagging or fibre of cotton. Write for catalogues and prices.

WILLIAM CHRISTIAN, Agt., 203 1/2 Main St. Houston, Texas

as far north as Washington and St. Louis, and in some places north of there, but it bears small fruit of worthless and repulsive flavor. It makes a beautiful and very thorny bush, with glossy foliage and green twigs, which drops its leaves in the fall. It is well adapted for hedges and looks well on the lawn as a single tree-like bush. The white flowers are abundant and fragrant, like those of other orange trees.

While it is true that hybrids between this hardy species and the sweet or edible oranges have been made, and experiments are being made to determine the value of the fruit as regards size, flavor and adaptability to regions north of those where the good oranges flourish, it is not true that any varieties or points of value to the public have been developed. There is not a good orange tree, that is, one that is bearing or will bear good fruit, so "far north as Virginia," nor for several States south of there. Even in extreme northern Florida there is the utmost difficulty in getting orange trees to succeed, and, for the most part they fail except in the central and southern portions of that State, as I can testify from personal inspection within the last year.

Keep your system in perfect order and you will have health, even in the most sickly seasons. The occasional use of Prickly Ash Bitters will insure vigor and regularity in all the vital organs.

CIDER PRESS
One-third more cider with the
HYDRAULIC
than with the old style press.
It pays the best to buy the best
Send for Catalogue, free.
Davis-Johnson Co.
Western Agents,
HYDRAULIC PRESS MFG CO.
Station U, Chicago, Ills.



WHITMAN'S AMERICUS
The Best Cider and Wine
Mill made. Will make 20
per cent. more cider than
any other. Geared outside.
Perfectly Adjustable.
Prices as low as any first-
class mill. Mfrs. of Hay
Presses, Horse Powers, Corn
Shellers, Feed Cutters, Feed
Mills, etc. Send for circulars.
3 SIZES
WHITMAN AGR'L CO., ST. LOUIS, MO.



STARK TREES best by Test—77 YEARS
LARGEST NURSERY.
FRUIT BOOK free. We
WANT MORE SALESMEN PAY CASH
STARK BROS., Louisiana, Mo.; Danville, N. Y.; Etc

AGENTS WANTED TO SELL NURSERY STOCK. 40 per cent commission paid to good, competent men.
Hart Pioneer Nurseries, Fort Scott, Kansas.

J. G. PEPPARD, MILLET GANE
1101 to 1117 West 8th St.
(Near Santa Fe St.)
KANSAS CITY, MO. **CLOVERS TIMOTHY GRASS SEEDS.**

SEEDS

ALFALFA SEED FOR FALL SOWING. We can furnish pure, plump, vigorous seed crop 1901 in car or one-bushel lots. Also all other kinds of field seeds. Write us for prices.
McBETH & KINNISON, Garden City, Kans.

AN OPPORTUNITY

For anyone who has a small amount of money to invest in 7 per cent preferred stock of a co-operative manufacturing institution, which is being formed for the manufacture of household necessities which are bought every day of the druggist and grocer.

We wish a local manager in every city in the Union to take stock and also to sell the same to the people in his community.

Not less than \$10 or more than \$500 worth of stock sold to any one person. Send for prospectus to

GINSENG COMPANY, St. Louis, Mo.

year at fair prices and have concluded to sell their herd-bull, Beauty's heir 145125, after August 15. He has been an exceptionally satisfactory breeder in their herd as the uniform lot of calves show. The young herd-bull which will soon stand at the head of the herd was recently purchased in Massachusetts and is called Marshall Abbottsburn 3d. He traces direct, on the sire's side, to Imp. Craven Knight, Imp. Princess Alice, Field Marshall, Pride of the Isle, and Roan Gauntlet. In order to make room for a number of registered females Mr. Ballantyne offers for ready sale thirty high-grade cows and helpers, good milkers, which will be sold at a reasonable price if taken soon.

The dairymen of the West will be in the market this fall for a large number of grade Shorthorn cows and helpers, and breeders having this class of stock should take advantage of the improved condition and expansion of the dairy industry so as to supply in part this general demand. An announcement in the advertising columns of the Kansas Farmer will undoubtedly result in a good sale. Readers of the Kansas Farmer who are needing good dairy cows should carefully scan our advertising columns where they will always find the best bargains in this line.

A report from Louisville, Ky., says that plans have been drawn and the capital subscribed for the erection of a million-dollar packing plant at that point. The interested parties are said to be Ira Brainerd and Walter Brainerd, of Pittsburg; Frank Brainerd, president of the New York Produce Exchange; F. E. Humphrey, of Chicago, and a member of the firm of J. P. Squires & Co., of Boston. Confirmation of the rumor has not yet been made. Most of the parties named are already in the packing business on a moderate scale. If the plant is built it will represent the interests of a number of small concerns merged together.

Louisiana Purchase Exposition Officially.

EDITOR KANSAS FARMER:—An international exposition will be held in St. Louis to celebrate the centennial anniversary of the first expansion of the nation, a step which made possible the commercial and political development which has given the United States her present commanding position in the world's affairs.

The congress of the United States has stamped its approval upon this great undertaking by appropriating \$5,000,000, and the city of St. Louis has appropriated the magnificent sum of \$10,000,000 to aid in its installation in a manner commensurate with its great mission.

In extent and variety of interests, as well as in the amount of money to be expended, it is designed on a larger scale than any preceding exposition in the world's history.

The Missouri legislature at its last session appropriated \$1,000,000 for its building and exhibit. The Illinois Commission is now in the field backed with an appropriation of \$250,000, which probably will be doubled at the next session. In Iowa a bill appropriating \$125,000 was passed by the legislature; this amount probably will be increased, New York has made a preliminary appropriation of \$100,000, and Mississippi, a State that never before made an appropriation for exposition purposes, has provided \$50,000 for her participation in this great enterprise.

The enterprising State of Kansas has always played a prominent part in the development of the great West and in every line leading to the advancement of humanity. Her sons and daughters are among the best of every State and Territory in the Union, and her social, commercial, and civil influence extends throughout the whole. We ask that you will give all possible aid in securing an increase of the appropriation made by the last legislature, to enable Kansas to be so well represented that it will not be second to any other State. We are especially anxious to have Kansas do her full duty in this matter on account of the moral effect it will have on other States. Laying aside all sentiment and State pride and considering it strictly in the light of a business proposition, a liberal appropriation by the legislature would be repaid many fold within the next few years.

CHAS. M. REEVES,
Secretary Committee on Legislation.

Is There a Shortage of Broom-Corn?

The annual consumption of broom-corn in the United States and Canada is from 30,000 to 35,000 tons, and occasionally 40,000 tons. The consumption last year was about 31,000. The crop of 1901 is estimated at 17,000 tons. It would, therefore, require some 13,000 or 14,000 tons of the surplus of previous years. We have it from a reliable source that there were 9,500 tons of the 1899 crop held by the United States Broom Company, consumed last year, leaving the remainder of the surplus to come from the 1900 crop. From present outlook the yield will be less than last year. Where is the surplus to come from this year?—Broom-corn Journal.

TO MOTHERS

Mrs. J. H. Haskins, of Chicago, Ill., President Chicago Arcade Club, Addresses Comforting Words to Women Regarding Childbirth.

"DEAR MRS. PINKHAM:—Mothers need not dread childbearing after they know the value of Lydia E. Pinkham's Vegetable Compound. While I loved children I dreaded the ordeal, for it left me weak and sick



MRS. J. H. HASKINS.

for months after, and at the time I thought death was a welcome relief; but before my last child was born a good neighbor advised Lydia E. Pinkham's Vegetable Compound, and I used that, together with your Pills and Sanative Wash for four months before the child's birth;—it brought me wonderful relief. I hardly had an ache or pain, and when the child was ten days old I left my bed strong in health. Every spring and fall I now take a bottle of Lydia E. Pinkham's Vegetable Compound and find it keeps me in continual excellent health."—Mrs. J. H. HASKINS, 3248 Indiana Ave., Chicago, Ill. — \$5000 forfeit if above testimonial is not genuine.

Care and careful counsel is what the expectant and would-be mother needs, and this counsel she can secure without cost by writing to Mrs. Pinkham at Lynn, Mass.

Higher Authority.

An Irishman, about whom the Detroit Free Press tells, had enlisted in the cavalry service, although he had never been on a horse in his life. He was taken out for drill with other raw recruits under command of a sergeant, and, as luck would have it, secured one of the worst buckers in the whole troop. "Now, my men," said the sergeant in addressing them, "no one is allowed to dismount without orders from a superior officer. Remember that."

Tim was no sooner in the saddle than he was hurled heels over head through the air, and came down so hard that the breath was almost knocked out of him.

"Murphy," shouted the sergeant, when he discovered the man spread out on the ground, "you dismounted!"

"I did."

"Did you have orders?"

"I did."

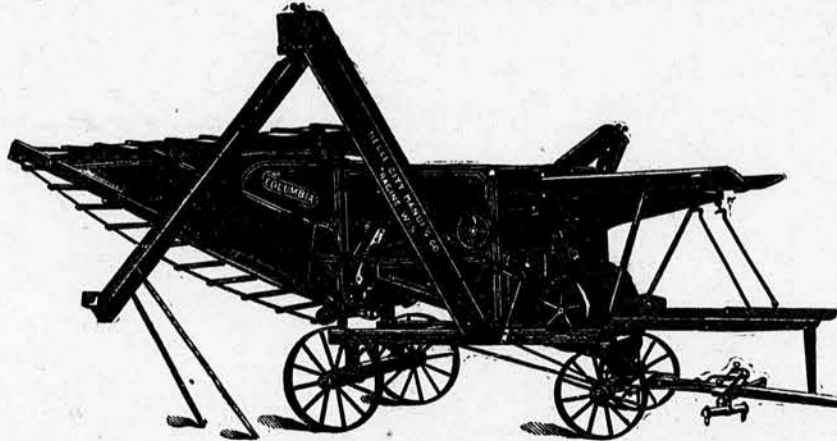
"From headquarters, I suppose?"

with a sneer.

"No, from hindquarters."

"Take him to the guardhouse!" ordered the sergeant.

A young tailor named Berry lately succeeded to his father's business and



sent in his account to a customer somewhat ahead of time, whereupon he wrote the following note: "You must be a goose-Berry to send me your bill-Berry before it is due Berry. Your father, the elder-Berry, would have had

Christian College Splendid new Dormitory, \$75,000; new Auditorium, \$32,000. Academic degrees. Schools of Music, Art, and Oratory. An elegant college home; exclusive patronage. For catalogue, address Secretary Christian College, Columbia, Mo.

The Topeka Business College
LEADING SCHOOL OF BUSINESS AND COMMERCE IN THE STATE
Large Schol. Reasonable Rates. Good Positions. Catalogue Free. Address L. H. Strickler, Topeka, Kans.

more sense. You may look very black-Berry and feel very blue-Berry but I don't care a straw-Berry for you and your bill-Berry."

Editor—Who sent in this item about that last hailstorm? Sub-Editor—Young Jenkins of Aravada. Why? Editor—Why, he says some of the hailstones were as large as canary birds' eggs—that chap's too honest to be a country correspondent—just drop him a line and offer him the position of cashier in this establishment.

Johnny Alfalfa was asked to parse the word cow and he did so in this wise: "Cow is a noun in the present tense—she switches her tail against the fence."

Washing Made Comfortable.
There are washers and washers, but the greatest success of them all in the opinion of the writer is the 1900 washer made by the 1900 Washer Company, Binghamton, N. Y., advertised on page 746 of the Kansas Farmer. Last year while at the Pan-American Exposition this washer was on active exhibition and attracted more attention than any machine of its kind ever shown. All that saw the washer in operation were unanimous in declaring it an unqualified success. Ever since seeing the machine we have been anxious to have it advertised in the Kansas Farmer as we believe it to be a great household necessity. Look up the advertisement and either send them an order or write them for particulars as it is sold absolutely on its merits and we hope that it will meet with a large sale among our readers.

Green Corn Cutter.
Have you noticed the attractive advertisement on page 740 of a new manufactory at Topeka, Kans., known as the Green Corn Cutter Company? They ask the pertinent question, why-buy-a-corn-cutter, when you can purchase a sled cutter for half price? This cutter has been thoroughly tested and does quite satisfactory work. It runs easy and cuts and gathers corn, cane, Kafir-corn, or anything which is planted in rows. The price, \$12, is certainly reasonable for such a well-made cutter as is being made by the Green Corn Cutter Company, of Topeka, Kans.

