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Agricultural Matters.

ROOT TUBERCULES AND THEIR PRODUCTION BY INOCULATION.

By D. H. Otis, Kansas Experiment Station.
(Continued from last week.)

Culture and Growth.—The season was favorable to the growth of the beans. A heavy rain fell the next day after planting, and subsequent rains fell at intervals sufficiently close together to supply the plants with the necessary moisture. The beans were up June 6 and on June 13 all the plats received a thorough hoeing. On the latter date some of the extra plants were pulled up and there were found several well defined nodules on the roots of those inoculated with soil, but none were found on any of the others at this date. On June 22 it was noted that the beans inoculated with soil appeared to have a little larger growth. The difference was not very striking, however. On July 14 the yellow soys were in full bloom, but the medium green, being a little later variety, did not appear in full bloom until July 20. Measurements were taken for the average height of the plants on August 20, with the following results:

TABLE I.

PLAT.	Row 1.		Row 2.		Row 3.		Av. for plat.	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
Yellow Soy:								
A.....							2	8.5
B.....	2	9.5	2	7	2	4.5	2	7.0
C.....							2	5.5
Medium Green:								
D.....							2	4.
E.....	2	2	2	2	2	.5	2	1.
F.....							2	0.

From the above table it will be noticed that the yellow soy attained a greater height at this date than the medium green. This is due, however, to the difference in the variety, the latter being a late-maturing and a somewhat more bushy plant than the yellow soy. It will also be noticed that in case of plats B and E, rows 1 and 4, inoculated at time of planting, attained, on the whole, a little greater height than rows 2 and 5, and 3 and 6, inoculated subsequently to the time of planting. This would indicate that the best time to inoculate is at the time of planting. Furthermore, the last column of the table shows, in this case at least, that the plants inoculated with soil averaged a little greater height than the others. However, the differences above noted are not great, and, with the exception of the difference due to variety, would not be noticed by the ordinary observer without the application of a measuring rod.

Appearance of the Roots.—On August 27, two hills each of the treated plats and one of the untreated were dug up, together with about a two-foot cube of the soil surrounding each hill. These were placed in large tubs of water and after a thorough soaking the roots were carefully washed out and examined for tubercles. The latter were found in great number and of a large size on the inoculated plants, but not a single tubercle could be found on the plants not treated from either the yellow soy or the medium green, nor were there any signs of tubercles on the plants in the guard rows between the inoculated plats. The tubercles on the plants inoculated with soil were fairly uniform and situated mainly on the upper portion of the roots, not far from where the soil was placed at the time of planting. In case of the plants inoculated with extract there was a marked difference between the varieties; the tubercles on the yellow soy were very numerous and well developed, while those of the medium green were scanty and rather inferior. All the inoculated plants showed a greater diameter of the lower portion of the stem than the plants not treated. Pictures were taken of the different treatments and are here given.

Nitrogen Content.—On September 17, an average sample of six stalks each was taken from plats D and F of series II for analysis with the purpose in view to ascertain whether there would be any difference in the content of nitrogen between the plants with tubercles and those without tubercles. The seed being the most constant in composition of any part of the plant, it was thought that the difference, if any, would be in the fodder, and so, after the samples were thoroughly dried, the beans were all shelled out and the fodder ground up fine. From this a sample was taken and

pulverized for analysis. The per cent. of nitrogen is shown in the following table, together with the protein and water:

TABLE II.

TREATMENT.	Nitrogen, Per Cent.	Protein, Per Cent.	Water, Per Cent.
Inoculated with soil.....	1.439	8.996	7.89
Not treated.....	1.395	8.719	7.30
Difference.....	.044	.277	.59

The analysis does not show any great difference in favor of inoculating, there being an increase of only .04 of 1 per cent. of nitrogen and .27 of 1 per cent. of protein in favor of the beans with tubercles. This would be .8 pound nitrogen and 5.4 pounds protein increase for each ton. But it must not be concluded that this is the only difference. The roots with tubercles rich in nitrogen must possess greater fertilizing properties than the roots with no tubercles, the results of which would be shown in the succeeding crop, or crops. Furthermore, had the tubercles been grown on poor soil instead of rich soil, doubtless there would have been a still greater difference in favor of inoculating. The remaining crop of the medium green was harvested October 2.

Data as to Yield.—When matured the beans were harvested and placed in gunny sacks to cure. The leaves had nearly all fallen off and a few of the

undoubtedly due to infection resulting from the manipulation of tools and pots when the beans were planted.

How Soon Do the Tubercles Appear?—To obtain information on this point, a small bed was planted in the greenhouse June 19 and inoculated with Massachusetts soil, from which plants were taken up nearly every day to ascertain when the tubercles began to appear. They were first visible to the naked eye on July 3, thirteen days after the beans were planted, or eight days after they appeared above the ground. From this it would be inferred that the bacteria begin their work very soon after the young roots are formed and increase their activity with the growth of the roots.

Effect of Sterilizing the Soil.—Pots of both Kansas and Massachusetts soil were sterilized by heating them to 200° C. (392° F.). The results obtained, both in the field and in pots, as well as by previous experience, showed that as far as the soy bean organism was concerned the Kansas soil was already sterile. In the case of the Massachusetts soil, however, these results show that the bacteria were killed at the above temperature, and plants grown in this soil produced no tubercles except when inoculated. It might be well to state in this connection that the heating of the soil produced other effects than those of a bacteriological nature, and the plants grown in it did not possess a healthy and vigorous appearance.

Plants Grown in Pure Massachusetts Soil. I.—Since 21cc of Massachusetts soil was capable of producing such good results, both in the field and in pots, it was thought that plants grown in this soil alone would give still more striking results in tubercle formation. One pot each of yellow soy and medium green were grown in Massachusetts soil. The plants did well and ranked among the best in the greenhouse, but on washing out the roots the tubercles were found to be only moderate in size but fairly well distributed over the roots. In fact they did not show up so well as plants which were inoculated with only a small portion of Massachusetts soil. This experiment is repeated and results given under the second series of experiments in the greenhouse.

Inoculating at Top, Middle and Bot-

TABLE III.

PLAT.	No. of stalks in plat	Wt. of Grain, lbs.	Wt. of dry stalks, lbs.	Weight in proportion to number of stalks.		Rate per acre.	
				Grain, lbs.	Stalks, lbs.	Grain, bu.	Stalks, tons.
Yellow soy:							
A.....	85	2.875	4.562	3.246	5.152	23.27	1.10
B.....	73	2.625	4.312	3.451	5.669	24.74	1.21
C.....	100	3.437	5.312	3.299	5.099	23.65	1.09
Medium green:							
D.....	82	2.750	8.312	3.218	9.730	23.07	2.09
E.....	67	2.125	6.125	3.044	8.775	21.82	1.88
F.....	82	3.062	7.812	3.584	9.144	25.69	1.96

table it will be seen that the yellow soys, plat B, inoculated with extract, yielded a little the best of both grain and fodder, but the difference is very slight. Of the medium green, plat F, not treated, yielded the most grain, and plat D, inoculated with soil, the most fodder. In all these cases the differences are not great, and as the plats were very small, it would be impracticable to pass any judgment as to comparative yield. The benefits from inoculation lie largely in the increased fertility of the soil resulting from the decay of the nitrogenous roots, and would not be seen until after the growth of the succeeding crop.

EXPERIMENTS IN THE GREENHOUSE.

Repetition and Extension of Field Experiment.—Pots containing native soil were planted to beans and treated in the same manner as in the field experiment, and were attended with practically the same results. The test, in this case, was extended so as to include other varieties of the soy bean, namely the edamane, kiyusuke daidzu, yamagata cha-daidzu, early white, and the medium black. In all these cases, where the plants were inoculated with either soil or extract, numerous and well defined tubercles appeared on the roots. In a few instances, however, one or two tubercles were found on the plants not treated, but these were isolated cases and were

tom of Pot.—To test the rapidity with which the organisms spread in the soil, three pots each of yellow soy and medium green were inoculated at the top,



FIG. 1.
Soy Bean inoculated at top of pot.

middle and bottom of the pots respectively with 21cc of Massachusetts soil. The washing out of the roots revealed the fact that the plants inoculated at the top of the pot produced tubercles on the upper portion of the roots with only a few extending downward and none on

the lower portion of the roots. The plants inoculated at the middle of the pot produced tubercles about midway between the upper and lower portion of the roots. And lastly, the plants inoculated at the bottom of the pot showed the tubercles on the lower portion of the roots, with a few tending upward.

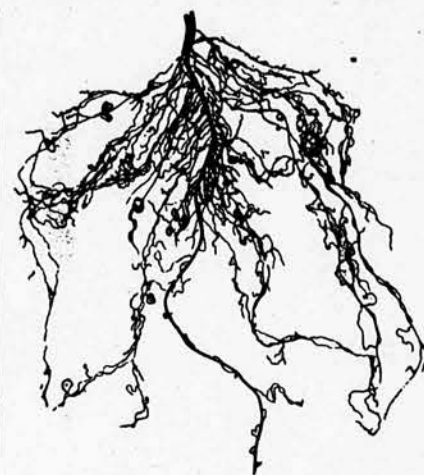


FIG. II.
Soy Bean inoculated at middle of pot.

This is a very interesting point, and indicates that, without mechanical mixing, the micro-organisms spread very slowly in the soil, and that in spite of the fact that the plants were frequently watered on upper surface of pot, which one might suppose would have carried the bacteria deeper into the pots. The

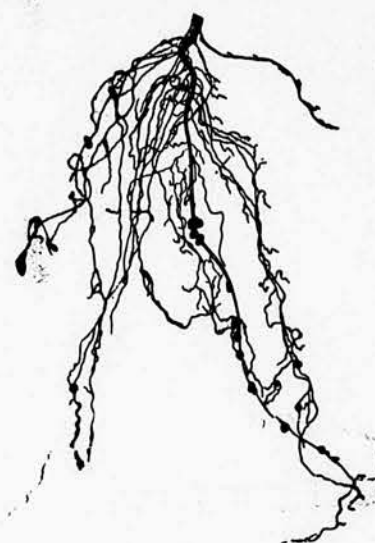


FIG. III.
Soy Bean inoculated at bottom of pot.

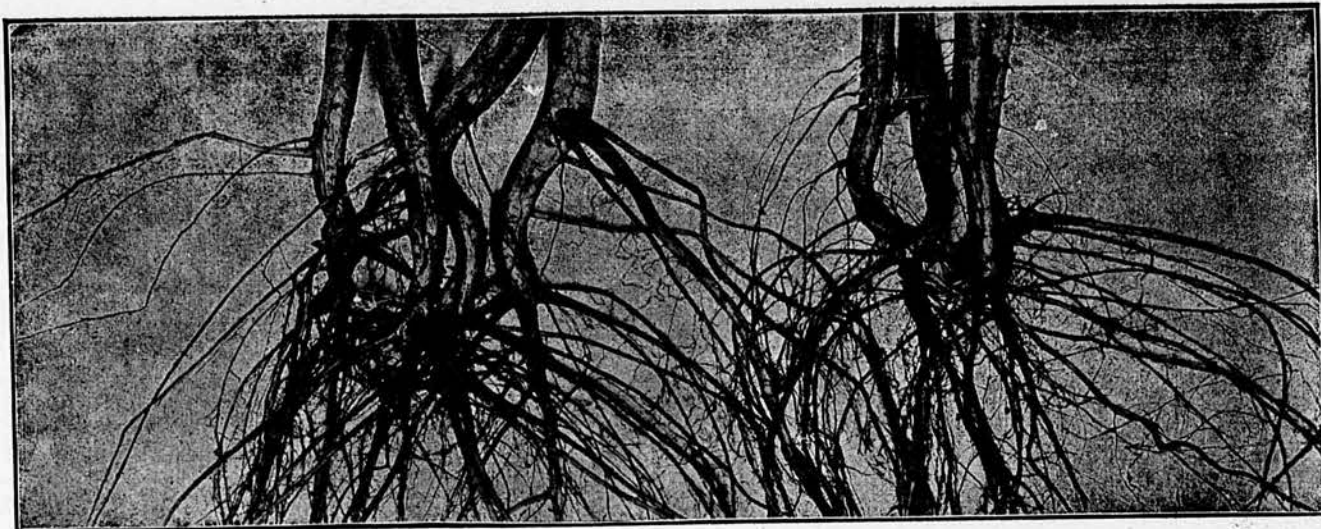
number and position of the tubercles are shown in the accompanying drawings.