Publishers' Paragraphs.
Politicians are not the only ones that are getting their lightning rods up this year; but many farm owners who are erecting new buildings feel like insuring their property against loss by lightning by the erection of lightning-rods, and there is none better in the market than that manufactured by Townsend & Dooley, of Topeka, Kans., whose advertisement appears this week on page 740. They have already had a large sale in Iowa and adjoining States.

The Christian College of Columbia, Mo., an institution for women, is now in its fifty-second year. It has a splendid new dormitory which cost \$75,000 and a new auditorium which cost \$32,000. This is an excellent college home with an exclusive patronage. It contains schools of music, art, and oratory, and also furnishes the academic degree. Many of the young lady readers of the Kansas Farmer will find this college very worthy of consideration and any who contemplate attending college this fall should not fail to write for catalogue to Mrs. L. M. St. Clair, Secretary, Columbia, Mo.

Thrashing Machinery for the Farmer.—The small thrashing machine has had a large sale in the Northwest the last two years. Farmers have found it most practical to have their grain threshed by small machines, as they will do better work and save all the grain that is oftentimes wasted by the large machines in their hurry in getting from one job to another. By own-

The Colorado Flyer via Santa Fe.
A Convenient Train for Summer Tourists.
Composite Car, Palace Sleepers, Free Chair Cars, Observation Sleeper, Cafe Car between Colorado Springs and Denver.
DAILY, BEGINNING JUNE 1.
Leave Topeka 8.35 p. m. Arrive Colorado early next morning.
This train is in addition to the Colorado Express leaving Topeka 11.50 a. m., and arriving Colorado following morning, and carrying free Chair Cars, Pullman Sleepers and Observation Car. Reduced rates to Colorado and Utah daily from June 1 to September 15.
For particulars and copy "A Colorado Summer," apply to
T. L. KING, Agt., Topeka.
T. M. JAMES,
P. O. Building North Topeka.

A FENCE MACHINE
That combines Simplicity, Durability, Rapidity and Economy. The DUPLEX is made over 100 styles, 50 to 70 rod a day, of Horse-high, Bull-strong, Pig and Chicken-light Fence that combines Strength, Uniformity, Permanency, Reliability and Efficiency AT COST OF WIRE. Machine on Trial. Full information free. Wire of every description at Wholesale Prices. Write today. KITSELMAN BROTHERS, D 37 Muncie, Ind.

the Belle City Manufacturing Company, found on another page of this publication. This firm is located at Racine, Wis., but has branch offices through the Northwest. We recommend our readers to write to them for printed matter, and if interested in the cost of a machine, send for the address of their nearest Northwest branch.

Notice.
To All Whom It May Concern:—Notice is hereby given that on the 8th day of July, 1902, a charter was duly filed in the office of the Secretary of State of the State of Kansas, by the undersigned, incorporating the Kansas Union Life Insurance Company, for the purpose of transacting the business of life insurance.
The names and residences of the Directors are as follows:
Chas. J. Devlin, Topeka, Kans.; Samuel T. Howe, Topeka, Kans.; Alpheus K. Rodgers, Topeka, Kans.; Joab Mulvane, Topeka, Kans.; P. I. Bonebrake, Topeka, Kans.
The place of business is Topeka, Kans.
CHAS. J. DEVLIN,
SAMUEL T. HOWE,
ALPHEUS K. RODGERS,
JOAB MULVANE,
P. I. BONEBRAKE.
Topeka, Kansas, July 9, 1902.

The Home Circle.

KANSAS WHEAT.

(Written for the Kansas Farmer.)

Oh, the biscuits, biscuits, biscuits, In a waving field of wheat!

Biscuits hot, with butter on them! Biscuits sweet with clover honey! Biscuits, light bread, sweet bread, dough-nuts, Crackers, wheatlet, gingersnaps!

Grape nuts, toasted flakes, and "Force" food, Piecrusts, tarts, and apple-fritters, Graham, whole wheat, best White Patent, Cream of wheat and pancake flour!

Food for babies, food for women, Food for laddies, food for maidens, Food for invalids and old folk, Food for manhood in its strength.

Glucose, nitrogen, and phosphates, Starch and sugar and albumen, Brain food, nerve food, food for muscle, Food for cattle—butter-fat!

Good for calves and sheep and turkeys, Good to produce soft goose feathers, Fairly good for dromedaries, Good for camels with soft hair.

Full of wealth to creep the owner, Wealth to send his boys to school, Comforts in the home he's strove for, Joys to her who's helped him win! Oh, such potential energies, In a Kansas field of wheat.

-X-

The Life Beautiful.

FLORA D. REED, ST. CLERE, POTTAWATOMIE COUNTY.

The editor has asked the women, through the medium of the KANSAS FARMER, to answer the questions, what do we need to help us in the "refining and spiritualizing of our menfolk" and how can we live "the life beautiful" ourselves.

If we are to exercise a refining and spiritualizing influence over our menfolk, we will undoubtedly have to begin by living "the life beautiful" ourselves. Precept without practice will never accomplish anything worth recording. We are all responsible, in a great measure, for the moral, mental, and spiritual status of every one with whom we associate. If we are lacking in refinement or spirituality we must not expect to exercise an elevating influence upon others. The "life beautiful" must be lived and its influence exerted from within.

Culture and refinement can not be donned like a garment to be worn only on state occasions, and be productive of any good whatsoever. The garment will surely blow aside, revealing the cloven foot. No amount of pretence, affectation or outward gilding will suffice to conceal the sham. She who rules the ideal home from which emanates the highest type of manhood is not the club woman, the political woman, the masculine woman, in short the new woman, but she who is every inch alive to her duty as wife and mother; who realizes that the physical, spiritual, and intellectual growth of her family are her especial care; whose keen perception and intelligent forethought comprehend each individual's needs and strives for his advancement in that particular line for which his inclination and natural bent direct him. In that home may be nothing to indicate wealth, position, or power but what is infinitely more to the purpose, there is that peace, happiness, and contentment which tend to the production and growth of character. The subject of one of the graduating orations of the Kansas Agricultural College this year was "As a man eateth so is he," which solves, no doubt to the mind of its writer at least, the problem of the perfect man. Indeed there is more in the subject than the unthinking may imagine, yet we would not go to the extreme that a Chicago professor does and say that "a human being's physical peculiarities, mind, and character are determined entirely by what he eats when a child." The Kansas City Journal commenting upon it, ironically remarks that "future Grants and Napoleons will be given a ration of gunpowder and bomb-shells daily, and that rice will be tabooed as a food, its tendency being to make laundries," etc. Seriously, can we expect to send from our homes men Apollo-like in stature, over-topped by a well-balanced head controlled by a heart tender and true, yet brave to do and dare in defense of right and duty; whose physical being is supported on a daily diet of greasy fried potatoes, fat pork and strong coffee? We would not advocate an ethereal diet in support of intellectual superiority, but a "balanced ration" as it were; that which is productive of the greatest good to physical perfection and at the same time not a menace to intellectual growth. The progressive woman of today regards this matter of feeding as of vital importance. Let us hope that at no distant day there will be a more

perfect understanding of the relation of food to brains, to temperament, to a proper adjustment of things spiritual, mental, and physical. Then will come of itself the love of the beautiful, the artistic, the esthetic.

There will be no lack of refinement in that home which is characterized by intelligence, love, and charity; by that bravery and cheerfulness which rise above environments and make home, however plain, a haven of peace and rest. In that home will be found representatives of "the life beautiful" in each of its inmates.

Some Alaska Lore.

A million dollars a month is the estimate made by the Bureau of Statistics of the present value of the market which "frozen Alaska" offers the producers and manufacturers of the United States.

"Commercial Alaska in 1901" is the title of a monograph just issued by the Treasury Bureau of Statistics. In it are presented some striking figures about this (until recently) little explored and little understood territory of the United States. By reason of the application of modern systems of travel and transportation, Alaska is now as accessible as Arizona. Three days of travel by modern ocean steamers from Seattle, among the islands and along the coast which forms the southeastern extension of Alaska, lands the traveler at Skagway; twelve hours by rail over the mountains carries him to the head waters of the Yukon, where comfortable and well-equipped river steamers carry him to the gold field of central Alaska, or down the Yukon river, which is navigable for more than 2,000 miles at this season of the year. From the mouth of the Yukon another comparatively short trip, by steamer, carries him to Cape Nome, the latest and greatest of the gold fields of Alaska.

Gold, fish, and furs are, according to this monograph, the principal industries of Alaska at the present time and they send to the United States \$15,000,000 of their products, \$8,000,000 of gold, \$6,000,000 of fish, chiefly salmon, and the remainder, furs.

The cost of Alaska was \$7,200,000. The revenue which the Government has derived from it since its purchase amounts to over \$9,000,000, and the value of the products are now twice as much every year as it cost. The total value of the products of Alaska brought to the United States since its purchase is, according to the best estimates that the Bureau of Statistics is able to make, about \$150,000,000, of which \$50,000,000 is precious metals, \$50,000,000 products of the fisheries, chiefly salmon, and \$50,000,000 more, furs, chiefly seal fur. Probably \$50,000,000 of American capital are invested in Alaskan industries and business enterprises, including transportation systems. In the salmon fisheries, alone, the companies engaged have a capitalization of \$22,000,000 and the value of their plants, including vessels, is given at \$12,000,000. In the mining industries there are large investments; the great quartz-mill at Juneau being the largest quartz stamp-mill in the world, while several other quartz-mills represent large investments. With the inflow of capital, the development of transportation systems, and the gold discoveries, has come the building up of towns, and the development of cities with modern conveniences of life. Nome City, which is located but a comparatively short distance south of the Arctic circle, has now a population of over 12,000; postal facilities have been so extended that the number of post-offices is now about sixty, and mails are being regularly delivered north of the Arctic circle.

Agricultural possibilities in Alaska have, until within a recent period, been considered of but slight importance. As the country was explored, however, and its conditions of climate and soil studied, its natural products observed, and experiments made with various classes of agricultural productions, it became apparent that the agricultural possibilities of the country, and especially of the south and southeast, where the climate is modified by the Japan current, are of some importance in view of the practicability of furnishing at least a part of the food supply of the population which the varied resources of Alaska seem likely to sustain and make permanent. These observations and experiments lead those who have participated in them to the belief that vegetables in great variety can be produced all along the southern coast and in the valley of the Yukon. The grasses for the support of cattle are abundant, and experiments with live stock thus far justify the belief that this feature of the food requirements of Alaska may be partly furnished by the development

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of stock-farms in the southern sections. In the north vast areas are covered with a moss similar to that upon which the reindeer thrives in other parts of the Arctic regions, and in view of this fact, the introduction of reindeer from Siberia was begun a few years since and has proved successful, about 3,000 now being distributed through northwestern Alaska, and the experiment has advanced sufficiently to justify the confident belief that the reindeer will, within a few years, prove an important feature in furnishing both the transportation and food-supply of northern and northwestern Alaska.

The Governor of Alaska in a recent report states that the area is equal to the combined area of the twenty States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, and Tennessee.

Dearth of Farm Hands and the Cause.

EDITOR KANSAS FARMER:—The Pittsburgh Dispatch recently gave an account of Kansas women compelling tramps to harvest their crops at the points of shotguns, and stated also that the great dearth of farm hands in the wheat belt was due to the fact that hands were only wanted for a month. The Baltimore American saw fit to republish the account from the Dispatch.

The fact is there is a great dearth of farm hands all over the country at all seasons of the year. The dearth is owing to aversion to the soil, which aversion is produced by the schools. For many years past, thousands of articles have appeared in both prose and poetry, asking but not answering, just such questions as those in the following poem by Elwin Hoffman:

THE INCAPABLE. Below him lie the fields he scorns to till, Above him shine the heights he can not reach; The sirens of the dream behaunt him still, And still the burdened ox's groans doth reach Up from the length'ning furrow, that turns down Together hopes and daisies one by one! Incapable! Hell coined that bitter word To be the bearer of a special sting; A sting more keen than felt by those who've erred Against the laws of God's adminis'tring! Incapable! Paused halfway up the height Hell sends its heralds to him with the night. A grievous plight is his, but who's to blame? Where stands the soulless father of the fault? Who sent him lust of power—dream of fame— And taught his soul from low tasks to revolt? Who made him hate his sire because he plods? Who gave him frail desires and fragile gods? The answer to the above question is— The Supporters of the Public Schools.

Our land is filled with these incapables, and their multiplication goes steadily on.

Everywhere males and females are leaving the farms. The negro in the south as well as the whites in the north. In both sections the farmer is continually at his wit's end to obtain help for the fields, and his wife is in the same predicament regarding the help for the house.

A howl has lately gone up from all over Pennsylvania regarding the lack of farm help. An employment agent in Philadelphia said he had 900 calls for farm help and none offering.

The people fail to see that, with the spread of public schools and compul-

sory education, millions more are made into incapables.

Every agricultural paper in the country should at least lay before its farmer readers the public school cause of their troubles. Then, if they choose to sustain the schools still further, they would share the responsibilities with the educators, ministers, the politicians, and, sad to say, the philanthropists.

By the by, every planter of the south should rise up in the condemnation of the Rockefeller-Ogden-Baldwin educational combine that proposes to uplift the South by public school processes. It will damn it. I started the crusade against this combine upon its first appearance. It is now well under way in the South Atlantic States. The editor of the Charlotte (N. C.) Observer writes me: "What you write is the stuff."

FRANCIS B. LIVESEY. Sykesville, Maryland.

[Our correspondent has fallen into the error of supposing that because some kinds of public school education have the faults complained of, therefore all public school education is to be condemned. Radical modifications of educational methods may be needed, but public attention is turning to the reforms needed. Learning that... which one needs to know never makes "incapables."—EDITOR KANSAS FARMER.]

Eve's Apple.

A fruit supposed to bear the mark of Eve's teeth is one of the many botanical curiosities of Ceylon, says an exchange. The tree on which it grows is known by the significant name of "the forbidden fruit," or "Eve's apple tree." The blossom has a very pleasant scent, but the really remarkable feature of the tree, the one to which it owes its name, is the fruit. It is beautiful and hangs from the tree in a peculiar manner. Orange on the outside and deep crimson within, each fruit has the appearance of having had a piece bitten out of it.—California Fruit Grower.

To the above there are two serious objections. First. The Bible says nothing whatever in any place about our Mother Eve having anything to do with an "apple" of any kind. It was the fruit of "the tree of the knowledge of good and evil"—otherwise, curiosity—the satisfaction of knowing by trial, right or wrong—what it tasted like—that tempted her.

Secondly: She did not take a bite and drop the fruit, whatever it was, in this condition, but she gave it to Adam and he ate the whole thing; judging by the way men act nowadays when anything is found that suits the taste of the ladies. They surely know what is good and the men are ver ywilling to eat greedily from the same tree. I do not believe that Adam or Eve left any bitten fruit laying around that might have been perpetuated in Ceylon, which is said to be the Eden of to-day. Eve has already been blamed too much, so let us not believe this latest scandalous insinuation.—H. E. Van Deman, in Green's Fruit Grower.

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The Hessian Fly.

(Continued from page 733.)

very important one, as illustrated by the season of 1899-1900 in the Ohio valley.

Exceptionally, also, this insect may remain dormant in the flaxseed state for a year or more and still bring forth the adult, a provision of nature which is doubtless intended to prevent the accidental extermination of the species. The migrating and scattering brood of adults is the one developed in the fall; the spring brood is less apt to scatter from the field in which it is developed.

The important feature in the life-history of the Hessian fly, from the standpoint of control, is the time of emergence of the fall brood or broods of adults. This arises from the fact that the chief means of preventing loss from this insect is in sowing late enough in the fall to avoid infestation. For the average season or normal conditions, dates at which sowing is comparatively safe have been determined for the principal winter-wheat districts. For example, the dates after which sowing may be safely undertaken in the State of Ohio, as shown by the very careful investigations of Professor Webster, vary over a period of at least a month from the northern latitudes of the State to the southern latitudes, or from approximately September 10 in the north to October 10 in the south. Wheat sown after the dates mentioned, or after intervening dates for intervening latitudes, will germinate, in normal seasons, after the Hessian fly has disappeared and be free from attack.

The question of latitude, however, is not the only one to be considered, since temperature is affected also by altitude, and in mountainous States, like West Virginia, as shown by the very careful studies of Doctor Hopkins, the altitude must be taken into consideration in determining the proper date for planting. The normal safe date for planting must be determined for each locality separately. Ohio farmers are referred to Bulletin No. 119 of the Ohio Experimental Station, by F. M. Webster, and West Virginia farmers to Bulletin No. 67, of the West Virginia Experiment Station, by A. D. Hopkins.

Unfortunately, also, it is not possible to give a uniform date for seeding which may be relied on year after year. The extraordinary development of the Hessian fly and the serious consequent losses to the crop of 1899-1900 have emphatically demonstrated this fact. The loss from the Hessian fly for the crop mentioned has been one of the worst in the history of this insect in America, and probably amounted to fully 80 per cent of the normal yield throughout the infested region, which covered the main winter-wheat districts of the Ohio valley, and amounted to a loss of from thirty-five to forty millions of dollars' worth of grain. The extraordinary multiplication of the fly for the season mentioned resulted from an unusual scarcity of the parasitic enemies of the insect and a series of very favorable weather conditions, the latter, as indicated by Professor Webster, being the long drought of the autumn of 1899, which prevented the normal early hatching of the Hessian fly, and the mild autumn and winter following, which enabled the insects to con-

tinue breeding and ovipositing much later than is ordinarily the case, so that few fields escaped fall infestation. A favorable winter carried these insects through safely, and the enormous number of flies which emerged for the spring brood resulted in all late-sown or other fields which had escaped the fly in autumn being infested by hordes of these insects in the spring; in other words, under the conditions of the season in question all ordinary rules and preventives failed absolutely, and the loss of the wheat crop was almost total.

The breeding of the Hessian fly during the autumn of 1900 continued in some localities very late. Mr. E. P. McCaslin, Seymour, Ind., who has been making very careful study and frequent reports on this insect for this office, supplies data showing that the wheat sown in that locality between October 9 and 15 was badly infested by the fly. The insect began hatching as early as September 1, and continued in evidence until October 1, a supplemental brood appearing after October 22. The winter was so mild that undeveloped larvae were abundant in wheat into the second week of December. A short period of zero weather in the middle of December did not destroy the larvae, but a prolonged cold spell, beginning about December 22, killed most of the larvae that had not passed into the flaxseed stage. That the insect will hatch from the flaxseed stage without long hibernation, if kept in a warm place, was illustrated by material coming into this office which yielded flies in great numbers during January and February, and deposited eggs from which young larvae emerged.

The effect of drouth on the Hessian fly was very interestingly shown by the season of 1899-1900. As pointed out by Professor Webster, a severe dry spell sufficient to prevent the germination of wheat, such as was experienced in the Ohio valley in the fall of 1899, will retard the development of the Hessian fly; but a week or ten days after a drenching rain, following such a dry spell, flies will come forth from the flaxseed stage in numbers. All of these conditions, therefore, must be borne in mind in attempting to determine when it is safe to sow winter wheat, and when the conditions are very unfavorable it will probably be wiser to plant other crops than those which the Hessian fly infests, as indicated in the consideration of preventives and remedies.

Effect on Wheat.—The first indication in the fall of the presence of the fly in wheat is the much darker color of the leaves and the tendency to stool out rather freely. This is very noticeable, and gives the wheat for the time being a very healthy appearance. The leaves are also broader, but the upright central stems are wanting, having been killed by the fly. Later, the infested plants turn yellow or brown and die in part or altogether. The spring brood of larvae attacks tillers or laterals that have escaped the fall broods, awaring the stems and weakening them so that they usually fall before ripening and can not be successfully harvested. The excessive stooling or tillering of wheat attacked by the fly is doubtless due to the natural tendency on the part of the plant to offset the injury by forming new lateral stems, and therefore a wheat that has a natural tendency in this direction is less apt to be seriously damaged by the fly. Other things being equal, also, wheat with stiff, flinty stems is less damaged by fly attack, chiefly because the straw does not bend or break so readily at the point weakened by the spring brood of larvae.

Natural Enemies.—The Hessian fly in the larval and pupal periods is subject to the attacks of important natural parasites—small four-winged flies which develop in the bodies of their hosts. There are several native parasites, and in Europe there are many others, one of which is remarkably prolific, and the department has attempted its artificial introduction into this country. This species, *Entedon epigonus*, has been liberated in several States, and seems to have obtained a foothold, and considerable good may be expected from it. In general the parasites are effective only in limiting damage and are useful where other preventives are neglected, but can never take the place of active measures, where perfect immunity is desired. It is practically impossible to save a field once severely attacked by this fly, and under such circumstances it is better to plow the wheat under deeply and plant to corn or other spring crop. In cases of mild infestation the best procedure is the prompt use of fertilizers, which may enable the wheat to tiller sufficiently to yield a partial crop. Pasturing in fall of early-sown fields is also recommended, and may do some

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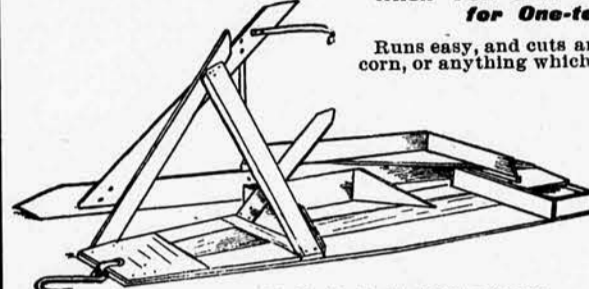
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good by reducing the numbers of the pests.

Somewhat in line with pasturing of early-sown fields is an interesting experiment made in the spring of 1900 by Mr. E. P. McCaslin. Finding that the flies were ovipositing abundantly on wheat which had reached a height of six or eight inches, he conceived the idea of cutting it off closely with a mowing-machine as soon as all the eggs of a spring brood had been deposited, keeping close watch to determine the proper moment. The theory was that the severed tops of the wheat with attached eggs would dry up in a day or two, and the larvae, not being able to move freely, except down the green leaf-blades, would fail to reach the live stubble. Wheat so cut threw out new stalks and gave every promise of a good yield; but, unfortunately for the success of the experiment, the fly was so extraordinarily abundant everywhere in the spring of 1900 that the stubble was reinfested and the experiment came to naught. Nevertheless, under a less extraordinary instance of general fly infestation some benefit might reasonably be expected from the procedure, and it is perhaps worthy of further trial.

By some such means as the above a crop of wheat may be partly saved, but in the main the measures of really practical value against this insect are, of necessity, chiefly in the direction of preventing future injury. These are all in the line of farm methods of control, and are arranged in the order of importance as follows:

Late Planting of Winter Wheat.—As already indicated in the paragraphs on habits and life-history, late planting of winter wheat is undoubtedly the best and most practical means in normal seasons of preventing damage in regions where infestation is to be anticipated, and this is true in spite of the failure of this means of control during the season of 1899-1900. The most that can be advised under this head, however, is to give a general statement covering normal years and climatic conditions. The actual date after which planting may be safely made must necessarily be fixed for each locality separately, and be subject to yearly modification to meet varying seasonal conditions. In a general way, to avoid fly injury, planting should be made in the northern winter wheat districts after September 15 or 20, and in the more southern districts between October 1 and 15. If the right time be selected, neither early enough to be attacked by the fly nor yet so late as to cause danger of winter-killing, much of the damage in normal seasons to winter wheat from this insect may be avoided.

Burning Stubble.—The fact has been noted in the life-history that the second brood develops in the lower joints of the wheat and is left, for the most part, in the field in the flaxseed state at harvesting. All these individuals may be destroyed by promptly burning the stubble. Burning may be more easily effected if a rather long stubble be left, and especially if it be broken down by rolling. If the burning of the stubble be neglected until the rank growth of weeds has sprung up which usually follows harvest, it will be well to run a mower over the fields, cutting off the stubble, weeds and grass as close to the ground as possible, and burning over as

soon as the weeds and grass dry sufficiently. Careful burning will very largely prevent an abundant fall brood of flies, and may be supplemented by burning all screenings of the wheat, if threshing precedes the fall appearance of the fly.

Plowing Under Stubble.—In line with burning, and of nearly equal importance, is turning the stubble under by deep plowing, and afterwards rolling the field to compact the earth and prevent any flies which may mature from issuing.

Rotation of Crops.—The regular practice of a system of rotation in the growth of crops is of the utmost importance in avoiding damage. Its value may be offset at times by invasion from neighboring fields of wheat on other farms, but usually comparative freedom from attack will result, and the benefit will extend to the other crops coming in the system adopted in checking the insect enemies of these at the same time. In seasons like that of 1899-1900, and possibly also 1900-'01, where the fly is very generally present, rotation of crops may fall very largely in being protective, and it may be even necessary to abandon wheat planting for a year over an entire county or State. Undoubtedly the Hessian fly can be starved out almost completely by the abandonment of the culture for one year of the crops in which it breeds, namely, wheat, rye, and barley, and occasions will probably arise again when this course will be advisable. To gain the full benefit of such a procedure, all volunteer wheat, rye, or barley must be destroyed.