FURTHER EXPERIMENTS IN THE GREENHOUSE.

Plants Grown in Pure Massachusetts Soil. II.—Fearing that the results obtained in the previous experiment might be due to local conditions or disturbances, the subject was further tested by planting yellow soy beans in seven pots of pure Massachusetts soil, and comparing with these seven pots of Kansas soil, all of which were inoculated with 21cc of Massachusetts soil. The results obtained were similar to those of the previous experiment, only that no appreciable difference could be seen in the results of the two treatments. Why a soil so thoroughly infected with micro-organisms as was this Massachusetts soil should not cause greater development of tubercles is a question not readily answered, and one that will bear further investigation.

Inoculating with Different Amounts of Massachusetts Soil.—To test the effect of varying amounts of Massachusetts soil on the number and size of tubercles produced, ten pots of yellow soy beans were grown in which the soil had been inoculated with 21cc of Massachusetts soil for pot 1, 42cc for pot 2, and so on, increasing 21cc for each succeeding pot, until the tenth pot was reached, which received 210cc of Massachusetts soil. No particular difference could be detected in the growth of the plants, and what was true of the upward growth was likewise found to be true of the roots and tubercles. The differences were slight, and these so irregular, that it could not be said that one was any better than the others. These results, taken in connection with those obtained from pure Massachusetts soil, seem to indicate that the micro-organisms are sufficiently numerous and active for ordinary inoculating in a comparatively small amount of the Massachusetts soil, and that an increase of this infectious soil does not perceptibly increase the number or size of the tubercles.

Effect of Light on the Micro-Organisms.—Two broad, shallow dishes, each



MEDIUM GREEN.

I. SOY BEANS NOT TREATED.

YELLOW SOY.

with about 110cc of the Massachusetts soil spread over their surfaces, were placed, one in diffused light and the other in sunlight, and enough to inoculate one pot was taken from each of these at the end of one, two, three, four and six weeks respectively. In the meantime the soil was kept stirred so as to expose all portions equally to the light. All pots contained tubercles; and, although the results slightly favor the pots whose inoculating material was exposed the least, the differences are very small. In fact, it seems that light could have but little effect on the micro-organisms when the soil is kept together in any quantity.

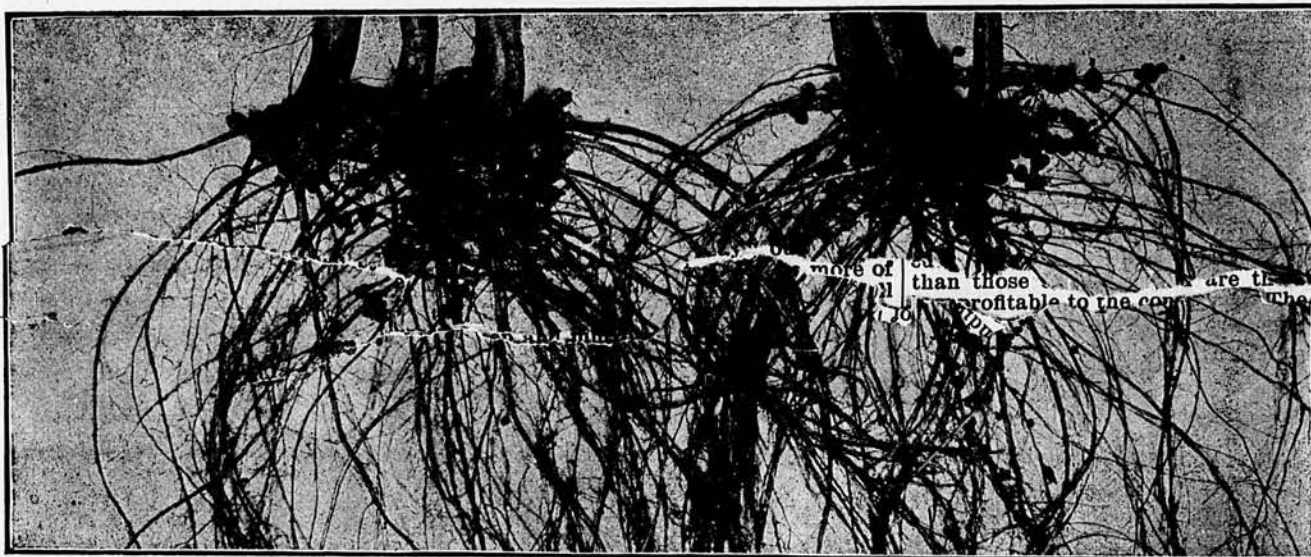
Inoculating at Different Temperatures.—To see what degrees of tem-

others and that the ones with less vitality were killed by the heat. A similar test was made by heating extract from 35° to 90° C. (95° to 174° F.); but as this was considerably lower than that to which the soil was heated, tubercles were formed in all the pots, as might be expected after the former discovery. But even here the same gradation existed as was noticeable in the case of the soil, the tubercles being more numerous at the lower temperatures. In both of these cases the results show that the micro-organisms can stand quite a high degree of heat.

Inoculating with Kansas Soil.—Will soil which has once been inoculated serve to inoculate non-infected soils? First, five pots were filled with soil

that Kansas soil, being once inoculated, can be used to inoculate other soils.

Inoculating with Tuberculous Roots.—After remaining in loose soil about a month, some of the roots which had previously produced tubercles were taken to inoculate a pot of yellow soy beans. The plants grew well and ranked among the best in the greenhouse. On washing out the roots, large and numerous tubercles were discovered, which were by far the best of any produced in the greenhouse during this experiment. Likewise, washed roots that had been air dried in diffused light for about the same time were placed in another pot. Tubercles were formed, but neither the growth of the plant nor the tubercles were equal to the above. In the former



MEDIUM GREEN.

II. SOY BEANS INOCULATED WITH SOIL.

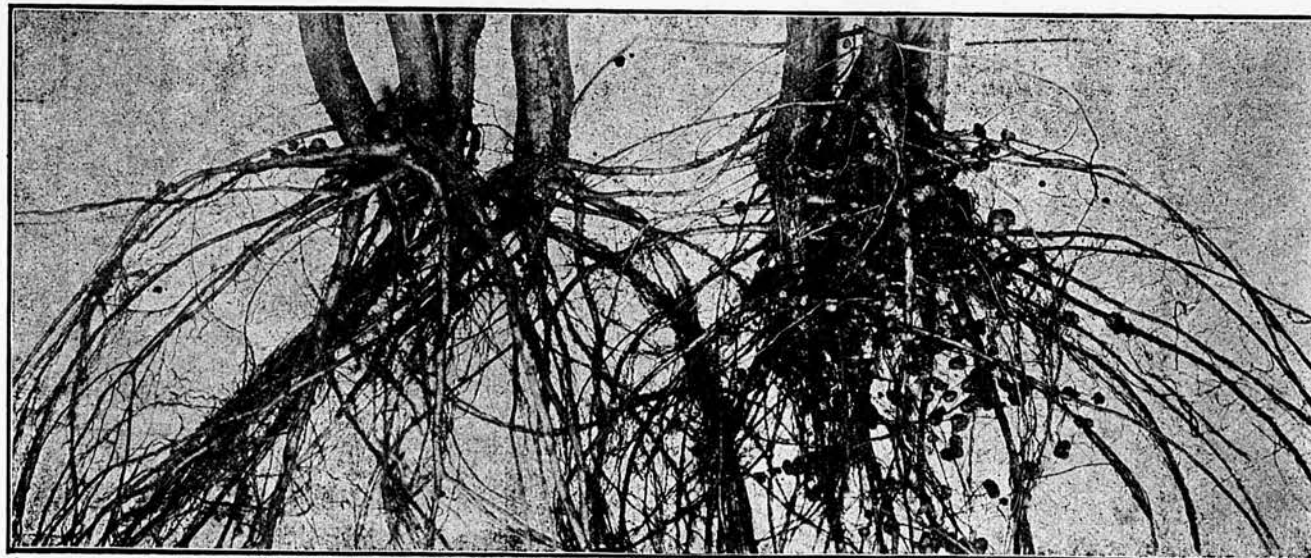
YELLOW SOY.

perature these micro-organisms could stand, soil was heated to ten different points, varying from 40° to 150° C. (104° to 302° F.). Tubercles were found in all the pots except 120° and 150° C. Unless the micro-organisms happened to possess less vitality, in the former instance the lack of tubercles could scarcely be attributed to the heat, as tubercles were found on the plants whose inoculating material was heated to 140° C. It was observed that the tubercles developed the best at the lower temperature and they seemed to decrease as the temperature increased, although this variation was not entirely regular. It would seem that some of the bacteria possessed more vitality than

taken from the immediate vicinity of roots previously inoculated. Second, five pots were filled with soil which had been soaked and washed out from plants that had produced tubercles in the field. Since nearly a two-foot cube was taken up with each hill, the number of micro-organisms must have been less in this instance than in the first five pots. Tubercles were produced in all the pots, but the results, as might be expected, were somewhat more in favor of the first five. To test this matter still further two pots were inoculated each with 21cc of the above classes of soil, with the result that in both cases tubercles were formed in the same relative proportion to the above. This shows

case the roots had more or less soil adhering to their surface, but in the latter there was practically none.

Effect of Inoculating Other Legumes with Massachusetts Soil.—Four pots each of adzuki beans (*Phaseolus radiatus*), cow peas, Canada field peas, alfalfa, and red clover were planted, half of these being inoculated with Massachusetts soil and the other half not treated. On the roots of the adzuki beans and the cow peas, no nodules were apparent in any of the pots; the alfalfa showed several; and on the clover and Canada field peas they were very numerous, but no difference could be detected on any of them that was due to the Massachusetts soil. Evidently these



MEDIUM GREEN.

III. SOY BEANS INOCULATED WITH EXTRACT.

YELLOW SOY.

Faith in Hood's

The Great Cures by Hood's Sarsaparilla Are Indeed Marvelous.

"My husband suffered with stomach trouble so bad at times he could not work. He has taken Hood's Sarsaparilla and it is helping him wonderfully. He also had a scrofulous humor but Hood's Sarsaparilla cured this and he has had no trouble with it since. My little boy, too, has been taking Hood's Sarsaparilla and it has given him a good appetite. We have great faith in Hood's Sarsaparilla." MRS. J. H. EDWARDS, 50 Edinburg St., Rochester, New York. Be sure to get Hood's because

Hood's Sarsaparilla

Is the best—in fact the One True Blood Purifier. Sold by all druggists. \$1; six for \$5.

Hood's Pills are the best after-dinner pills, aid digestion. 25c.

plants were attacked by a different kind of organism than that attacking the soy bean.

ROOT TUBERCLES UNDER THE MICROSCOPE.

Preparation of Slides.—This phase of the subject was taken up with the hope of observing the way micro-organisms behave within the tissues of the root. Tubercles were cut from the roots of plants seventy-two and ninety-nine days old, respectively, which had been grown in the greenhouse under rather unfavorable circumstances. These were placed in 1 per cent. chromic acid for eighteen hours, after which they were washed out and placed in 15 per cent. alcohol for seventeen hours, then in 30 per cent. for nine hours, then 50, 60, 80 and 90 per cent., and absolute alcohol for six hours each, more or less, at convenience. They were then transferred to one-half alcohol and one-half turpentine for seven hours previous to placing them in pure turpentine. Following this treatment, paraffine was added sufficient to make a saturated solution. This was placed on a radiator for twelve or fifteen hours to keep the paraffine melted and thus to more thoroughly saturate the tubercles, when they were removed to a water bath and kept in paraffine at a temperature of 58° C. for two or three hours. They may be named John Palmer, Sarsaparilla for two or three years.

The tubercles with the melted paraffine were then poured into a paper box, which was floated on the surface of water until the paraffine formed a scum on its upper surface, after which the whole was rapidly cooled by immersing it. From this solid paraffine pieces containing tubercles were cut out and mounted for the microtome. When the sections were cut, they were placed on a glass slide, previously covered with a thin coat of albumen solution to make them stick. This was then held over an alcohol lamp until the paraffine was all melted. After being allowed to cool, the paraffine was dissolved off with turpentine, and the specimen carried back through the various strengths of alcohol until it could be placed in water. It was then put into a solution of haematoxylin for twenty minutes to stain it, and after being brought up through alcohol to turpentine, was mounted in Canada balsam. The apparent infecting mycelium in the tubercle absorbed the stain more readily than the cell tissue, and could be seen with a Zeiss microscope fitted with 1-12 (2mm) homogeneous objective and a No. 4 eyepiece. This gave a magnification of 850 diameters. Drawings representing cross sections of the tubercles at this power were obtained with the aid of an improved Abbe camera. Specimens representing a portion of a cross section of tubercles taken from plants seventy-two and ninety-nine days old are shown in Figs. IV and V respectively.

Explanation of Mycelium.—It should

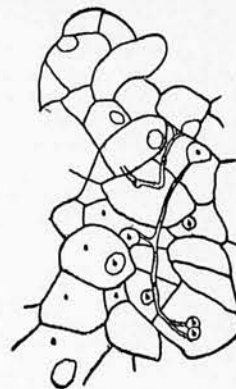


FIG IV.

Cross section of Soy Bean root tubercle.

be noted that the mycelium that appears to run from cell to cell is a bacterial

product and is therefore not a true mycelium. The apparent mycelium is what is known as a bacteroid condition; the bacteria become distributed throughout the cells and finally die. It is in this dead or decayed condition that the bacteria become available as plant food. The mycelium, or bacteroid condition, is the transition stage from the individual bacteria until their absorption by the plant. The change of the bacteria into the bacteroid condition is shown at d, Fig. V.

Explanation of Microscopic Drawing.—Fig. IV shows the cells, a; the nuclei, b; and the infecting mycelium, (bacteroid condition) c. It will be noticed that the mycelium is formed through the cell wall, appears to send off branches, and has a special liking for the cell nuclei. In the lower portion of Fig. IV is shown the mycelium branching to two nuclei, one of which seems

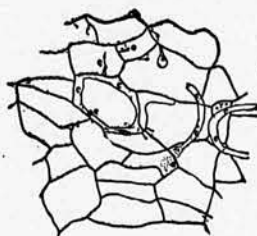


FIG. V.
Cross section of Soy Bean root tubercle.

to lie below the other and may belong to a lower layer of cells. Fig. V shows a cross section at a little later stage of development. As in the former case, it shows the mycelium, c, but in a little different form. In one instance the mycelium seems to envelop the inner wall of nearly all of one cell, and a portion extends through the cell wall into the adjoining cell. In addition to this there is shown at d, a cluster of small dots, which are probably individual bacteria. Also at e are found peculiar dark bodies, some of which are imbedded within the cell wall, while others are isolated or connected with threads, or hyphae. The latter bodies may possibly be bacteria, but it seems to be more probable that they are something else. They may be due to some foreign substance that has the power of absorbing the stain to a greater degree than the surrounding tissues.

EXTENT OF SOY BEAN MICRO-ORGANISM IN THE UNITED STATES

After the success of inoculating the beans with imported soil was assured, it was thought to be an interesting point to ascertain how far these particular micro-organisms had spread in this country. Accordingly inquiries were sent to all the experiment stations of the United States and the following table constructed from the replies:

TABLE IV.

Micro-organisms indigenous to the soil.	Micro-organisms obtained through inoculation.	No tubercles found on the roots.	Have made no examination for root tubercles.	Too cold to successfully grow the soy bean.	Have not grown the soy bean.
Indiana.....	Conn. [Storrs].....	California.....	Arizona.....	Minnesota.....	Kentucky.....
Louisiana.....	Kansas.....	Florida.....	Arkansas.....	Washington.....	Maine.....
Mass. [Hatch].....	Iowa.....	Colorado.....	Colorado.....	Montana.....	Montana.....
N. C. [Hatch].....	Michigan.....	Conn. [State].....	Conn. [State].....	Nevada.....	Nevada.....
R. I. [Hatch].....	South Dakota.....	Georgia.....	Georgia.....	Pennsylvania.....	Pennsylvania.....
Tennessee.....	Illinois.....	Illinois.....	Illinois.....	Utah.....	Utah.....
	Maryland.....	Maryland.....	Maryland.....	Virginia.....	Virginia.....
	Mississippi.....	Mississippi.....	Mississippi.....	Wyoming.....	Wyoming.....
	Nebraska.....	Nebraska.....	Nebraska.....		
	New Jersey.....	New Jersey.....	New Jersey.....		
	N. Y. [Cornell].....	N. Y. [Cornell].....	N. Y. [Cornell].....		
	N. Y. [State].....	N. Y. [State].....	N. Y. [State].....		
	Ohio.....	Ohio.....	Ohio.....		
	Texas.....	Texas.....	Texas.....		
	Vermont.....	Vermont.....	Vermont.....		
	West Virginia.....	West Virginia.....	West Virginia.....		
	Wisconsin.....	Wisconsin.....	Wisconsin.....		
6.	2.	5.	18.	2.	8.

CONCLUSION.

The above experiments were not planned with a view to obtain comparative results as to yields; and where yields have been given, they are only incidental. The main object was to ascertain whether or not a leguminous plant could be made to produce tubercles by inoculating it with a soil impregnated with the right kind of micro-organisms. As the Kansas soil contained none of these organisms, the conditions were entirely under control, and results obtained which otherwise would have been impossible. The results show conclusively that inoculation is entirely possible; and this, taken in connection with the fact that it has been repeatedly proven that tubercles are valuable adjuncts to leguminous plants, both for yield and as a fertilizer, suggests the practicability of inoculating fields deficient in micro-organisms that would be beneficial to the particular leguminous crop to be grown. When we realize that in the Eastern States many farmers are paying from \$6 to \$10 an acre for fertilizers, which in the aggregate amount to a tax of millions of dollars, and as

we in the West are fast tending in the same direction, should it not behoove us to lay hold of one of nature's most effective means of maintaining and even increasing the fertility of the soil? Free nitrogen is around and about us in superabundance, it composing four-fifths of the air; but without the aid of these bacteria working within the tubercles of the roots, plants have no power to make use of it. By growing leguminous crops in rotation, and inoculating the soil when the latter is deficient in the proper species of bacteria and thus controlling the action of these microscopic plants, the farmer may find them to be among his best friends and strongest financial supporters.

GOVERNMENT CROP REPORT FOR JUNE, 1898. SPRING WHEAT.

Acreage.—Preliminary reports on the spring wheat acreage, with North Dakota and South Dakota, in particular, subject to revision, indicate a total area seeded of about 16,800,000 acres, which, added to the area in winter wheat reported last month, indicates a total wheat acreage of about 43,000,000 acres, or rather over 3,500,000 acres greater than last year. There is an increase of 8 per cent. in Minnesota and South Dakota, of 10 per cent. in Nebraska, of 11 per cent. in North Dakota, of 22 per cent. in Iowa, of 20 per cent. in Washington, and of 5 per cent. in Oregon.

Condition.—The average condition of spring wheat is the almost, if not entirely, unprecedented one of 100.9, as compared with 89.6 on June 1, 1897, and a June average of 92.5 for the past ten years. The nearest approach to this almost phenomenal condition was on June 1, 1896, when the average was 99.9. Nearly all the principal spring wheat States report a condition exceeding that indicative of a full normal crop, North Dakota reporting 104, South Dakota 103, Nebraska 105, Iowa 102, and Oregon 101, while Minnesota reports 100 and Washington 97. It is a significant fact that of the twenty-four States reporting on the condition of spring wheat, and which include New England and the Pacific coast, six report a full normal crop, and eleven a condition indicating from 1 to 14 per cent. above the normal.

WINTER WHEAT.

Condition.—The average condition of winter wheat is 90.8, as compared with 78.5 at the corresponding date last year, and 81.6, the average for the last ten years. The averages in the principal States are as follows: New York Maryland and West Virginia, 98; Pennsylvania and Missouri, 96; Kentucky and Wisconsin, 99; Ohio, 87; Michigan and Iowa, 97; Indiana, 95; Kansas and Vir-

South Dakota, 103; Nebraska, 104; Missouri, 93; and Kansas, 94.

BARLEY.

Acreage.—The acreage reported as under barley is 5.3 per cent. less than last year, the reduction in the principal States being as follows: New York, 10 per cent.; Wisconsin, 8 per cent.; Minnesota, 11 per cent.; Iowa, 8 per cent.; North Dakota, 4 per cent.; South Dakota and California, each, 1 per cent. In no important barley-growing State is there any increase in acreage reported.

Condition.—The average condition of barley is 78.8, as compared with 87.4 on June 1, 1897, and 89.9, the average for the last ten years. The average condition by States is as follows: New York, 95; Michigan, 94; Wisconsin, 100; Minnesota, 98; Iowa, 102; Nebraska, 104; South Dakota, 103; North Dakota, 100; Washington, 97; and California, 32. The low average in California, where the present condition indicates less than one-third of a normal crop, has greatly reduced the average for the entire country, California producing, under normal conditions, more than any other two States in the Union.

RYE.

Acreage.—The acreage under rye shows a decrease of 3.5 per cent., as compared with last year, the decrease in New York being 5 per cent., in Pennsylvania 2 per cent., in Michigan 7 per cent., and in Wisconsin and Kansas 1 per cent.

Condition.—The average condition of rye is 97.1, as compared with 89.9 on June 1, 1897, and 90.6, the average for the past ten years. The present average is an exceptionally high one, an examination of the records for a long series of years failing to disclose a June condition so favorable. The condition in the principal States is as follows: New York, Michigan, Minnesota and Iowa, 96; New Jersey and Pennsylvania, 99; Indiana and Illinois, 94; Wisconsin, 100; Kansas, 103; Nebraska, 105; and California, 44.

CLOVER.

Acreage.—There is undoubtedly a large increase in the acreage in clover, although no statistical comparison can be made with the acreage of last year for the country as a whole. Thirty States report an enlarged area, ranging from 1 per cent. in Pennsylvania and Michigan to 16 per cent. in Minnesota and 22 per cent. in Wisconsin.

Condition.—The condition of clover is highly satisfactory, there being but few States in which it does not indicate at least 95 per cent. of a full normal crop, while in many cases an average of more than 100 is reported.

SPRING PASTURE.

Condition.—The condition of spring pasture is phenomenally high, there being in this case also but few States where it does not approach or exceed 100. In the New England States, and down the Atlantic coast as far as, and including, Virginia, the condition ranges from 100 to 109, and the reports from the middle West and from the prairie States are almost equally favorable.

PEACHES.