Trap or Decoy Plantings.—One of the earliest preventives recommended, and one of considerable value, is the early planting of narrow strips of wheat to act as decoys to attract the flies, with the object of turning the infested wheat deeply under with the plow in late fall. This procedure will greatly reduce the numbers of the pest and should give greater immunity to late-planted wheat.

Destruction of Volunteer Wheat.—The supplemental fall brood antedating the principal brood will come to nothing if all volunteer wheat be plowed under or destroyed within a few weeks after its appearance. This is of especial value in the North, where spring wheat is grown, and where the brood developed on the volunteer wheat may be the principal means of carrying the insect through the winter.

Growth of Resistant Wheats.—As indicated in the paragraph, "Effect on Wheat," the importance of selecting varieties which are less injured by the attacks of the fly will be at once apparent. Such wheats are those having coarse, strong stems, and varieties which tiller freely, or develop numerous secondary shoots. Among such wheats are the Underhill, Mediterranean, Red Cap, Red May, Clawson, etc. No wheats are, however, absolutely "fly proof."

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(Talk No. 7.)

A Mistake.

There is a popular opinion that glasses should never be worn so long as the eyes can possibly get along without them. There was never a greater mistake. The very first symptoms of defective eyesight, the first indication of fatigue, should be recognized as Nature's call for help. To persist in forcing the eyes to perform work too great for their endurance is simply an abuse of the most precious sense we have. I believe that a greater percentage of diseases of the eye is brought about by this habit than from all other causes combined. If you have the slightest suspicion that your eyes are not perfectly correct, I want to look them over. I want you to feel at liberty to consult with me at any time. If you need glasses, I will furnish them at a reasonable cost. If not, I will charge you nothing.

My exclusive attention is given to fitting glasses.

CHAS. BENNETT,
OPTICIAN,

730 Kansas Ave., Topeka, Kans.

ESTABLISHED 1879.

WEEKLY WEATHER CROP BULLETIN.

Weekly weather crop bulletin for the Kansas Weather Service, for the week ending July 15, 1902, prepared by T. B. Jennings, Station Director.

GENERAL CONDITIONS. While the temperature has ranged slightly below the normal the rainfall has been excessive. There were, practically, three centers of excess in rainfall and three of deficiency; the former centered around Morton, Jewell, and Marshall, while the deficiencies were found in the extreme northwestern and southeastern counties and the central portion of Shawnee.

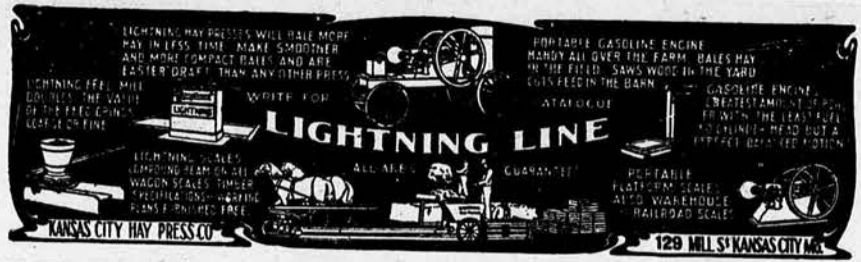
EASTERN DIVISION. The heavy rains in the northern counties have swollen all streams north of the Kaw. The Blue and Kansas rivers overflowed in places and carried away many shocks of wheat and oats. Wheat in shock is sprouting or is otherwise damaged by the rains and damp weather in several of the northern counties; it is being stacked in some of the central and southern; threshing from the shock is progressing rapidly...

fodder crops making rapid growth; wheat and oats stacked; fall plowing begins soon. Chautauqua.—Oats yielding 40 to 60 bushels per acre, wheat 30 to 25 bushels; second crop alfalfa cut; cutting fine crop of hay; flax being cut; corn doing fine; early plums nearly gone, late ripe.

Cherokee.—All crops doing well; corn improving; wheat yielding 7 to 25 bushels per acre. Coffey.—Some cultivation of corn, some wheat a loss on account of wet fields; hay being cut. Crawford.—Some corn weedy, but about nine-tenths in good condition; threshing shows wheat 18 to 30 bushels per acre, oats, 30 to 60, quality good; hay excellent; plums ripe, trees loaded; apples good; tomatoes fine.

Elk.—Corn will soon need rain; stock doing well on pastures; cutting flax. Franklin.—All crops doing well. Geary.—Much damage to wheat and oats by high water and rains, wheat growing in shock; corn doing fine, tasseling, silking, and setting, heavy yield indicated.

Jefferson.—Crops in bottoms badly damaged; fields too wet for cutting oats; that in shock in bad condition. Johnson.—Wet week; wheat growing in shock, very little in stack; timothy haying delayed by rain; blue grass in shock; corn rapid growth. Leavenworth.—Harvest done, threshing progressing; all crops looking well; potatoes fine;



fine yield; corn dark green color, good stand, one-half laid by, some tasseling, sweet corn on table; apples growing nicely, some trees heavy laden; meadows and pastures fine and cattle doing well; some early potatoes rotting in ground; still planting late potatoes and corn. Wilson.—One-third of wheat not cut on account of rain; corn good growth but weedy; flax good; pasture and hay grass fine; oats look well and wheat threshed a good yield; potatoes good.

MIDDLE DIVISION. Wheat harvest is over, except in some of the northern counties where it was retarded by rain, and threshing from the shock has begun in many of the counties, developing poor yields in some counties, fair yields in others. Oats harvest delayed by rains in the northern counties, and the crop has lodged badly; a good crop in the central and southern counties. Grass is fine. The corn prospect is very good; the corn is growing rapidly and has good color; it is in roasting ear in the south. The second crop of alfalfa is growing well, and is being cut in some counties. Potatoes are very good, though some are rotting in Saline, Clay, and Washington. Apples are good in Ottawa, and the early are ripe in Washington; they are dropping in Barber, and some have blown off in Clay. Plums are ripening in Barber.

Barber.—Apples dropping; plums ripening; corn, forage, and alfalfa making rapid growth; cattle in fine condition; threshing. Barton.—Wheat harvest over; threshing from shock with poor yield; cutting hay; grass good; ground fine for fall plowing.

Clay.—Much damage by continued rains and high water; oats badly lodged; fields too wet for harvest; corn growing nicely, not much damaged; potatoes rotting; apples blown down. Cloud.—Harvest retarded by soft ground; wheat not half cut, over ripe and damaged; oats rusty and chaffy; crops in bottoms badly damaged; heavy second crop alfalfa ready to cut.

Ellsworth.—Wheat nearly harvested; oats crop good; corn doing well; pastures and hay fine. Harper.—Threshing delayed by rains; wheat of poor quality; oats crop good; corn in fine condition. Jewell.—Corn growing rapidly; wheat harvest nearly finished; fine oats crop nearly ready to cut; alfalfa making good second crop; pastures fine.

Kingman.—Threshing hindered by rain; corn in good condition; potatoes very good. Lincoln.—Much wheat too weedy to cut; corn growing nicely; oats badly lodged. McPherson.—Harvest over, threshing begun, yield and quality fair; oats big crop; corn prospects fine; second crop of alfalfa heavy, being cut; potato crop heavy.

Ottawa.—Wheat almost harvested; oats damaged by wind; corn doing finely; forage crops and alfalfa fine; potatoes best in years; fruit, except apples, not good. Phillips.—Harvest about finished; corn in good condition.

Pratt.—Some damage to wheat and fruit by hail in the southeast; harvest finished, threshing begun; quality of wheat poor, yield light; corn in roasting ear. Reno.—Good rains; threshing begun; wheat fair yield and quality; oats good; corn looking well. Republic.—Some pieces of wheat not yet cut, that in shock sprouting; oats badly lodged.

Rice.—Good second crop alfalfa being put up; potatoes good crop, but many rotting; wheat about harvested, poor quality; corn doing well.

Russell.—Corn being cultivated and doing well; forage crops doing nicely; pastures and hay land good. Saline.—Much wheat uncut and in shock injured by wet weather; oats harvest almost finished; corn doing well, some weedy; potatoes good.

Sedgwick.—Pastures and hay fine; corn in roasting ear, promises large yield; some damage by hail. Smith.—Many fields of wheat very weedy; corn and all other crops doing nicely; grass good and stock doing well; some damage by hail. Stafford.—Some wheat threshed, poor grade; corn promises good yield.

Washington.—Oats dead ripe and badly lodged; wheat sprouting in shock; corn rapid growth, early tasseling; potatoes good crop; early apples ripe; grapes good crop.

WESTERN DIVISION. Wheat and barley harvest about over. Oats harvest finished south, begun north. The second crop of alfalfa is ready to cut in Sheridan, and is being cut in many counties; some is being left for seed in Finney; the crop is light in Kearney but fine in Wallace. Grass is good. Corn is doing well and in Decatur is tasseling; it needs rain in Thomas. Forage crops are doing well. Plums are ripening in Kearney, a good crop. Apricots and peaches were knocked off by hail in Morton. Cattle are doing well.

Clark.—Cool and cloudy, good growing weather; harvest retarded by heavy winds. Decatur.—Harvesting well advanced, threshing commenced; quality of grain excellent, yield fair; corn tasseling, prospects fine. Finney.—Rain needed; cutting second crop alfalfa well advanced, some left for seed; fruit light.

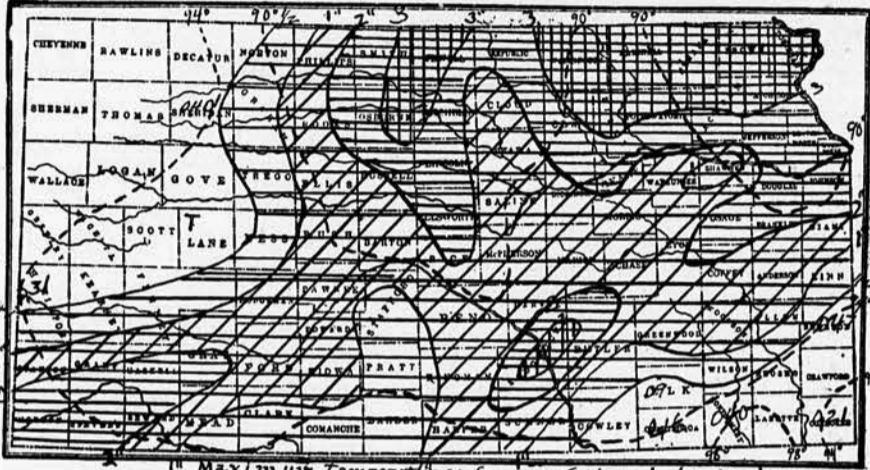
Ford.—Fine growing week; wheat, barley, and oats about harvested; corn looks fine; prairie grass good and cattle in good condition. Graham.—Cool week; harvesting done; threshing commenced; yield good and quality fine; stock doing well.

Hamilton.—Good growing weather with plenty of moisture west, rain needed northeast portion. Kearney.—Very dry; second crop alfalfa light; good crop plums ripening. Lane.—Corn and forage crops doing well; second crop alfalfa, good yield, being cut; wheat ripens slowly, some to cut yet; some damage by hail.

Morton.—Apricots and peaches torn off by rain and hail; shower beneficial to grass and forage crops. Norton.—Fine growing week; oats harvest begun; wheat in shock without damage, prairie grass hay on market; cutting second crop alfalfa; stock doing well.

Sheridan.—Wheat a fine quality; alfalfa ready to cut; corn looking well; pastures good and stock doing nicely. Thomas.—Grain in fine condition, harvest nearing completion; corn needs rain; Kafir and cane growing rapidly; second crop of alfalfa being cut. Wallace.—Second cutting alfalfa fine crop; harvest of barley, rye, and wheat finished; range grass good; irrigated gardens fine; unirrigated crops need rain.

Rainfall for Week Ending July 12.