Condition.—Excepting in New Jersey, Delaware, Maryland, Kentucky, Tennessee, Mississippi and Arkansas, the season has been highly favorable throughout the entire eastern half of the country. In Georgia, probably the greatest peach-growing State in the Union, the condition is 105, against an average June condition for the last ten years of 61.

APPLES.

Condition.—In all the New England States, except Rhode Island, the condition of apples is considerably above the June average for the last ten years. In New York it is 5 points above the ten-year average, in North Carolina 8 points above, in Michigan 17 points, in Wisconsin 31 points, in Iowa 8 points, and in Nebraska 13 points. On the other hand, the present early indications are less favorable than usual in the following States and to the extent indicated: Rhode Island, 5 points; New Jersey, 4 points; Maryland, 8 points; Virginia, 4 points; Georgia, 3 points; Alabama, 3 points; Arkansas, 13 points; Tennessee, 11 points; West Virginia, 30 points; Kentucky, 12 points; Ohio, 7 points; Indiana, 15 points; Illinois, 6 points; Missouri, 11 points; Kansas, 1 point.

RAINFALL.

March.—During March the rainfall in the States of the North Atlantic division equalled only about 65 per cent. of the average, except in southwestern Pennsylvania, where the amount was fully 50 per cent. in excess. In the South Atlantic division it was generally below the average, except in northwestern West Virginia, south-central North Carolina, and on the east coast of southern



To be idle is the hardest of all tasks. Our grandmothers understood this and even in their leisure moments were never found without some little task in their hands, if it were only knitting, tatting or crocheting. There was a reason for this that does not appear upon the surface. Our grandmothers were healthy women, imbued with a spirit of ambition and activity that would not permit them to be idle.

If many modern women are much less active and more given to idleness than the stately dames of yore, it is because they enjoy a smaller measure of good health. A woman who suffers from weakness and disease of the distinctly feminine organs, who is racked with pain, and tortured with headaches and nervousness, cannot be active and helpful. Idleness and invalidism are the natural results of suffering of this description. The poor invalid woman is not at fault, save in her ignorance of her own physical make-up or neglect of her womanly health.

Thousands of women are neglectful in this way because they shrink from the embarrassing examinations and local treatment insisted upon by the majority of obscure physicians. Dr. R. V. Pierce, for thirty years chief consulting physician to the Invalids' Hotel and Surgical Institute, at Buffalo, N. Y., has discovered a wonderful medicine that cures all diseases peculiar to women, in the privacy of the home, without the necessity of these embarrassing ordeals. This great medicine is known as Dr. Pierce's Favorite Prescription. It acts directly on the delicate and important organs that bear the burdens of wifehood and motherhood. It makes them strong, healthy and vigorous. It heals internal ulceration and inflammation and stops debilitating drains. It transforms weak, nervous invalids into healthy women.

A book about health, free. Dr. Pierce's Common Sense Medical Adviser. For paper-covered copy send 21 one-cent stamps, to cover mailing only. Cloth bound 31 stamps. Dr. R. V. Pierce, Buffalo, N. Y.

Florida, where large excesses were reported. In the South Central division, with the exception of Texas, northern Kentucky and western Arkansas, the rainfall was everywhere deficient; drought conditions prevailed in Louisiana and Alabama; in Texas the rainfall was nearly normal, while in districts of northern Kentucky and western Arkansas large excesses were recorded. In the North Central division rainfall largely in excess of the average amount occurred over Ohio, Indiana, Illinois and Missouri; more than the average rainfall also fell in Iowa, Michigan and Wisconsin; about the usual quantity was reported from Minnesota, the Dakotas and Nebraska; and there was a large deficiency in Kansas. In the Western division California suffered from drought, and a decided deficiency of rainfall was experienced in Oregon and Washington; deficiencies were also reported from the other districts of the division, except New Mexico, where a slight excess was reported.

April.—In the North Atlantic division the rainfall was deficient, except in eastern Massachusetts, Rhode Island, Connecticut, and the extreme northeast portion of Maine, where rainfall largely in excess of the average was reported. In the South Atlantic division the rainfall was generally below the average, except in central and western Georgia, Virginia and central North Carolina. In the South Central division rainfall was largely deficient in Louisiana, Mississippi, southern Alabama, Arkansas, Oklahoma and southwest Tennessee; it was nearly normal in Texas, northern Alabama, and also in Tennessee, with the exception of the southwestern section of the State. In the North Central division the rainfall was in excess in Iowa, nearly normal in Missouri, Kansas and Nebraska, and deficient in all other districts. In the Western division the rainfall was everywhere deficient and drought of previous month in California was intensified.

May.—Over the North Atlantic division the rainfall was in excess in all eastern districts; in Maine, the northern portions of New Hampshire and Vermont, and throughout western New York and Pennsylvania it was somewhat below the average. In the South Atlantic division the rainfall was markedly deficient in Florida, Georgia, South Carolina and portions of North Carolina; about the average amount fell in Maryland, while an excess was reported over the southern part of Virginia. In the South Central division the rainfall was deficient in Louisiana, Mississippi, Alabama, and in eastern districts of Tennessee; rain in excess of average

reported from Oklahoma, also an excess in Arkansas and western Tennessee. In the North Central division large excesses are reported in Missouri, Kansas, Illinois, and Iowa, and about an average amount elsewhere. In the Western division the May rainfall was slightly above the average in California, Colorado, Utah and Wyoming, and nearly normal in all other sections.

The Stock Interest.

THOROUGHbred STOCK SALES.

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

AUGUST 24—Henry Comstock & Sons, Poland China, Cheney, Kas.

OUR EXPORT DEMAND.

That we are able to produce more breadstuffs and meats than we can consume makes us subject to the foreign demands to a degree that many wholly ignore.

Every year that we have a surplus we notice that the greater the surplus the lower is the price of our crop. So that we often find that our biggest crop brings us less cash than the small one.

Since the markets of the world have been connected by the cable and telegraph, it is known among traders each day where there is a shortage, and since the steam vessel has largely superseded the sailing vessel, the importers and exporters are quick to draw on the country having a surplus to supply those which have a shortage. This quick exchange of information, with ready and rapid transit, helps to keep the prices of the markets of the world more nearly together.

It is for these reasons that Liverpool prices may be taken as the world's prices of our staple products. Her market is supplied from every country that has anything to sell. If wheat, or cattle, horses or hogs are cheaper in the United States than in Russia or Argentina, the Liverpool buyer has his choice of the markets.

Supply and quality are generally supposed to be the factors that determine the price. But when we have to sell our surplus in a foreign market, where we shall sell may be determined by that other factor of freight. That may be so high that we cannot get the benefit of the highest market, because it may cost so much to place our produce there that we can better afford to sell in a cheaper market where the freight and other expenses may be less. This fact, then, shows that the farmer and stock-grower have as direct an interest in ships and shipping as in the railroads. They, like the manufacturer and miner, must have shipping facilities that will enable them to place their products in the market that is paying the best prices.

We are reminded, then, that the great amount of preaching to breeders and growers of hogs, cattle and horses that they must suit their products to the market is only one of the great factors that enter into our export business.

We swine-growers have not given as much attention to this feature of our business as it merits. We have in a half century astonished ourselves and the world at the amount and quality of hogs we have produced. We have had so great success that we have invited the attacks of all producers of swine in foreign countries. We have produced beef and pork equal to the best, and in quantity to reduce the prices claimed to be necessary by the German, French and British growers of cattle and hogs.

So long as our beef and pork continues to find buyers in these foreign countries, so long may we expect the vigorous and unjust assaults of rivals. Their bitter and false charges against the quality of our products are the best evidence of the excellence of our meats. If the meats were half as bad as our rivals have asserted, they could not have found so ready sale.

The extent of our exports has been lessened and our reasonable profits have been curtailed by the false rumors and persistent attacks made upon our products. In Germany and France our pork has been misrepresented by agrarians, and legitimate trade hindered by hostile legislation. In the British Isles we meet with a more honorable rivalry.

The producers there do not charge that our cattle are diseased, and our pork is trichinous and unwholesome, but they make the most of the peculiar feature of their special and limited trade in bacon. Their packers and curers have deftly handled the light, lean carcasses characteristic of their region, and have created a trade for lean bacon that they are honestly entitled to. It is limited because artificial, and in a sense

local. Lean, mild cure bacon is as distinctly an English product as limburger cheese is a German product.

To make limburger the standard of excellence for all cheese that is to go into the German market would be as consistent as the claim we hear so much of now, that the true test of excellence in bacon and the bacon hog is the amount of leanness. So long as limburger cheese suits the taste of some German consumers, so long will they prefer it; but until the consumers of cheese generally develop a taste for limburger there will still be a good market for the other kinds of cheese, which suits the taste and purse of the mass of cheese eaters.

That the whole world is not crying for the kinds of bacon and pork produced in Germany and England is clear from the foreign demand for American pork.

All this special pleading for a certain kind of pork or cheese loses force in the face of our increasing trade and the assurance of the soundness and wholesomeness of our grass and corn-fed beef and pork.

That we have a good export trade in pork products, and a better one than has any other country, is good reason for our fostering it and studying every question bearing upon it. For one I see greater encouragement to our business in increasing means of transportation by land and sea than in change in kind of meats produced.

We need greater and cheaper facilities for shipping our products.

We can produce more than we can consume, and we must look to means of supplying foreign buyers with our meats at a lower cost for same grade of products than can any other country.

This means more shipping facilities, encouragement of American ship building, after the manner of England and Germany, that now carry nine-tenths of all our \$689,000,000 worth of agricultural products at a cost to us of about \$250,000,000.

That our pork products are not inferior is seen in the fact that we exported \$82,971,681 worth of it in 1897.

That the hog brings to our country more ready cash than do all other live stock is seen from the fact that of horses, cattle and sheep and their products exported amounted in 1897 to \$76,375,174. That is to say, our much-abused hogs brought to America more of foreign gold by \$6,596,507 than did all our exports of horses, cattle and beef, sheep and mutton combined.

It is poor policy to demoralize such a business by asking farmers in the corn belt to stop growing such salable pork, and try to grow the kind that those have to grow who are short of corn, clover and grass. It is better to let our brethren north of the corn belt grow the bacon pig where peas, oats and barley grow better than corn and clover.

Let us aim to hold fast to that which we have and extend our trade by suiting the products to our soil and climate.

—P. C. Holme, in American Swineherd.

Steer and Heifer Beef.

Widely different opinions are held as to the comparative value of steer and heifer beef. American packers rate steers at from 25 to 50 cents per hundred more than heifers of the same age, breed and general qualities. On the other hand, the opinion in England is the reverse, heifer beef being rated higher than steer beef.

For some years feeding experiments have been made at the Iowa station to study the comparative value of steers and heifers for fattening. In the first trial one lot of steers, one lot of spayed heifers, and one lot of open heifers were used. They were all grade Short-horns, as nearly alike in breeding and development as possible. There were five animals in each lot. The lots were fed and treated in the same manner. Seven of the heifers calved during the trial, which interfered with the comparison. The steers made a larger gain and sold for 1 cent per pound, live weight, more than the heifers. During the whole test, which lasted about eleven months, the steers made an average gain of 806 pounds; one open heifer, clear of calf, gained 775 pounds; four open heifers that had calves made an average gain of 628 pounds; two spayed heifers, clear of calf, made an average gain of 736 pounds; and three spayed heifers that had calves averaged 645 pounds gain.

The steers were sold at 5.75 cents and the heifers at 4.75 cents per pound, live weight. Allowing 3.5 cents per pound for the steers and 2 cents for the heifers at the beginning of the trial, there was a profit of \$64.39 on the steers, \$30.51 on the unsplayed heifers and \$13.76 on the spayed heifers. The average proportion of beef in the carcass was 63.2 per cent.

for the steers, 62.4 for the unsplayed heifers, and 62.8 for the spayed heifers.