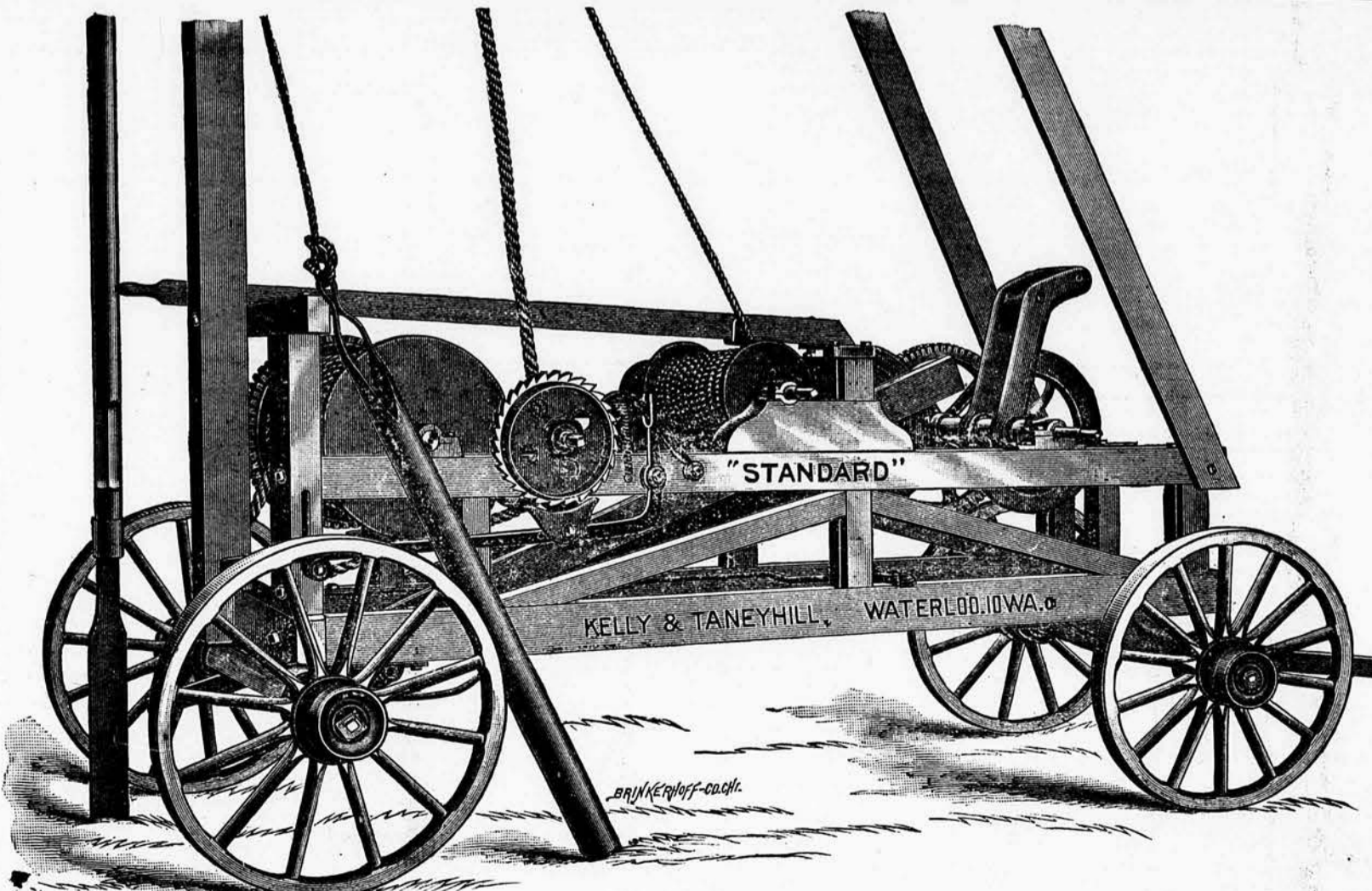


SCALE IN INCHES.

Less than 1/2. 1/2 to 1. 1 to 2. 2 to 3. Over 3. T. trace.

ly where the conditions are favorable, giving fair yields ranging from 10 to 25 bushels in Chautauqua, 7 to 25 in Cherokee, 18 to 30 in Crawford, 20 to 30 in Linn, and averaging 20 bushels in Woodson. Oats are generally in the shock, a fine crop; some threshing showing fine yields. Corn has grown rapidly, it is in the silk in Allen, has silked and is filling in Chase, is tasseling and silking in Geary, is in the roasting ear in Chautauqua, while in Linn the early corn is in the roasting ear. The corn prospect at present is unusually fine, though corn is needing rain in Elk. Flax is good in Wilson, is ripe in Allen, and ready to cut in Linn. Potatoes have been injured in several of the northern counties by the heavy rains. Haying is progressing in Chautauqua, Coffey, and Woodson, and is about over in Allen. Apples are good in Crawford but are dropping in Leavenworth; in Shawnee some trees are heavily loaded. Late plums are ripe in Crawford and ripening in Chautauqua. Plowing for fall wheat has begun in Allen, Coffey, and Montgomery.

apples dropping; few peaches and plums; stock doing nicely. Linn.—Wheat mostly in shock; threshing progressing favorably; oats being harvested; flax about ready to harvest; wheat yielding 20 to 30 bushels per acre; corn growing rapidly; early corn in roasting ear. Marshall.—Wheat, oats, and potatoes damaged by too much rain; corn prospect fine; tame grass and pastures good. Montgomery.—Threshing in progress, yields and qualities variable; oats good; corn doing fine; pastures good; hay a good crop; plowing for fall wheat commenced. Nemaha.—Small grain, especially wheat, damaged by excessive rain; some corn growing weedy; very little wheat in stacks; oats mostly standing; corn prospects good; vegetation rank. Osage.—Corn in fine condition and growing well; alfalfa being cut second time; pastures good. Pottawatomie.—Great loss of crops in river bottoms. Riley.—Wet week; very little work done; crops greatly damaged by high water. Riley.—Crops greatly damaged by high water; wheat being stacked; ground too soft to harvest oats; corn fine; hay promises a good crop. Shawnee.—Oats in shock and promise very



The Kelly & Taneyhill Co., Waterloo, Iowa, established in 1867, are pioneer manufacturers of well drilling machinery. Their card appears in our columns in which they advise our readers that their machines are portable and drill any depth both by steam and horse power. They invite our readers to send for free illustrated catalogue of forty-two different styles. The writer hereof considers this firm thoroughly reliable.

When writing advertisers please mention the Kansas Farmer.

Grange Department.

"For the good of our order, our country, and mankind."

Conducted by E. W. Westgate, Master Kansas State Grange, Manhattan, Kans., to whom all correspondence for this department should be addressed. News from Kansas Granges is especially solicited.

NATIONAL GRANGE.

Master.....Aaron Jones, South Bend, Ind.
Lecturer.....N. J. Bachelder, Concord, N. H.
Secretary.....John Trimble, 514 F St., Washington, D. C.

KANSAS STATE GRANGE.

Master.....E. W. Westgate, Manhattan.
Lecturer.....A. P. Reardon, McLouth.
Secretary.....Geo. Black, Olathe.

Do We Make as Much as We Should of Our Opportunities in the Grange?

MRS. ANNIE LINN, AT MUSKINGUM CO., O., POMONA.

How often do we hear the remark made that it does not pay to belong to the Grange—there is no money in it. If that is so, why does it not pay? Who is to blame? How many have investigated the matter? As there are always two sides to a question, let us see which one is right, the chronic grumbler or the Grange.

Let us review "The Declaration of Purposes of the Grange" and see what our opportunities are. United by the strong and faithful tie of agriculture, we mutually resolve to labor for the good of our order, our country, and mankind. We heartily endorse the motto, "In essentials, unity, in non-essentials, liberty, in all things charity." We shall endeavor to advance our cause by laboring to accomplish the following objects: To develop a better and higher manhood and womanhood among ourselves. To enhance the comforts and attractions of our homes, and strengthen our attachments to our pursuits. To foster mutual understanding and cooperation. To maintain inviolate our laws, and to emulate each other in labor, to hasten the good time coming.

Do we endeavor to develop a better and higher manhood and womanhood among ourselves? Have we the charity to do as we would be done by, to put ourself in their place, to try to elevate the farming population in the scale of intelligence, to instill into the minds of the young more correct ideas of morality, and to cement in one common fraternal brotherhood and sisterhood all who are engaged in agricultural pursuits? Are we working together for our mutual protection. It has been said that a man's first duty is to his home and family, the second to his government, and the third to better the condition and advance the interest of his chosen occupation.

There are conditions existing that must be met and overcome to obtain results desired by the farmer. What legislation is needed, must be secured by his combined efforts. As an individual among seventy millions of people he is infinitesimally small and hopelessly helpless to do one thing to obtain relief. Hence the necessity of uniting and working together to be able to maintain our laws inviolate, to emulate each other in labor, and to hasten the good time coming.

Our educational opportunities are numerous. Education is the foundation-stone of our order. The Grange accepts the broad view of the word education and applies it to every line and department of its work. It seeks to overcome the hindrances to success in farm life, and gives the farmer an opportunity to become the peer of any man in other classes, in ease of manner, fluency of speech, practical common sense and logical conclusions in regard to current topics and questions of State or national importance.

No other organization extant possesses such valuable opportunities. Are we making the most of them? The Grange is an agricultural college where political economy and domestic art are taught in a practical way. We must learn from others; their observations and experiences are invaluable to us. Individually we can hope to get but little from the great storehouses of wisdom and knowledge. The laboratories of nature are too numerous and life is too short to enable us to make a special study of all the soils, plant growths, food nutrients and animal life; we must depend on the knowledge and experience of others.

The agricultural colleges, experiment farms, farmers' institutes, all testify to this fact, and offer us opportunities to benefit us, if we will only accept them.

There is nothing equal to the Grange in giving opportunities to the boys and girls on the farm. In every age and condition of life, the development of the mind is carried forward to a greater or

HOT WEATHER WEARINESS

This misery is caused by bad digestion which has clogged the system with impurities. The liver is overworked, the kidneys weak and the bowels irregular, producing low spirits, tiredness, poor appetite, unrefreshing sleep, loss of energy and ambition. And, what is worse, it breeds diseases that are serious.

PRICKLY ASH BITTERS

IS A THOROUGH SYSTEM CLEANSER.

This great purifier exercises its reviving influence in every part of the body. Relaxes the bowels and urinary organs, drives out badly digested food, cleanses the system of impurities, sets the whole internal organism to working smoothly and harmoniously thereby creating new life and energy. It is the best known remedy for removing that dull bilious feeling so common in hot weather.

Price, \$1.00 Per Bottle.

SOLD AT DRUGGISTS.

less extent, and the experience of others of mature years, who have made a success of farming, may

Ope the way and blaze the tree bark,
Snap the twig, and mark the pathway,
For the youth that now is waxing,
For the good time that is coming.

Postal Banks in Belgium.

Belgium is little, but it has a good record with respect to its postal savings-banks. These banks were established in 1865, and in 1896 there were 881 of them scattered over the 11,373 square miles of Belgian territory and furnishing safe saving facilities for the thrifty people of that country.

Under the savings-bank act of 1891 interest on sums not to exceed 3,000 francs (\$579, the franc being worth 19.3 cents) is paid at the rate of 3 per cent. So popular are the postal savings-banks that in 1890, twenty-five years after they were established, there were 731,057 depositors out of a total population

Old line rates on \$1,000 for 5 years are.....	17.50
Saving to our patrons in six months.....	1,644.75
No. of losses in six months.....	9
Fire loss.....	\$724.85
Tornado.....	549.00
Lightning.....	59.67
	1,333.52

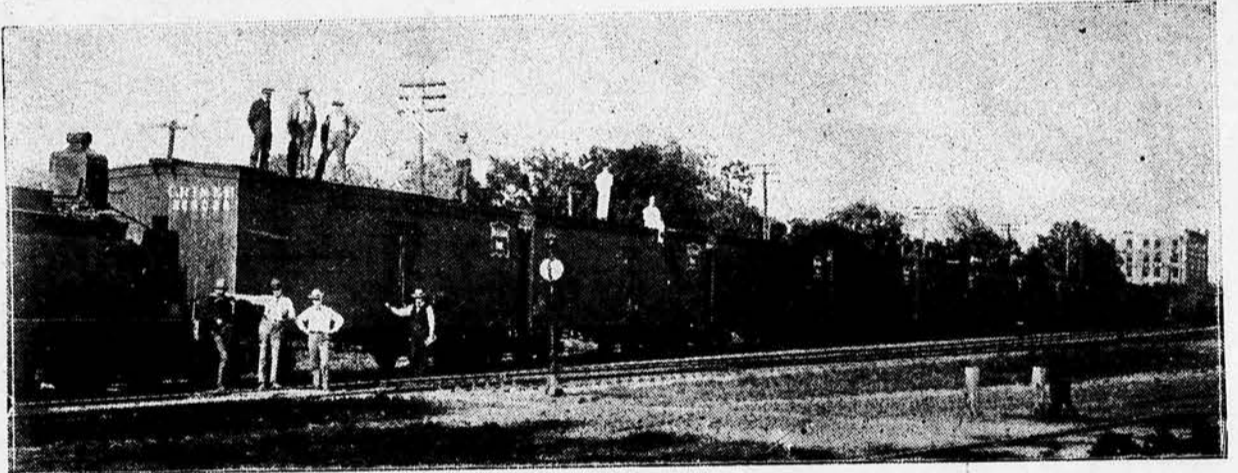
Here is a saving of nearly fifty per cent on insurance that is not a theory but a demonstrated fact and though we can scarcely hope always to be so fortunate, yet for thirteen years the average cost has been very close to these figures.