When slaughtered, the carcasses were cut and judged by an expert. The heifers gave a larger percentage of prime cuts (ribs and loins) than the steers, so that, on the basis of the meat and by-products obtained and the price paid for the steers, the heifers were worth from 0.57 to 0.62 cent a pound more than was paid for them.

Crediting each lot with the actual value of the different cuts and the by-products, and not including the expense of killing and handling, it is calculated that, at the prices which the butcher paid, he made \$20.45 on the steers, \$58.12 on the unsplayed heifers, and \$64.84 on the spayed heifers. In other words, the returns made by the heifers would have justified a purchase price of \$5.37 per hundred for the spayed heifers and \$5.32 for the open heifers, instead of \$4.75 for each, and still have left the same profit as with the steers.

The results of a second trial to compare steers and heifers for beef production have been recently published. The test was made with fifteen pure-bred or high-grade Herefords. The animals were divided into three equal lots, one of steers, one of spayed heifers and one of open heifers, and all were fed alike during the fourteen months.

The results of the experiment are briefly summarized in the following table:

	Average weight at end of test.	Average daily gain per head.	Average gain per head.	Average cost of feed per pound of gain.	Average cost of feed per pound of gain.
Steers.....	Lbs. 1,388	Lbs. 1.71	Lbs. 8.70	Cents. 4.08	
Open heifers....	1,300	1.86	7.67	3.65	
Spayed heifers...	1,337	1.70	8.60	4.05	

As shown by the experiment, the heifers made a slightly greater average gain from correspondingly less food and at a less cost than the steers. Carefully conducted slaughter and block tests did not reveal any material difference in the character, composition or quality of meat from steers and heifers, although the percentage of high-priced cuts, ribs and loins was greater in both lots of heifers than in the case of the steers.

It has been claimed that the principal cuts in heifer carcasses contain more fat than those of steers, and are therefore less palatable to the consumer. The average cost of the beef to the firm purchasing the cattle raised in these experiments was 6.51 cents for the steers, 6.21 cents for the spayed heifers, and 6.14 cents for the open heifers. The average selling price received by them was 6.59 cents, 6.26 cents, and 6.24 cents, respectively.

It was observed in this and other investigations, that under similar conditions heifers are inclined to take on flesh a little more readily than steers. Larger gains by the heifers may not be shown, but there is a tendency to finish at a little earlier stage in the process of fattening. The difference between steers and heifers in this regard, when fed under the same conditions, has also been noted by practical stockmen feeding on an extensive scale.

The fact is emphasized that heifer beef has been much underestimated, since in both trials the heifers have returned a higher net profit on the block than the steers, notwithstanding the fact that steer beef was rated higher than the heifer beef. So far as could be learned from these experiments, spaying had no particular influence on the gains made.—Bulletin United States Department of Agriculture.

Gossip About Stock.

On another page will be found the advertisement of the Victor Novelty Co., of Chicago, Ill. They are selling a novelty of great convenience to every owner of a cow. Be sure to read it.

Breeders intending to exhibit live stock at the Omaha exposition should not forget that the entries close August 10, and all animals offered for entry must have been owned by the exhibitor on the 10th day of July, 1898.

Wool and Cotton Reporter says that Western wool-growers are now dominating the wool market, holding for their own prices. Will somebody please state what productive situation the Western grower does not dominate right now? If the husbandman isn't the autocrat of the breakfast table this year, the position is empty.

Mr. M. W. Dunham, Wayne, Ill., sailed on Tuesday, the 21st inst., from New York, on the Kaiser Friedrich, of the German-American line, for France, where he intends to spend the next six weeks or so, buying a successor to Indre,

Many Fail ; One Succeeds.



"A scientific marvel" is what the best mechanical judges say of the SAFETY HAND SEPARATOR. Many concerns have tried to put out machines equally as good. They have tried to capture the farmers' trade by lower prices, only to find out, when too late, that a good separator cannot be made for less money. It has no real competitor.

BRANCHES: P. M. SHARPLES, West Chester, Pa.
Elgin, Ill.
Omaha, Neb.
Dubuque, Iowa.

the famous stallion he sold to Mr. L. V. Harkness, and various other recruits for the Oaklawn stud. Mr. James M. Fletcher, his nephew, who will make an extensive importation on his own account, sailed for France on the same boat.

Col. Sam Pratt, an old-time Concordia, Kas., shipper, topped the hog market to-day at \$4.05. He has contributed more swine to the Kansas City market than anybody, and the class he handles is evidence that he is a better judge of the American hog than the Spaniards are of the "Yankee pig," and the record will show that the Colonel never gets left in the deal, as the Spanish have thus far.—Drovers' Telegram.

C. H. Butler, of Frankfort, Kas., showed up this morning with sixteen head of choice Polled Angus steers weighing 1,291 pounds, that brought the fancy price on the current market of \$5 per hundredweight, paid by Samuel Krauss. These steers were 30 months old and were bred, raised and fed by Mr. Butler. The cattle were on full feed for eight months, and during that time made the good gain of 470 pounds. Mr. Butler has been breeding this class of cattle for the past thirteen years, and after to-day's sale it is hardly necessary to state that he has made a success of it.—Drovers' Telegram.

Partisan, the famous French Coach stallion advertised in these columns a few weeks ago, has been sold by M. W. Dunham, Wayne, Ill., to a company of farmers and breeders near Crystal Lake, Ill. Among the members of this company may be named John Palmer, Samuel Price, H. Troop, B. Troop, W. B. Fitch, L. Crow and others of equal prominence in the locality in which they live. Partisan is one of the best types of the well-bred Coach stallion in this country, and with the mares he will have is sure to succeed as a sire of the sort of horses that are now selling to such good advantage. Partisan has been a winner in the show ring ever since he was a foal, and when 3½ years old was placed second to his sire, Perfection, at the New York horse show in the class for stallion and get, four weanlings—all the colts he had ever begotten—being shown with him.

Notice to Breeders.

Every Kansas breeder of improved stock who expects to exhibit at any of the fairs or the Trans-Mississippi exposition at Omaha, is requested to send particulars at once to H. A. Heath, Secretary Kansas Improved Stock Breeders' Association, Topeka, Kas.

Free to all Women.

I have learned of a very simple home treatment which will readily cure all female disorders. It is Nature's own remedy and I will gladly send it free to every suffering woman. Address Mabel E. Rush, Joliet, Ill.

The Zenner-Raymond Disinfectant Co., manufacturers of Zenoleum, which possesses great value as a sheep dip, vermicide, antiseptic, writes us that at the request of publishers they have arranged with the Richardson Drug Co., at Omaha, to prepay freight on all orders of one gallon or more of Zenoleum sent direct to them by farmers or stockmen who are unable to buy Zenoleum of their local dealers.

Do You Intend Moving?

Why not investigate southwest Missouri, southern Kansas, northwest Arkansas, Indian Territory or the Texas coast country? The manufacturing, farming and stock raising industries of these sections are attracting considerable attention. The chief centers are reached via the Frisco line. For ticket rates and full particulars, address Geo. T. Nicholson, Gen'l Pass. Agt., St. Louis, Mo.

DEAD SHOT for HOG CHOLERA is guaranteed to cure and prevent cholera in hogs or fowls. Never fails. 25 and 50 cents per bottle, by all dealers, or the Cannon Chemical Co., St. Louis, Mo., wholesale agents.

The Home Circle.

CONTENTMENT.

Little I ask; my wants are few;
I only wish a hut of stone,
(A very plain brown stone will do)
That I may call my own;
And close at hand is such a one,
In yonder street that fronts the sun.

Plain food is quite enough for me;
Three courses are as good as ten;
If nature can subsist on three,
Thank heaven for three. Amen!
I always thought cold victuals nice;
My choice would be vanilla ice.

I care not much for gold or land;
Give me a mortgage here and there,
Some good bank stock—some note of hand,
Or trifling railroad share.
I only ask that Fortune send
A little more than I shall spend.

Honors are silly toys, I know,
And titles are but empty names;
I would perhaps be Plenipo,
But only near St. James;
I'm very sure I should not care
To fill our Gubernator's chair.

Jewels are baubles; 'tis a sin
To care for such unfruitful things;
One good-sized diamond in a pin—
Some, not so large, in rings,
A ruby and a pearl or so,
Will do for me—I laugh at show.

My dame should dress in cheap attire;
(Good, heavy silks are never dear);
I own, perhaps, I might desire
Some shawls of true cashmere,
Some narrow crapes of China silk,
Like wrinkled skins on scalded milk.

I would not have the horse I drive
So fast that folks must stop and stare;
An easy gait—two forty-five—
Suits me; I do not care;
Perhaps just for a single spurt
Some seconds less would do no hurt.

Of pictures I should like to own
Titians and Raphaels three or four—
I love so much their style and tone—
One Turner and no more,
(A landscape—foreground golden dirt—
The sunshine painted with a squirt).

Of books but few—some fifty score
For daily use, and bound for wear;
The rest upon an upper floor;
Some little luxury there
Of red Morocco's gilded gleam,
Of vellum rich as country cream.

Dusts, cameos, gems, such things as these,
Which others often show for pride,
I value for their power to please,
And selfish churls deride;
One Stradivarius, I confess,
Two meerschauts, I would fain possess.

Wealth's wasteful tricks I will not learn,
Nor ape the glittering upstart fool;
Shall not carved tables serve my turn,
But all must be of burl?
Give grasping pomp its double share—
I ask but one recumbent chair.

Thus humbly let me live and die,
Nor long for Midas' golden touch;
If heaven more generous gifts deny,
I shall not miss them much—
Too grateful for the blessing lent,
Of simple tastes and mind content.

—Oliver Wendell Holmes.

Written for Kansas Farmer.

PERILS OF YOUNG MEN OF OUR DAY.

Volumes might be written upon this subject, and if written by young men, who themselves know better than older people can the perils to which they are exposed, such books would prove a valuable acquisition to our libraries, public and private.

While I believe that the world is growing better, and that we have more and better facilities for acquiring education than ever before, still there are evil influences at work in every community. In our cities may be found plenty of entertainment and harmless recreation for young men who wish to maintain a good reputation. There are free libraries and reading-rooms, and various clubs and societies which are calculated to furnish harmless recreation. Yet evil is ever present, and the unsuspecting young man is allured and tempted with promise of pleasure and profit.

Theaters, clubs and all the gambling devices contrived by man's ingenuity are traps kept set and always in repair to capture and deprive young men of their morals and honor, as well as their money.

There is the parlor saloon, resplendent with music and light; costly portraits and landscape paintings in silken drapery adorn the walls; brilliantly glitters the silver and gold and silver-plated table and shelf ware; smoothly polished is the marble floor; there are easy chairs and sofas of velvet; there are tables with free lunch; free reading of the world's leading and most popular newspapers and periodicals. This parlor saloon is a palace car on the road to ruin, and the line is all down grade.

The poor, besotted wretches who now frequent grog-shops and low dives down town started—many of them—in this popular resort, when they were respectable, little suspecting the peril involved.

When Sunday comes these places are closed. Wide open are thrown the gates of beer gardens, parks and playgrounds in the suburbs of the city. Invitations

and handbills are sown and distributed broadcast. Carriages and street cars are stopping at every street crossing, ready, for a small fee, to convey the masses of young men to these Sunday resorts of revelry.

In smaller towns and in the rural districts thrive the Sunday baseball game, hunting and fishing parties, racing and shooting matches; and upon our tables may be found the Sunday news and sporting papers and novels of low merit, romantic and pleasing to such as would rather be amused than instructed. There is a peculiar fascination about light reading which beguiles young men in leisure hours—a dissipation of the mind.

Young men of our day, with their great love for amusement, become an easy prey to the enemies of their souls. It behooves us, then, to be at all times vigilant and sober, true to the best impulses of our judgment, obedient to the dictates of conscience, heeding the wise admonition of the Scripture, "Abstain from all appearance of evil."

Truly, I believe that many of the perils which so commonly beset us might be avoided by being select of our company, and not associating in common with those who disregard the Sabbath or make light of religion. We are characterized and known to a great extent by the company we keep, and the best friends a young man can have are Christian friends.

JAY VEE.

Wakarusa, Kas.

A Chance Portrait.

"I was spending the summer on that quaint old isle before the rush of summer tourists had put an end to its old-time charm. I sketched a good deal out of doors, but when the weather was bad I made the best of it by working on what I considered a pretty good picture of the interior of one of the old houses, or at least of the one big room that lent itself best to my purposes.

"The people who owned the house were so very nice to me that when I finished my picture I thought to repay them in part for their courtesy by making for them a sketch of my more ambitious canvas. For the sake of variety, however, I drew in the figure of an old man sitting in a big chair and gazing abstractedly into the fireplace. It was a fancy figure, pure and simple, and drawn without model, but the face belonged to the type that one so often sees along the New England coast, a type that is unfortunately growing rarer as the years go by.

"But imagine my surprise, however, when I came to present the sketch to my friends, for they drew back from it as if I had given them something uncanny, and the man said:

"Why, that's a picture of my father, precisely as I have seen him sitting in front of that fireplace hundreds of times, gazing into the coals and thinking of the days when he captained one of the biggest whalers that sailed out of the harbor of Nantucket."

"And his wife bore out his statement when she said that it was an admirable likeness of the old man, who had died many years before I ever visited the island.

"The neighbors were summoned in, and every one of the people who had known the old man recognized the likeness without a moment's hesitation. They said that in every detail of face and figure it was as accurate as a photograph could possibly have been.

"Now, of course, it was only a coincidence, but you could never have made any of those people think that there was not something supernatural about it all—and, do you know, I am more than half inclined to think that they were right."—Washington Star.

To Your Friends at War.

"It seems queer that the people of this country—the educated people, I am speaking of particularly—should exhibit so much indefiniteness as they do in addressing by mail their relatives and friends who are soldiers in the field or sailors on the sea," said a postal official in the railway mail service. "There has already been a huge amount of trouble in handling the letters and papers thus indefinitely forwarded to the soldiers, and the general mix-up of the mails at Chickamauga, for example, has been something extraordinary, and yet natural enough, considering the way most of the pieces of mail matter arriving at that military rendezvous have been addressed.

"A very great majority of the letters that have been sent from all parts of the country to the young men now under arms down at Chickamauga park have been absolutely lacking in any information on the envelopes that could

Ask Your Neighbor



whose house is conspicuously clean, whose work worries her least, whose leisure time is greatest, how she manages. The chances are ten to one she will answer:

"I do all my cleaning with

GOLD DUST Washing Powder

Sold by all grocers. Largest package—greatest economy.

THE N. K. FAIRBANK COMPANY,
Chicago. St. Louis. New York. Boston. Philadelphia.

aid the postal clerks in locating the addresses without a very great deal of trouble. The letters have nearly all been of the 'John Smith, Chickamauga,' sort; and when you come to reflect how many thousands of soldiers there are down there, and the great numbers of duplicate names, you can figure out how much difficulty the postoffice people have in properly assorting and delivering the mail. It does not seem to occur to many of the people who write to soldiers in the field to name the outfits on the envelopes to which the addresses belong.

"If they were to do this there would be little or no trouble in distributing the mails at the military centers. For example, instead of plain 'John Smith, Chickamauga,' the address, with a few more strokes of the pen, could be made to read, 'Corporal John Smith, Battery G, Seventh artillery, U. S. A., Chickamauga,' and thus Corporal Smith would not have to hang around the postoffice with a wistful eye for days at a time awaiting that letter from his timorous sweetheart.

"The friends and relatives of man-o-war's men, addressing the letter by mail, even in times of peace, cause considerable delay in the delivery of their epistles by too much indefiniteness in addressing the mail. Instead of addressing their letters directly to the ships upon which the addressees are serving, as, for example, 'Edward Robinson, U. S. S. Brooklyn, U. S. Navy,' which insures the forwarding of the letter by the postal authorities to the navy pay office of the station to which the Brooklyn is attached, the addressors, as a rule, simply write, 'Edward Robinson, U. S. Navy.' Aside from the great probability of there being duplicate names for many letters thus addressed, all such letters have to go first to the Navy department, where, by reference to muster rolls, they are assorted, and, after considerable delay, readdressed to the men for whom they are intended."—Washington Star.

Ever Bid at an Auction?

If the women who have been bidding, not wisely but too well, at the spring auctions, would like any sympathy, they can get it in an unexpected direction. There is a young man, a hitherto haughty young man, who has learned that all flesh is as grass before the mighty breath of an auctioneer's eloquence.

It was his first auction, his very first. He is a bachelor, and so it had never really been brought home to him that one should flee with terror from that red flag which says "Sale To-day." He had never laughed cruelly at a wife who had been attacked by the auction fever. He was so ignorant, in fact, that he didn't know enough even to be afraid. He tells the story as if he doesn't know yet what happened to him.

"There's a place up in the next block," he suddenly said to the reporter. "You ought to go in there. You'd get a good story. It's—it's awful queer."

"What sort of a place is it?" hopefully. "Good stories" are scarce and this sounded promising.

"Why," with a far-off, reminiscent stare, "it's an auction. They—they sell vases and pictures and ornaments and—clocks. You ought to go in."

A pause of expectancy on the reporter's part—of apparently sober thought on the part of the young man.

"I went in yesterday," he resumed. "A fellow I know showed me a vase he got there the other day—bought it for 3 cents. I was going by yesterday, so I just went in for a minute. And pretty soon," with a puzzled look, "I found myself the center of a group of people bidding for a Dresden clock, and

—and I began to think I wanted that clock myself. Did you ever bid at an auction? No? Well, it's the hardest thing to get your voice and say 'A dollar thirty-five.' You wouldn't believe how hard it is. But, somehow, when you've croaked out once, you feel as if everybody around was watching you. If you let another bidder take a thing, you're afraid the crowd will think you didn't have enough money and got frozen out, or you're afraid they'll think you are in league with the auctioneer, trying to boom things up a little.

"Oh, you have forty different reasons for keeping on bidding, and if you didn't have one other, your native pig-headedness would keep you at it any way. Then, too, there was a woman bidding against me for that clock, and I knew she was so wrought up that she didn't know what she was about. I knew she'd regret it afterward, and that her husband would probably be unpleasant, and—well—just as an act of kindness I had to outbid her. At any rate, pretty soon I found myself the possessor of a Dresden clock and the auctioneer found himself the possessor of four of my dollars. I wish I knew as well what to do with that clock as he knew what to do with my dollars.

"I think, maybe, they've got a hypnotist for an auctioneer. You know that would be an awful clever idea. How did they get me to bid for that clock if they didn't have a hypnotist around? Any way, it's awfully queer, for as I came out with the clock I heard at least half a dozen people talking about what they had bought, and saying they didn't know what possessed them to do it. Don't you think there's something queer about it? I thought you might get a story about it."

The reporter intimated that such things had happened before.

"Yes, to women, of course. But not to men!"

It was suggested that as men rarely go to auctions they have not been tempted.

"That's so. This was my first auction, and I've got a Dresden clock to remember it by. Well, there's one thing that clock will never tell the time for!" with sudden determination.

"What's that?"

"An auction."—New York Sun.

Deafness Cannot Be Cured

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

We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars, free. F. J. CHENEY & CO., Toledo, O. Sold by Druggists, 75c.

1898 Bicycles Down to \$5.00.

New 1898 Model Ladies' and Gents' Bicycles are now being sold on easy conditions as low as \$5.00; others outright at \$15.95, and high-grade at \$19.95 and \$22.50, to be paid for after received. If you will cut this notice out and send to SEARS, ROEBUCK & CO., Chicago, they will send you their 1898 Bicycle catalogue and full particulars.

The Young Folks.

THE BATTLE CRY OF FREEDOM.

Yes, we'll rally round the flag, boys, we'll rally once again,
Shouting the battle cry of freedom.
We will rally from the hillside, we'll gather from the plain,
Shouting the battle cry of freedom.

Chorus—
The union forever, hurrah! boys, hurrah!
Down with the traitor, up with the star,
While we rally round the flag, boys, rally once again,
Shouting the battle cry of freedom.

We are springing to the call of our brothers gone before,
Shouting the battle cry of freedom,
And we'll fill the vacant ranks with a million freemen more,
Shouting the battle cry of freedom!

We will welcome to our numbers the loyal, true and brave,
Shouting the battle cry of freedom!
And, although they may be poor, not a man shall be a slave,
Shouting the battle cry of freedom.

So we're springing to the call from the East and from the West,
Shouting the battle cry of freedom.
And we'll hurl the rebel crew from the land we love the best,
Shouting the battle cry of freedom!

—George Frederick.

A CHILD'S COUNTRY.

The minister of one of the poorer mission churches in a large Eastern city had just settled himself in his little study for a quiet time after a hard day, when the shrill ring of the door-bell indicated that the good man's duties were not yet finished.

He laid aside his book and arose to meet the careworn little woman who was shown into his plain, bare study, which had been a haven of refuge to many sorrow-laden souls.

Encouraged by his kindly look, she began speaking hurriedly.

"I have heard how you always managed to help people, and I thought I'd come and tell you."

He motioned her to a chair, with the rare warm smile so many knew, and watched her eagerly.

"I've got five little letters, written by a sick child, my child, and I thought if only I can get them printed—I thought as you was so good, and a minister, maybe you'd help me." She paused, as if expecting a refusal.

The minister was silent. He had not been called upon to supply this kind of help in his work before, but the woman's look of anxiety indicated how vital to her was the request.

"You want to be paid for them?" he suggested.

"Yes," she said, eagerly, "I thought perhaps I'd get a little something for them. Maybe you'd look them over, sir, and tell me if they're any good. I can call and find out." She timidly held out a little roll of paper to him.

He perceived that she was in need of help and took the package she handed him.

"I will read them," he said, kindly, "and see what can be done; you may call to-morrow."

After she had left him, with broken sentences of gratitude and an expression of relief upon the weary face, he turned to the little roll and read the address on the outside, written in a child's round hand, with a feeling of curiosity and pity for this little unknown aspirant.

And this is what the minister read, and then re-read, to lay carefully in his desk when he had finished:

Letter One

meadow land

the grass here sticks up lots of little green tungs you can look way off and see all sky it makes me feel like as if all the ceiling and walls of sky was washed.

They are so clean

The trees are so big and soft when they blow in the wind they sound something like when you wave a newspaper very soft. They wish and rustle.

the sun is going down so i must stop i hate to go in and leave the out doors it makes me get out side of the feelin of it just like you forget the taste of ice creme if you drink water after it

Goodbye

Catherine

Letter Two

meadow land

Dear mother,

the flowers are so many here and smel so sweet they are like the ones on that sweet smeling pictur card that had the name of the perfumery on it only the flowers here are sitting among the gras.

This mornin i fond a little brook it looked like the water runen out of a spout only it was lyn down and by the brook a leaf with water in it. like once

when it rained on your geranum and the leafs was pretty holdin water.

This leaf made a littel lookin glas for the grasses to see them selfs in.

the dear trees are so thick they stand in front of the sky so you cant see it. i think the best way you can feel how many there is is to put the chaers all round the table and then get under the table, you must sit on the pece of green carpit for gras. Al the legs are trees.

God sticks new flowers in the gras every day and sews new leafs on the trees.

Goodby

Catherine Clayton.