A Kansas Butter Business.

On Saturday night July 5 the first train load of butter that has ever left Kansas was shipped to the New York Navy Yard from the plant of the Continental Creamery Company of this city. The train consisted of twelve cars and the aggregate net tonnage was 300,000 pounds at an approximate value

butter but as to the dispatch with which the contract was filled. The filling of this contract in the manner in which it was insured other big contracts coming to Kansas which will be a source of great revenue for the dairy farmer of the State.

The Continental Creamery Company's plant in Topeka has a capacity of 50,000 pounds of butter per day. The day of this shipment was a record breaker. Five cars of cream were received at the plant besides the twelve cars of butter shipped. The milk season is now at its highest and the receipts of cream are taxing the plant to its utmost. The creamery building covers an area of 40 by 100 feet, four stories high and has an actual working area of 160,000 square feet besides storage rooms, box and tub rooms, and supply department. An average of 110 persons are employed in the creamery aside from office force. The separating room of the plant is in operation



The First Trainload of Kansas Butter.

of 6,069,321—a savings-bank account for every eighth person in the kingdom. Six years later, the population having increased about a half a million, there were 1,238,601 depositors with accounts in these banks. Every fifth person had a savings-bank account—practically one for every family.

These banks are for the people. Rural letter-carriers are allowed to accept deposits for those who find it inconvenient to go to the bank, although the first deposit must be made in person, in order to sign the required declaration concerning his knowledge of the laws and regulations. Postage-stamps may be used in making small deposits.

The result of the accumulation of more than a million deposits is seen in the amount of money on deposit at the end of 1896, the latest year for which figures are at hand. At that time the banks held 453,429,304 francs—about \$90,000,000, or \$75 for each depositor.—Grange Bulletin.

Report of the Fire and Tornado Association.

A letter from I. D. Hibner, secretary of the Patron's Fire and Tornado Association, contains the following account of its business for the last six months:

Total risk Jan. 1, 1902.....	\$1,857,000.00
Total risk July 1, 1902.....	2,014,250.00
Net gain in six months.....	157,250.00
Cash in treasury Jan. 1, 1902.....	3,128.95
Premiums collected in six months.....	1,705.28
Paid on losses.....	1333.52
All other expenses.....	401.35
Balance in treasury July 1.....	3,099.86
Average risk for six months.....	1,935,600.00
Cost on each \$1,000 during six months.....	.90
This would make a 5-year rate on \$1,000 of.....	9.00

of \$75,000. The butter was all Kansas product, made from cream gathered from 200 plants which the Continental Creamery Company has scattered over a great part of the State. The shipment was to cover a contract with the United States Government for butter to supply the New York Navy Yard and was by far the biggest contract ever filled by a single creamery. Heretofore these contracts have been given to jobbers who parceled them out over great stretches of land in the east. These contracts have generally been filled by snippers from Ohio, Indiana, Illinois, Wisconsin and many other heavy dairy States. The size of the Continental Creamery Company's plant and their facilities for filling a contract of this kind was the principal reason for the placing of the contract in Kansas.

This butter was packed in three-pound tin cans, hermetically sealed, and put up at the rate of 10,000 pounds per day. The special machinery was designed for the packing of this butter and the sealing of cans. Twenty-four three-pound tins were packed in a box with sawdust. The boxes were made with screws instead of nails and bound with strap iron.

R. A. Pearson, Assistant Chief of the Dairy Department at Washington, attended to the inspection of the butter and Major Lang of the Interior Department attended to the shipment. The butter was inspected both for specifications of packing, and as to purity, sweetness, quality and hygienic conditions. Both Major Lang and Mr. Pearson were profuse in their praise of the way this contract was handled. Not only with regard to the quality of the

twelve hours of every day in the year, twenty-five cream ripeners with a capacity of 1,500 pounds each are in operation in the ripening room and are filled many times daily, six combined churns and butter workers are kept busy in the churning room. The churning room and ripening room run night and day every day in the week.

All machinery is run by electricity which insures steadiness of motion and does away with all heat which comes from steam power. Cream is received from 200 branch stations scattered throughout Kansas. At these points whole milk is received and cream is separated and pasteurized and prepared for shipment and reaches Topeka in the company's own refrigerator express cars operated over three principal lines of railroad. Besides cream so shipped, large quantities of cream are shipped locally.

Of these branch houses more than 15,000 farmers are patrons and the aggregate sum paid by this company to the Kansas farmer for milk in the month of June amounts to \$200,000. A large number of small creameries have found it unprofitable to conduct their business on a small scale and are now selling their cream product to this company.

In connection with the butter business this company operates twenty-three cheese factories scattered over the State. The Continental Creamery Company placed the cheese business of the State on a strictly commercial basis and made Kansas cheese known to the markets of the world. Cheese business of Kansas is rapidly growing in importance and the production of

this company alone is about 200,000 pounds per month.

In territory where this company has no skimming stations farmers are buying hand separators and ship their cream direct. A large number avail themselves of the opportunity of getting milk checks and the number of these hand separator shippers is rapidly increasing.

In the Dairy.

Conducted by D. H. Otis, Professor of Dairy Husbandry, Kansas Experiment Station, Manhattan, Kansas, to whom all correspondence with this department should be addressed.

Fourth Report on Cow Test Experiment.

For March, April, and May records see KANSAS FARMER for April 10, May 15, and June 26, respectively. The following is the record for June:

No.	Name of cow.	Selected by—	Fresh—	Milk, lbs.	Yield Test, lbs.	Butter-fat, lbs.	Grain consumed, lbs.	Judge's rank for profit
243	Cowslip	J. W. Bigger	Nov. 3, '01	658.9	4.65	30.64	180	3
236	Haster	E. C. Cowles	Dec. 10, '01	793.0	4.2	34.10	180	1
244	Rose of Cunningham	J. W. Cunningham	Jan. 28, '02	1,055.5	3.45	36.41	206	2
238	Clover Leaf	M. L. Dickson	Jan. 12, '02	593.9	3.7	21.97	90	7
245	Molly	A. H. Diehl	Jan. 20, '02	742.5	3.9	26.73	120	5
241	Rose of Industry	C. Elssasser	Jan. 15, '02	664.6	3.9	25.92	120	8
240	Daisy Bell	S. A. Johnson	May 3, '02	999.3	3.45	34.48	180	9
246	Floss	C. C. Lewis	Oct. '01	438.3	5.45	23.89	120	6
242	May Queen	G. W. Priest	Dec. 25, '01	613.0	5.35	31.80	180	4

RECORD FROM MARCH TO JUNE INCLUSIVE.

No.	Name of cow.	March		April		Yield May		June		Total	Grain consumed, lbs.	Roughness consumed, lbs.
		Milk, lbs.	Butter-fat, lbs.	Milk, lbs.	Butter-fat, lbs.	Milk, lbs.	Butter-fat, lbs.	Milk, lbs.	Butter-fat, lbs.			
243	Cowslip	761.6	33.89	762.1	32.00	797.5	35.88	658.9	30.64	2,980.1	132.41	865.5
236	Haster	849.5	32.28	743.7	29.00	878.4	36.01	793.0	34.1	3,264.1	131.39	891.0
244	Rose of Cunningham	1,200.1	36.00	1,090.1	35.97	1,241.2	41.58	1,055.5	36.41	4,586.9	149.96	948.0
238	Clover Leaf	733.1	21.62	642.9	20.25	745.7	23.86	593.9	21.97	2,715.0	87.70	592.5
245	Molly	824.0	25.95	726.8	24.34	830.3	29.47	742.5	26.73	3,123.6	106.49	672.5
241	Rose of Industry	802.9	25.27	791.5	26.91	838.1	33.10	664.6	25.92	3,096.2	111.20	672.5
240	Daisy Bell					876.4	29.79	999.3	34.48	1,875.7	64.27	337.0
246	Floss	508.6	25.18	477.0	25.04	564.6	30.49	438.3	23.89	1,983.5	105.10	659.5
242	May Queen	630.3	30.88	582.8	29.43	687.3	35.39	613.0	31.8	2,513.4	128.50	839.5

No hay was fed during June. All the cows had access to tame grass and oat pasture day and night. The amount of grain varied with the amount of milk and butter-fat produced, the aim being to give them what they will consume profitably in keeping up the milk flow.

Rose of Industry was bred June 4 to the Guernsey bull, Shylock of Darlington 4579. May Queen was rebred June 8 to the Jersey bull, Brown Elsie's Grandson 60412.

The horn-fly has been a torment to all classes of cattle during June and it will be noticed that all the cows except Daisy Bell (she being fresh) fell off in milk yield.

For the four months under consideration these cows have held nearly the same relative rank for total production of butter-fat, Rose of Cunningham first, Cowslip second, Haster third, and May Queen fourth. Molly and Floss have alternated for sixth place. Daisy Bell has been giving milk for only two months.

The final test as stated by the judges is to be based on the element of profit, in which case the value of the skim-milk and the cost of feed are to be considered. These latter points have not been considered in the monthly reports but will be in the final windup.

D. H. O.

Conclusions Drawn from Prominent Dairymen's Opinions Concerning the Value of a Good Sire.

E. B. HALL.

Mr. O. H. Simpson, of Ford County, says it is not right to use inferior bulls on pure-bred cows. If it is ever done it is by some one lacking the means to purchase a better one or one who does not know a good sire when he sees one. Mr. Simpson says it is nothing short of a crime to castrate such calves, so long as there is one farmer left who will use a bull sired by a Hereford out of a Jersey cow, as came under his notice a few weeks ago.

A party in charge of a creamery showed Mr. Simpson the bulls that the farmers were using, only four used pure-bred bulls of any kind, all the rest used just bulls, anything to get the cow with calf.

Mr. J. F. Claggett with an article in the Breeders' Gazette says that all calves not coming up to the standard should be castrated. And if they do not castrate them and the farmer thinks they are all right, he should be made to have a certificate of registration of same.

The trouble is that man and nature can not always get together. Man is not always able to judge all the latent qualities possessed by an unfortunate animal. Many good animals have been buried by belonging to the wrong man. There is a little article in the report of the Kansas State Board of Agriculture which says that a good grade cow may yield as much milk and butter as a pure-blood but a grade of any kind has

not the power to transmit its qualities to its offspring as has the pure-blood for the reason that the latter has received qualities for which the breed is noted through a long series of years.

When you are selecting a sire for beef or dairy you ought to trace back and find out what kind of beef or dairy animals were the ancestors. If they were not very good you had better not take them to breed up a herd of milch cows or beef cattle. At the Kansas State Agricultural College the cows Zargola and Zastona show you that they did not possess very much milking quality. The ancestors of these cows probably were not a milking strain. It does not pay to breed a dairy cow to a scrub bull or to a bull of the beef type nor should you breed a beef cow with a dairy bull. You will find out in the end that you can not have a beef cow and a dairy cow at once. It will not pay to raise a calf of the best beef type for a dairy cow

These qualifications when exercised at a skim station should be paid for.

When a merchant wants to develop a new country, he does not send his cheapest traveling men there but his very best, even if their sales do not come near paying expenses for the first year or two, and we believe that this idea might be followed with advantage in the skim station system.

We want to say, that any profession is what we make of it and that because a man does not have a chance of sending butter to the convention and winning official honors, he is nevertheless as important as the mainspring in the watch in producing good butter.

Any good buttermaker will acknowledge that it is easy to make good butter from good cream and on the skim station operator does it depend whether he shall succeed or not.