Letter Three.

meadow land

Dear mother,

I fond an apple tree today with all the apples hangin on the tree like you told me they grew, like the red balls on the tidy only a few had got unpined and had fell down

i havnt told you about the nights they are so big and the stars sprinkel all the sky. you want to take a papper and prik hols in it and then look at the lamp thro it. That is the way the stars look out of doors where there is no houses.

like as if the next day was in such a hurry to come out it keeps peekin, i have found a play mate she has always lived here

goodby Catherine Clayton.

Yop must not feel bad dear mother that you cant come here i will tell you all about it i wish you could come.

Letter Four

meadow land

Dear mother,

my play mate was talkin today, she said we had better leave meadow land for a littel time and see some other meadow to play in. it makes me feel bad for i love this place it was the first i fond. this meadow is to lovely we are going to leve it so it wont be too grand

Once you told me the doo made all the feilds wet every night my play mate says that is the way the flowers are sprinkeled and folded down in the mornin the son lorns them all out.

my next letter will be the last from here. goodbye your dauter

Catherine Clayton.

Letter Five

meadow land

Dear mother,

the son didnt shine in meadow land today and i have said goodby to it. I am very lonely we went out when the son went down.

Be for we went i said goodby to everythin i wanted to pick a flower but it would be so lonely i dint. I cant say much about meadow land i miss it so.

goodbye Catherine Clayton.

The minister, after long wanderings, had found the street, or rather alley, which he sought, and finally the house. He inquired for Catherine Clayton and was directed to the top floor, "back room."

"She is probably in the country yet," he thought; he believed he understood the woman's anxiety to make use of the letters; in desperation she had turned to them as a last resort by which to obtain the necessary money that would enable her to keep the child in the country longer, away from this dark, unhealthy place.

He reached the top floor and knocked at the first door he saw in the dim light. A faint call came in response, and he entered a little dark room. The window opened upon the brick wall of the next tenement.

A lamp burned on the bare table for warmth, as the stove contained no fire. At one end of the room stood the bed, from which came the voice that had answered his knock.

He crossed the room and met the surprised eyes of a thin little child.

"Mother is out," the occupant of the bed volunteered.

The minister smiled and asked gently if this little person could "tell him where Catherine Clayton lived; he wanted to find."

"Why, but I'm Catherine Clayton," interrupted the child.

"Ah, then you've come back from the country," he said.

"I never was in the real country," she answered, wistfully. "I have only been to the Meadowland, and that is only play country; I can't play that now; it is too cold to get out of bed."

The minister drew a chair to her side; he noticed a little wreath on her head, made of pieces of green tissue paper cut in oblong shapes.

"Tell me," he said, "who wrote the letters from the country?"

A look of understanding crept into her eyes.

"How did you read them?" she faltered. "Why, I wrote them for mother,

one every night. It was after I was sick and was shut in; I wrote them here."

"Here!" repeated the minister, glancing around the small, cold room, with its one green thing—a sickly geranium in the window.

"Yes, here," she went on, shyly. "You see, I got tired of being here alone all day after I had the fever and couldn't go out. Mother works in a coat factory and don't come home till night, so I made up that this was a country. I played it was just like what mother told me her home in the country was when she was a little girl, and in school they used to tell us about it, and had things growin' in boxes in the windows."

She had told him of her invention with such enthusiasm that the little paper wreath fell from her head. The minister picked it carefully up; he was silent, for there was that in the room that forbids speech.

She thanked him and said, apologetically: "I made it, for I'm a tree, you see, as it's too cold to play out of bed now, and mother hasn't had any money to get me some stockings."

She folded back the blanket and showed him that she had sprinkled the little pieces of green tissue paper all over herself.

He understood that they were leaves. Then his bright smile flashed out and he began a conversation with his little country girl.

He would wait for her mother, he said, and she must tell him all about herself. Would she like to go to the real country?

Wouldn't she! Her eyes grew glad. "But I never shall," she ended, sadly, "because we are poor."

To divert her from this mournful subject he began to talk of flowers; she grew happy again at the thought.

"I used to look in a flower store on my way to school," she said, eagerly. "I knew just when they would put the different kinds in the window and their names. Once, do you know, a lady comin' out dropped a violet; she didn't want it, so I brought it home. It's pressed now. I used to plant it in the Meadowland. Do you know if they have violets in that store now?"

It never occurred to her that there might be more than one of those wonderful flower stores in the city.

Then the minister told her a long story of flowers. She had never heard of such wonders. The time went before she knew it, and her mother's step was heard on the stairs.

"Oh, mother, mother," she cried, joyfully, "such a good man has been talking to me."

The woman's tired face brightened when she saw the minister.

"You are kind to come," she said. "I didn't expect it."

"I am glad to come," he replied; then, in answer to her inquiring look, "I shall take the letters, and we will find a place for them."

She turned with a quick movement to the puzzled child.

"Darlin' Catherine," she said, with a break in her voice, "mother took the little letters you wrote her to the good, kind minister, and he's goin' to get them printed in a paper for us."

"My letters!" repeated the child in amazement, and the minister did not soon forget the unspoken gratitude on the two happy faces as they turned to him.

So the minister carried the letters to a friend, and when he had told the story of their little writer, and of the way they came to be written, the editor took them, just as they were, to insert in his journal, and he wrote above them the story of Catherine's country as the minister had told it to him.

Thus the letters went forth to tell of the country, so beautiful, that one little girl had found.

And one day the minister appeared on one of his now frequent visits and placed within the thin hands the precious paper and a check, sent "To the little country girl."

But this was not all the letters did; they had opened the way to a greater country than they pictured. Poor and queer as they were, they had been able to place the glorious promise of a real Meadowland into the hands of their little composer.

For when the spring came back the minister called on Catherine with a very merry look in his kind eyes, and taking her on his knee, asked if she could be ready on the morrow to go to the real country with him, where they two could grow happy and well together among their friends, the flowers.

"You and I need a little of God's sunshine and the fields to make us strong again," he said, and the child, too happy for speech, could only cling to him in a

dumb, loving way, but dimly realizing the joy that awaited her.

And the next day she went from the first-found meadow, to find the fairer fields of the long-dreamed-of country.—Mary Ely Page, in the Silver Cross.

Cats Make His Living.

There is an odd little man named Eichner, who lives in an odd little house in the heart of the busiest portion of San Francisco, who earns his bread oddly enough. His business is the raising of cats, which he puts into warehouses, stores and other places infested with rats and mice, and his income is derived from payment for the services of his pets.

"Raising cats is my business," he said. "We get along all right, don't we, kitty?" Kitty settled down on his knees and purred her answer.

"I see enough of them to like them," he went on, "for I feed between 150 and 200 every morning. This," pointing to a large basket, "I take full of meat, and that can in the corner is filled with milk. I go first to the warehouses on the docks, and then come further uptown to the business houses."

"I do not often sell a cat. I raise them, train them for a while, and then place them in some warehouse or store where the services of a cat are necessary. Then for so much a month I take care of them. Would you like to see where they play? If you come this way I will show you."

He opened a door and took me into a queer little court. Three sides of the inclosure are banked by buildings as old as the house where the cats live. The fourth side is a big brick structure, modern style. An attempt at a garden had been made, but even the lonely green geranium looks sorry and forlorn.

And the cats! If there were many in the house there are many more out here. Asleep in a box of excelsior is a beauty. He is marked exactly like a tiger. As you pass through, narrow yellow eyes glance at you. If you bend to stroke him there is a sudden whirl and the next you see of the tiger he is on the roof of a shed gazing at you in rather an unpleasant manner.

"Doesn't like to be disturbed," says Mr. Eichner. Down a pair of rickety stairs into the poor little garden and you hear a great scamper of disturbed kittens. They have just been fed and like to sleep a bit.

After a while we go back into the house and Mr. Eichner tells me how he lost his wife a few years ago and since then he has lived all alone in the second floor of the shanty. "My only son is employed in the Smithsonian Institution, in Washington," he says. "It's a bit lonely here; but my cats are company, you know."—San Francisco Call.

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SHALL THERE BE A NEW AMERICAN DOCTRINE?

The report comes that the insurgents in the Philippines have formally declared themselves independent of Spain, and have set up a provisional government, republican in form, with General Aguinaldo as President, Cavite as capital and the warships of the United States as protectors. The new-born government seems to meet the approval of Admiral Dewey and to invite at least a temporary protectorate from the United States. The people who have determined to throw off the Spanish yoke, and who have shown their appreciation of the sound advice given them by Admiral Dewey, and have abstained from acts of barbarism towards their many Spanish prisoners of war, have displayed qualities of character, abilities as fighters and wisdom as organizers, which have been a glad surprise to the civilized world. They are apparently qualified to assume responsibilities of citizenship and of government. This may well relieve the United States of a task fraught with perils to our home civilization and complications with other nations.

We had formally declared that we had no intention to annex Cuba, but only meant to help her people to free themselves from injustice and oppression. But in pursuance of this purpose we came face to face with a necessity to destroy Spain's Asiatic fleet, in order to protect our Pacific coast from danger of attack. In destroying this fleet we incidentally helped and received help from a people in the Philippines who were struggling against oppressions, worse, if possible, than those of the Cubans, for whose sake we went to war. The case of either the Cubans or the Philippines was so infinitely worse than that on account of which our forefathers went to war with England that no comparison can be made.

But we had been led to believe that the people of the Asiatic islands were incapable of self-government, and that, should we assist in wresting them from Spain, we would be under obligations to either transfer them to some other civilized nation, to divide them among several nations, to return them to Spain or to acquire and keep them as a part of the possessions of the United States.

The conservative sentiment which believes that America is big enough for Americans and that our highest and best development—the surest fulfillment of our mission to humankind—is to be found in pursuit of the policies which have made us great, in avoiding the temptations which accompany the acquisition and possession of distant dependencies, in the promotion of the arts of peace and in attending strictly to the material, industrial, mental and moral advancement of our own rank and file—this conservatism received a quick awakening, and was almost carried from its moorings, by the brilliant success of our fleet in the East and by the startling proposition to annex 9,000,000 people and all that belongs to them, even though half the circumference of the globe lies between the seat of government and the tropical empire to be annexed. The glamor of conquest tends to blind many eyes to its dangers, dangers of which the cemeteries of nations throughout the centuries constitute solemn warnings.

The suggestion that this country transfer the Asiatic islands to any other

nation at once stirred up the dogs of war in Europe, and the renewal of the old suggestion of the destruction of the "balance of power" immediately showed that such transfer would probably precipitate the long threatened European war, with possibilities of involving both Asia and America before it could be ended. The suggestion to divide the islands among the powers of Europe was made with apparent sincerity as if it were a matter in which the 9,000,000 people had no more to do than has the ox with the disposal of its carcass. To return them to Spain, that she might for yet other centuries rob, outrage and butcher the people was too revolting a proposition to receive even the scant consideration bestowed upon it.

Assuming, then, that the people of the islands must needs be governed by some outside power, there appeared to be nothing left but for the United States to assume the task. There were not a few commercial, financial, political, religious and other reasons assigned in favor of this proposition. There would be created an outlet for American manufactured goods should the Philippines become an American colony. There would be chances for profitable investment of accumulated capital in enterprises, concessions for which might be managed at Washington. There would be a diversion of attention from economic questions in this country, questions which are being pressed to the front with such persistence that they are likely to control politics. The substitution of debates on jingo and anti-jingo lines for the disturbing questions of economic science might be made to do duty for many years. The Christianization and Protestantization of the people of the islands was made to do duty in favor of annexation. The creation of vast numbers of lucrative positions to be filled by political appointment, the collection of large revenues at great distance from the seat of responsible power, were and are deemed valid and potent incentives for annexation.