The skim station operator may in one sense be compared with the stokers

and engineers down in the large men of wars, who do their work under far more trying conditions than the gunners on deck, who get the excitement and the glory.

The skim station operator gets no sociable calls from the perennial salt-color-tub-agents with their more or less fragrant cigars offered and their pleasant and very often instructive gossip from other creameries.

They get no subtle flattery and funny stories from the eloquent commission solicitors to break the monotony of their work.

A steady grind of giving, giving, and but seldom receiving these important mental refreshments is the doom of the skim station operators.

SHARPLES
Cream Separators
Have Tubular Bowls,
no disks, easy to run, reliable,
durable and effective. Catalog 155
and treatise, "Business Dairying"
free. The best dairymen say they are
the best separators.
Sharples Co., P. M. Sharples,
Chicago, Ill., West Chester, Pa.

DE LAVAL

CREAM SEPARATORS

For twenty years the World's Standard
Send for free catalogue.
The De Laval Separator Co., 74 Cortlandt St., N. Y.

And when the butter made from the cream (from milk which he has so persistently improved by his work among the patrons and by close selection) which he has so carefully prepared for shipment, get a premium, his name is not mentioned, and he gets neither glory nor cash.

Verily, if we put ourselves in his place we can not but sympathize and urge him to put a greater value on his work by doing it in such a way as to exact it. But this is not done by rushing through cleaning up and going fishing, hunting, loafing, or courting, but by putting in an honest day's work in the interest of his employer.

This is not done by reading novels or talking politics but by reading dairy papers and studying problems of interest to his patrons, and by using papers for mutual exchange of feelings and experiences.

Skim station operators, let us hear from you, show us that you are alive and awake.—New York Produce Review and American Creamery.

Alfalfa as a Substitute for Bran.

A Texas dairyman has found that he can use alfalfa hay as a substitute for bran, with good results in feeding milch cows. As a test he substituted, for three weeks, an equal quantity by weight, of cut alfalfa hay, for the bran he had been feeding. The cows gave an increased yield of both milk and butter as a result of the change to alfalfa. The alfalfa was cut to half inch lengths. The analyses of bran and alfalfa show a composition almost identical and it is not to be wondered that the feeding trial should show the same results. The dairyman who has a few acres of alfalfa can be very independent of all kinds of combinations that tend to raise the cost of feed unduly.—F. G. Short, in Hoard's Dairyman.

If you have no appetite for your meals something is wrong with your digestion, liver, or bowels. Prickly Ash Bitters cleanses and strengthens the stomach, purifies the bowels and creates appetite, vigor, and cheerfulness.

A RECORD BREAKER.

The long list of new patrons that were influenced by the experience of their neighbors to ship us their cream in May, and the sudden change of hundreds to this market since pay day in June, all testify to the merits of our system and is farther proof that these cuts represent the keys that unlock the safe containing ALL the money that is to be had in the dairy business.

They are the Corner Stones of a modern, live, wide-awake, up-to-date 20th Century Creamery Business

They are the gateway to the Dairyman's Klondike which he has been seeking for forty years as he wandered through the gathered cream and skimming-station wilderness. They remove difficulties and make dairying profitable. This is the business. This is the year. This is the plan, and we have the market.

Remember,

We Want Your Cream

Write to us immediately. We are "The Pioneers" of the plan that increased the revenue of the Kansas and Missouri Dairyman one-quarter Million Dollars in one Month.

BLUE VALLEY CREAMERY CO.,

ST. JOSEPH, MISSOURI.

Brain Markets.

Conducted by James Butler, Secretary of the Farmers' Co-operative Grain and Live Stock Association.

"The human race is divided into two classes,—those who go ahead and do something, and those who sit still and say, why wasn't it done the other way."—Oliver W. Holmes.

The Way to Win Success.

The way to win victory for the Farmers' Co-operative Grain and Live Stock Association is to persevere on the lines on which we started; stand firmly together; broaden out, improve, and amend the work of our own association when it is necessary. Do one thing at a time and remember that which grows slowly endures.

Stand up for and work with the majority. Any other policy means division, weakness, disintegration, and failure. The little flurries, side organizations, and efforts to divide us will accrue to our benefit and strengthen us when we show that we have the nerve and back-bone necessary to withstand it. After it has subsided we will be stronger. Don't be discouraged if the weak points in our ranks are broken.

Impatience is a weakness and impatient people never accomplish any great undertaking. If we do one thing at a time and do it well all branches necessary to the success of our industries will be reached in succession. We did not start out to build up a one-man movement; we have laid the foundation for a farmers' movement on cooperative lines to be owned, controlled, and operated in their interests.

Cooperation.

Farmers are beginning to realize the benefits of mutual protection in selling their produce. By thoroughly organizing, the wheat-growers of one section in Kansas actually whipped the elevator trust and drove it out of business, so far as their shipping point was concerned. Prior to this they had been suffering from all sorts of trade indignities in addition to considerable financial loss.

In one of the Michigan fruit sections, the farmers have for years paid a high rate to the only express company in that section for very poor service. By cooperation they have formed an association that not only transports fruit for one-third of the former rate but sells the fruit in Chicago, thereby delivering direct from the grower to the consumer.

Formerly a fine basket of peaches that cost a householder in Chicago \$1.50 only netted the grower about 50 cents; the transportation company, the commissionman and other middlemen got the dollar. Under present arrangements it costs the farmers less to ship and sell their fruit than the express charges amounted to under the old plan.

These reforms, however, come slowly because of the little jealousies that almost immediately crop out when farmers commence doing business together. Business men combine and accept the necessary restrictive regulations without a murmur, but farmers lack the business training that fits a man to push ahead to the amount of his individual interest, instead of pulling back when the others undertake to better his condition as well as their own. Farmers should pull together in these matters. Other lines of business are organized, and labor is organized, but farmers continue to seesaw in the balance, while other interests continue to take advantage of their condition.—Central Farmer, Omaha, Nebraska.

"An enterprise when fairly once begun, should not be left till all that ought is won."—Bacon.

Don't let people discourage you. Go right along attending to your own business and you will succeed.

On account of the busy work of harvesting we have no organizers in the field for the last six weeks.

To make a cooperative movement a success it must be founded on equitable principles as well as business plans.

When any of our associations build or buy an elevator or begin the building want to hear of your progress along these lines.

Farmers have plenty of capital to finance any movement that will aid their interests. All that is lacking is confidence in themselves.

Farmers of Kansas, Nebraska, and Oklahoma can market more than 10,000,000 bushels of grain through their own cooperative associations. By do-

ing their own business through their own selected agents they will discover the barriers in their way and remove them.

The Farmers' Central Cooperative Association is developing rapidly. Everywhere farmers are becoming interested in cooperative shipping.

Our associations in Nebraska and Oklahoma are now building elevators and will soon be ready to ship their grain in an up-to-date manner.

The cooperators of Topolohampo trusted everything to one man. The cooperators got left. The one man proved to be a dictator and tyrant.

All movements have their impetuous, impulsive, impatient alarmists, who are moon-eyed and from whose points of view everything is going to the bows.

The grain-growers of Kansas would no doubt appreciate the assistance of true cooperation but they are not ready to be swallowed up by capitalistic dictators.

The farmers of Nebraska are waking up and we predict that our association will have in operation at least twenty elevators and shipping associations before the end of the year.

If farmers want our organization to become more useful and stronger they can easily make it so, by subscribing to our capital stock and by giving our association their patronage.

Why should not the farmers organize, own, and operate a Farmers' Trust Company on the cooperative plan? Such a company would greatly aid in advancing the grain-growers' movement.

Our associations now own thirty elevators, some in operation and some in process of building, and many more are to be built as soon as lease privileges can be secured from the railroads.

Three modern flouring mills with a daily capacity of one thousand barrels each can be purchased or built at three of the best and most centrally located points in the State for less than \$300,000.

Farmers need a terminal elevator to mix and grade their grain much more than they need a mill. Nearly all can reach a terminal elevator if properly located and a mill would benefit only a few.

Be very careful about loading damp grain into cars to ship. It will heat and destroy other grain that you put into the car. Remember that if the grain heats the shipper will be the loser.

"Great works are performed, not by strength, but by perseverance. He that shall walk with vigor three hours a day, will pass in seven years a space equal to the circumference of the globe."—Johnson.

The Stafford County Grain Company and the associations at Jennings and Anthony have taken stock in the central association. The first-named association took ten shares and the other two five shares each.

"Some men give up their designs when they have almost reached the goal; while others, on the contrary, obtain a victory by exerting, at the last moment, more vigorous efforts than before."—Polybius.

When men are too busy to explain a business proposition they are pushing or soliciting for, they are usually busy for a purpose. It is a good thing for you to let them alone until you understand what you are doing.

Notwithstanding the little stanza we keep standing at the head of this department, there are people who ask, Why don't you do it the other way? It is an easy matter to plan how to do a certain thing; but to do it is sometimes a task.

It is well to consider work that our association may do to advantage but we should not lose sight of what we started out to do and should accomplish that first. We started out to market our own grain to the best possible advantage. We should not be side-tracked or hooked onto any other scheme until our first object is fully accomplished. If we undertake too much we are sure to end in disappointment and failure.

When writing advertisers please mention the Kansas Farmer.

\$200,000 COLD CASH!

That is what the Continental Creamery Company paid for butter-fat to its patrons during the month of June. Think of it! Never in the history of butter-making in the world has such a sum been paid out by one concern for this product. Watch us grow.

A Train Load of Butter.

Twelve cars of butter, aggregating 250,000 pounds, left Topeka last week for New York. Ten cars of it were for Uncle Sam's navy and two cars were for regular customers. The value of the train was \$75,000, and the dairy farmers of Kansas had been paid \$65,000 for the butter. The butter was billed from the Topeka plant of the Continental Creamery Company.

Don't YOU Want Some of It?

There's nothing like the dairy business in Kansas now. Butter is on the rise. The prices will go higher this winter than ever before. Get some cows and let us make you some money. There's no easier way in the world. Feed will be cheap and the work is light. If you want a separator let us sell you a DeLaval—the very finest on the market, on reasonable terms. We are paying our regular 2 1-2 cents below the top New York market for butter-fat. Try a Continental milk check.

THE CONTINENTAL CREAMERY CO.,

Topeka, Kansas.

THE MARKETS.

Kansas City Live Stock Market.

Kansas City, Mo., July 15. Prime corn-fed beefs were scarce here last week and prices soared to another record mark. On Wednesday C. B. Williams, of Cleburne, Kans., marketed three loads of dehorned Kansas cattle, averaging 1,483 pounds at \$8.50, the best price of the year and the highest on record. With the exception of corn-finished beefs, cattle were in good supply and prices show a break of 15¢ for the week. Cheaper grades of half-fat cattle broke 35¢@50¢. Out of a total cattle supply amounting to 43,800 head, nearly half or 19,200 head, consisted of quarantines. Killers are getting a liberal supply of grass beefs this season and on that account are enabled to dictate prices on all but corn-fed stock. The outlook for good beefs continues bright. Some traders predict that \$9 will be reached before the new corn crop jamps prices down to a lower level.

Grass steers and cows broke 25¢@50¢ for the week and some of the outside sales showed 75¢ loss. Liberal receipts alone accounted for the decline. The stocker and feeder market was a great contrast to that of the same week in 1901. Then the drought was beginning to be felt and the feeder market was in a bad condition. During the past week feeders sold well, although a heavy supply caused a break of 25¢ towards the close of the week. Good feeders are worth \$5@5.25. A fair class of cattles is worth no more than \$4.50, however. Quality cuts as much figure as weight.

Hogs touched another high point for the season, selling at \$8.17½ on Wednesday. Frank Crawford, of Bucyrus, Kans., secured the distinction of topping the market at that figure. Hogs advanced 25¢@30¢ during the week. Good swine are now worth \$8. This is about \$2 per hundred worth higher than the same week in July, 1901. Pigs continue strong, although the packers look at little stock last week. Receipts of hogs here last week approximated 27,800 head, against 122,300 the same time in 1901. This is the heaviest decrease as compared with a year ago, that has been had in any previous week this year. The drought forced in hogs during the corresponding period of 1901.

Buyers were after lambs with a long knife last week and took 50¢@65¢ from prices current in our last report. Receipts ran largely to lambs. This condition prevailed over the entire country and the big decline resulted. Top lambs now sell at \$6.25. Shippers would do well to figure on a no higher basis than this and watch out for further declines. Sheep sold steady with the exception of Westerns, which weakened a little. The outlook for muttons is good for another week. Later than that there is no certainty as to the market holding up, for

about the latter part of the month receipts of Utah and other Western stock should begin to depress the market once more. Horses and mules ruled dead dull all week. The only feature of the former trade was the special sale of rangers. Kansas and Missouri buyers predominated at the sale. Prices were no more than steady with the opening of the season. The offerings lacked quality and flesh. Tops sold for \$32.50 per head, while a great many horses sold around \$15. About 600 horses were sold.

The egg market continues to hold steady in spite of the hot weather. Candied eggs are still quoted at 14¢ a dozen. This is a high price for the summer months. Poultry ruled firm and in active demand. Springers showed a shade of weakness.

Quotations are:
Spring chickens 13½@14¢; live hens 8½¢; roosters 20¢ each; ducks 6¢, young ducks 8¢; geese 4¢; turkey hens 10¢, gobblers 8¢.
Best creamery butter steady at 19½¢; dairy 15@18¢. POWELL.

Last Week's Grain Market Review.

Topeka, Kans., July 14. Excepting the excitement existing in the Chicago corn pit, where corn for July delivery is cornered, very little interest is being taken in the markets. Of course the running up of No. 2 corn to 80 or 90¢ per bushel does not interest the Kansas farmer at this time, but it is of great importance to the Illinois and Iowa farmers, many of whom are now reaping a rich reward by having held their corn. Wheat for some reason seems to lag in price, notwithstanding the strength of its statistical position. The increased primary receipts, while not large, are beginning to be sufficiently heavy to keep the visible supply from decreasing. The visible supply has been about stationary at 19,000,000 bushels for the last two weeks. Of course this is not large and unless farm deliveries increase largely the supply will not increase until the spring wheat movement begins. The world's visible supply is very low, and would warrant higher prices for wheat. There is nothing discouraging to holders of wheat who can hold up their supplies until after the rush is over and we believe such action will be richly rewarded. The real estate and railroad lars have got in about all their work about the magnificent Kansas wheat crop and the threshing machine is now beginning to have its inning at not guessing, but telling the actual results. The Southwestern Grain Journal of Topeka has replies to over a hundred letters sent out asking about wheat yields, and the summary places the yield of Oklahoma at one-half that of last year and the Kansas wheat at about one-third of last year's crop. One thing is certain, should foreign demand continue to be as great as it was last year, much higher prices would finally result. According to

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JAMES R. HAWPE }
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We send FREE and postpaid a 200 page treatise on Piles, Fistula and Diseases of the Rectum; also 100 page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.
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The Apiary.

Conducted by A. H. Duff, Larned, Kans., to whom all inquiries concerning this department should be addressed.

Handling the Surplus Honey.

Every good colony should have two supers containing forty-eight section boxes holding one pound each. These supers, which are in sections containing twenty-four boxes each, are interchangeable. While colonies are not so strong at the beginning of the honey season...

If comb honey is the object, procure the regular shipping cases made, or rather furnished, by all supply dealers. These are the proper things to have on hand, to grade the honey and to carefully place it in crates to be either marketed or to be kept on hands as the case may be.

Excessive Swarming.

There is not a great deal of profit in too much swarming, and if we do not interfere we are liable to have it in a good honey season, for the bees are rather inclined to swarm too much. One swarm from each colony is enough under any circumstances, and this should be about the beginning of the honey harvest...

When the Honey Harvest Closes.

See that every colony has a queen and that she is a fertile and a laying queen. All should have some brood in their combs, and if any is found without brood, it is evidence that something is wrong with the queen.

Bees turn their attention to pilfering and robbing after the honey stops coming, and they will try every colony near, and will even go long distances to rob neighboring colonies, and usually these queenless ones fall a prey to them.

Either raise some queens now, to requeen colonies having old or defective queens, or buy them, as this is the way to start out to succeed next season.

Leading Exhibitions for 1902.

- Missouri State Fair—Sedalia, Aug. 18-23. Iowa State Fair—Des Moines, Aug. 22-30. Ohio State Fair—Columbus, Sept. 1-5. Nebraska State Fair—Lincoln, Sept. 1-5. Minnesota State Fair—Hamline, Sept. 1-6. Wisconsin State Fair—Milwaukee, Sept. 8-13. Indiana State Fair—Indianapolis, Sept. 15-19. Kentucky State Fair—Louisville, Sept. 22-27. Michigan State Fair—Pontiac, Sept. 22-26. Illinois State Fair—Springfield, Sept. 29-Oct. 4. Texas State Fair—Dallas, Sept. 27-Oct. 12. St. Louis Fair, Oct. 6-11. American Royal Hereford, Shorthorn, Galloway, Aberdeen-Angus, Berkshire, and Poland-China—Kansas City, Oct. 20-25. International Live Stock Exposition, Dec. 1-6.

Kansas Fairs in 1902.

- Allen County Agricultural Society—C. H. Wheaton, Secretary, Iola; September 2-5. Barton County Fair Association—James W. Clarke, Secretary, Great Bend; September 2-5. Brown County Fair Association—Grant W. Harrington, Secretary, Hiawatha; August 27-29. Butler County Fair Association—H. M. Balch, Secretary, Eldorado; September 29-October 3. Chautauqua County—Hewins Park and Fair Association—P. N. Whitney, Secretary, Cedar Vale. Clay County Fair Association—E. E. Hcoues, Secretary, Clay Center; September 9-12. Coffey County Agricultural Fair Association—J. E. Woodford, Secretary, Burlington; September 9-12. Finney County Agricultural Society—Fred Mims, Secretary, Garden City; August 27-29. Franklin County Agricultural Society—Carey M. Porter, Secretary, Ottawa; September 16-19. Greeley County Fair Association—G. P. Hawkins, Secretary, Tribune. Harvey County Agricultural Society—John C. Nicholson, Secretary, Newton; September 23-26. Jackson County Agricultural and Fair Association—S. E. McGrew, Secretary, Holton; September 23-26. Jefferson County Agricultural and Mechanical Association—Geo. A. Patterson, Secretary, Oskaloosa; September 2-5. Marshall County—Frankfort Fair Association—J. D. Gregg, Secretary, Frankfort; September 23-26. Miami County Agricultural, Mechanical and Fair Association—W. H. Bradbury, Secretary, Paola; September 9-12. Morris County Exposition Company—M. F. Amrine, Secretary, Council Grove; September 24-26. Nemaha County Fair Association—A. R. Spaulding, Secretary, Seneca; September 3-5. Neosho County Fair Association—H. Lodge, Secretary, Erie; September 30-October 3. Neosho County—Chanute Agricultural, Fair, Park, and Driving Association—A. E. Timpane, Secretary, Chanute; August 26-29. Ness County Agricultural Association—H. C. Taylor, Secretary, Ness City; September 24-26. Norton County Agricultural Association—J. L. Miller, Secretary, Norton; September 2-5. Osage County Fair Association—E. T. Price, Secretary, Burlingame; September 2-5. Reno County—Central Kansas Agricultural Fair and Live-stock Association—Ed. M. Moore, Secretary, Hutchinson; September 15-19. Rice County Agricultural Association—C. Hawkins, Secretary, Sterling; September 8-12. Riley County Agricultural Society—A. B. Lee, Secretary, Riley; September 2-5. Rooks County Fair Association—Olmer Adams, Secretary, Stockton; September 9-12. Saline County Agricultural, Horticultural and Mechanical Association—H. B. Wallace, Secretary, Salina; September 2-5. Stafford County Fair Association—Frank C. Swartz, Secretary, St. John; August 20-22. Wilson County—Fredonia Agricultural Association—J. T. Cooper, Secretary, Fredonia, August 19-22.

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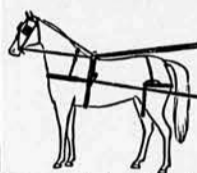


and you will always be sure of getting it pure, fresh and full of strength. Dr. REA'S BLACKLEG VACCINE (Pill Form) is guaranteed to protect your cattle from Blackleg. Each pill of vaccine is an exact dose, and vaccination is sure, safe and certain.

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SPECIAL OFFER. For a short time only, I will mail one of my dollar Nickel Plated Injectors FREE with every order for 10 doses or more of Dr. Rea's Blackleg Vaccine. Not sold by druggists, dealers or agents. PREPARED AND SOLD ONLY BY DR. CHAS. L. REA, 220 East 32d Street, New York City.



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large making with reasonable profit added. Buy-ing direct insures a large saving and satisfaction. Your money returned if not satisfied. For catalogue and prices address

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Advertisement for BOISSEVAIN TURTLE MT. MANITOBA featuring wheat lands for sale at \$5.00 to \$15.00 per acre, highlighting crop yields and local exhibitions.

Advertisement for HAPCOOD MANUFACTURING CO. featuring a buggy for sale at \$40, described as 'THE GREATEST BARGAIN ON EARTH'.

Advertisement for WHITMAN'S BALING PRESSES, described as 'VICTORIOUS IN EVERY CONTEST' and the largest and most complete line of balers in America.

Advertisement for Little Giant Hay Press Co., Dallas, Texas, highlighting the 'Little Giant Press' as the only perfected high pressure capacity hand power press.

Advertisement for FLEMING BROS., Chemists, Union Stock Yards, Chicago, featuring 'Don't lose another hog' and Fleming's Swine Food.

Advertisement for WELL DRILLING Machines, featuring Williams Bros., Ithaca, N. Y., for drilling shallow wells in any kind of soil or rock.

Advertisement for THE 1900 BAL-BEARING FAMILY WASHER SENT FREE, featuring a testimonial from Mrs. Levi H. Harrison and a portrait of the woman mentioned.

Advertisement for SECURITY GALL CURE, featuring a circular logo and text stating it cures sore shoulders on horses and mules while they are working.

5 TON WAGON SCALES \$35.00
 SENT ON TRIAL FREE CATALOGUE FREE
AMERICAN SCALE COMPANY
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 time to build fence, but our factory is running full time making your fall fencing.
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Describe work to be done and we will send specifications of what your power will cost you.
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Guard back and direct stroke wind mills, steel tow'rs, steel tanks, un-gear'd and triple gear'd feed grinders. Write for our free catalogue.
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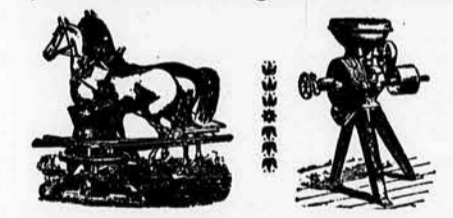
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Head-ache.
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 Also all pains such as backache, neuralgia, sciatica, rheumatic pains, monthly pains, etc.
 "Dr. Miles' Pain Pills are worth their weight in gold," says Mr. W. D. Kreamer, of Arkansas City, Kan. "They cured my wife of chronic headache when nothing else would."
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 Through their use thousands of people have been enabled to attend social and religious functions, travel, enjoy amusements, etc., with comfort. As a preventative, when taken on the approach of a recurring attack, they are excellent.
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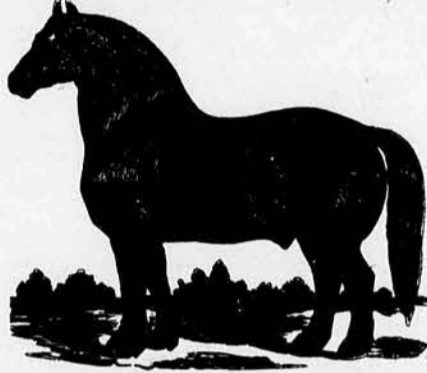
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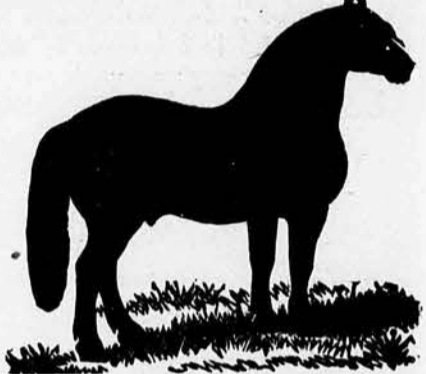
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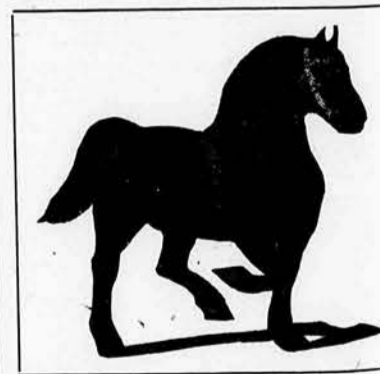
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