But the recent activity of the insurgents on the field of battle, the success of their arms, the moderation of their treatment of captives, the intelligence and patriotism of their leaders, and, last of all, their wisdom in organizing a provisional government, all go to show that, in the disposition of the Philippines, the people of those islands must themselves be consulted. Possibly there may be no more reason why they should be annexed because an event of our war with Spain turned in their favor, than there was for the annexation of Mexico when, a third of a century ago, we brought from the archives the cherished Monroe doctrine and notified France to withdraw her interference from this continent.

If the Philippines are able to govern themselves, and desire only that this country extend to their republic a moral influence akin to the Monroe doctrine, as applied to nations in the Western hemisphere, together with such advice and counsel as may be sought from our citizens, after the manner pursued by the Japanese government when that ancient Eastern nation experienced its awakening, since which it has taken a place among the most progressive nations of the world, why should we do more? Possibly there may be enunciated a principle under the name of "the McKinley doctrine" which shall declare in effect: "That we should consider any attempt on the part of any monarchical powers to extend their system to any republic whose independence we had acknowledged, or exert any influence for the purpose of controlling in any manner their destiny, as a manifestation of a disposition unfriendly to the United States."

The dignity of such a declaration would astound the world and the event would mark an era in the advance of the race beyond the stage of selfish conquest, and at the same time establish the United States as the foremost nation in all the world—a people possessed of virtue sufficient to carry it far above the dangers which have wrecked the nations which have passed into history, the pages of whose record have been darkened by their infamies incident to conquest, to the decay of virtue and to national decline.

GATHER THE WHEAT CROP.

One of the problems now confronting farmers in portions of Kansas is the very important one of harvesting the wheat crop from fields so soft that it is almost impossible to use the reaper. No prescription can be written to meet the case. Conditions vary from farm to farm, and the conditions of to-day may be reversed to-morrow. But while every farmer must determine for himself and from day to day how he will manage, it

should not be forgotten that this wheat crop represents a large part of the labor and expense of the year and should be saved even though at greater cost than had been anticipated. To estimate that the extra expense required will make the crop cost more than it will probably bring, and to conclude, therefore, that the crop is not worth saving, is erroneous. Better to save the crop even though all the work previously done must be counted as lost and the returns worth only the expense of harvesting.

Possibly some discouragement may be felt on account of the great fall in the price of wheat during the last few weeks. Doubtless prices were made too high when at their highest, but now the reverse speculative tactics are quite as surely making them lower than the relations of supply and demand warrant. It is claimed that the world has growing a very large crop of wheat. Not less truly the world is very short of supplies of old wheat and will have at the end of the next harvest year smaller reserves than it had at the beginning of the last.

The entire crop now growing and maturing will sometime be wanted for human food, and it should be saved at any cost which does not exceed its total value.

KANSAS POLITICAL PLATFORMS FOR 1898.

THE PROHIBITION PLATFORM.

The Prohibition party of Kansas, in convention assembled at Emporia, Kas., June 8, 1898, makes the following declaration of principles: We, the uncompromising champions of the prohibition of the liquor traffic, believe it to be the overshadowing curse of our State and nation, and we demand the strict enforcement of our present prohibitory laws. We claim for all persons of legal age and requisite qualifications, regardless of race or sex, the right of a free ballot. With faith in the rectitude of our principles, we invite to our ranks all who are in accord with them, and who are willing to unite with us in the effort to apply them to the government of our State and nation. We regard civil government as an ordinance of good, and recognize the Lord Jesus Christ as King of Kings, and therefore believe that the administration of civil affairs should be in harmony with his law and in his spirit. In behalf of liberty and humanity, we are in fullest sympathy with the action of Congress touching Spain's long-continued and cruel oppression of Cuba.

THE REPUBLICAN PLATFORM.

We, the Republicans of Kansas, in convention assembled, express and record our approval of the national Republican administration in peace and in war. We reaffirm the principles enunciated in the national Republican platform of 1896, and direct attention to the fact that every promise has been kept and every prediction has been verified. We heartily approve the policy of President McKinley in the preparation for and conduct of the war and pledge to him our loyal support in this contest, begun, as it was, at the dictates of humanity and waged, as it is, for the honor of the nation and the freedom of the oppressed.

The experience of recent events has demonstrated that our navy should be immediately strengthened and enlarged so that it will command and compel the respect of the world. We believe that the necessities of war have supplemented the arguments of peace, and that the Nicaragua canal should be built as speedily as possible. We believe that the Hawaiian islands should be annexed, and we urge our representatives in Congress to support the resolution providing for their immediate acquisition.

We favor the most liberal construction of all the pension laws in the spirit of their enactment without technical obstructions or requirements. We urge that preference be given to honorably discharged soldiers and sailors in all appointments of the State and nation, as provided by law. We demand of the Governor and Secretary of State that, in accordance with the statutes of Kansas, they prepare in ample time proper poll books, ballots and tally sheets, and forward the same to the officers of the Kansas regiments in the volunteer service of the United States, so that all officers and soldiers of the Kansas regiments, wherever they may be stationed, may have an opportunity to vote.

We invite the attention of the coal miners of Kansas to the pledges of the Populist platform of 1896 against convict-mined coal in the open market, and the flagrant violation of those pledges by the present State administration elected upon that platform. The last Republican administration made similar

pledges to the free coal miners and kept them to the letter. The Republican party now repeats those pledges against putting convict-mined coal into the market in competition with the product of free miners, limiting the convict output to the needs of the State institutions, and will keep these promises as it does all others, in perfect good faith.

In contrast with faithful performance of promises by the Republican party in the nation we place the broken pledges of the Populist party in the State. Entrusted with power and given absolute control of every branch of the government, they repudiated the pledges by which they had gained success. Their record of inconsistency is rounded out with incompetency and supplemented by corruption, proven by their own partisans in an investigation they made themselves.

On the record of our party for the last fifteen months, in accord as it is with the history of thirty years of Republican rule that gave to our nation its greatest development and prosperity, we appeal to the voters of the State of Kansas, and ask their support for our candidates and principles.

THE POPULIST PLATFORM.

We hereby reaffirm our allegiance to the People's party national platform adopted at St. Louis in 1896.

We commend the State administration for its patriotic and vigorous defense of the rights of the people and its efficient and economic conduct of State affairs. We commend the action of the Populist members of the last Legislature in passing laws that have saved hundreds of thousands of dollars to the people of Kansas. We also commend the course of our Senator and Representatives in Congress for their opposition to issuance of interest-bearing bonds and the encroachments of corporate power upon the rights of the people, and their vigilant devotion to the interests of their constituents.

We demand that the initiative and referendum be embodied in our State constitution, and favor proportional representation.

We favor the public ownership of all public utilities and demand the public ownership and operation of all monopolies.

The State laws regulating stock yards charges having been resisted, we demand that the State of Kansas shall provide adequate market facilities by purchasing land and constructing necessary buildings, yards and other conveniences to furnish the people an open public market and under such regulations as will prevent a combination of buyers and commission men from controlling or regulating prices. Charges for such services to cover actual cost of operation and repairs only.

We demand that the State of Kansas shall provide insurance protection against fire, lightning and tornadoes as a State function, at cost.

These being in opposition to the existing constitution of the State, we demand a constitutional convention to the end that they may be made effectual and that other defects that now exist in our State constitution may be remedied.

We demand the enactment of a freight rate law giving to a court of railway commissioners, to be elected by the people, the power to fix rates and classification of railways, and the further power to compel the railways to make full reports with reference to their business.

Recognizing the great saving and benefits to the people from the text book law passed by a Populist Legislature and put into operation by a Populist administration, we favor its extension along the same general lines to include all text books and school supplies as far as possible.

We demand the enactment of the labor laws necessary for the public weal: First—A law making County Clerks' offices free public employment agencies, the State Labor Bureau to constitute a general clearing house for the surplus applications of the counties. Second—A law making the Bureau of Labor and Industrial Statistics an independent department of the State government. Third—A law completely revising the mining laws, to the end that it may be safer for the miners to work and more dangerous for the operators to disobey. Fourth—A law taxing as costs in actions for the recovery of wages a reasonable attorney's fee for the collection of the same, and providing that in case of an employer's assignment or insolvency wages shall be a prior lien to all attachments and mortgages. Fifth—While the law of 1897, under the operation of which all profits accrued to the State rather than to the middleman under the guise of a contractor, was an improvement on the old contract law, we

declare for a law that will confine the output of the penitentiary mine to the needs of the State institutions, to the end that these institutions shall not in the future be placed at the mercy of a combination of private corporations.

We demand the free and unlimited coinage of gold and silver at the ratio of sixteen of silver to one of gold and the issue of legal tender notes for all debts in preference to the issue of interest-bearing bonds.

We oppose the issuance of all bonds, and we condemn the Republican party for its action in fastening upon the people a large bonded debt ostensibly for war revenue, but in reality for the perpetuation of the national banking system.

Resolved, That we send to our volunteer soldiers our high appreciation of their patriotic devotion to the country and every facility be extended to them to vote at the coming elections, and that their pay be increased to \$20 per month.

We favor service pensions for all survivors of the Union armies of the Civil war.

We demand the immediate suspension of the metropolitan police law and also its repeal by the next Legislature.

We denounce the Republicans in both houses of Congress for the unanimity with which they have followed the dictates of foreign and domestic bondholders in voting against an income tax and the one-fourth of 1 per cent. tax on railroad corporations which are being enriched by government contracts, and also their refusal to tax Wall street transactions.

And we also denounce as unpatriotic the action of the Republican party in following the dictates of those who would speculate and make gain out of our present war while our brave volunteers risk their fortunes and lives in defense of our flag and humanity.

The following resolution was also adopted:

We are opposed in the crisis of our troubles with Spain to the talked-of alliance with Great Britain. It is unnecessary, unpatriotic and un-American. It has for its object the entanglement of this country in the complications of international politics and the imposition upon us of the British monetary and commercial systems. We declare our ability to maintain our flag on both land and sea against all powers which dare come against us without the aid or co-operation of any other nation on earth.

MIXED.

The political situation in Kansas is not greatly cleared by the action of the State Conventions. True, the loyalty of the Democratic party to its ally, the People's party, has been emphatically affirmed. But both the Republican and People's parties have tried to eliminate the prohibition issue from politics, with what success remains to be seen. The method chosen by the Republicans is to ignore the question entirely. This plan is not satisfactory to those who view with apprehension the corruption of the metropolitan police system and the growth and influence of the "joint" interest under the policies of the last several years. The Populist convention undertook to eliminate the entire temperance question from politics by demanding the immediate suspension of the metropolitan police law. It is not often that a law can be immediately repealed or suspended in obedience to the mandate of a political convention, but the law which has been so scandalously perverted by mal-administration was so constructed that it could be suspended by executive proclamation. Such proclamation has been issued for the suspension of the law on and after July 1. The Populist convention adopted some resolutions which cannot be carried out under the provisions of the constitution of Kansas as it now is. The convention followed these with a demand for a constitutional convention. While the temperance people of the State are well pleased with the abolition of the metropolitan police system, they are averse to a constitutional convention on account of the necessity it brings of a resubmission of the prohibitory provision of the organic law of the State. Not in many years have so many electors expressed uncertainty as to how they will vote. "Old liners" who "never scratched a ticket" are debating with their friends and themselves the propriety of supporting the Prohibition nominees. What will be the ultimate action of the great numbers of ardent prohibitionists is a question of the efficiency of the organization of the campaign of the Prohibition party.

WEEKLY WEATHER-CROP BULLETIN.

Weekly Weather-Crop Bulletin of the Kansas Weather Service, for week ending June 20, 1898, prepared by T. B. Jennings, Section Director:

GENERAL CONDITIONS.

A warm, growing week. Heavy rains through the southern and eastern counties, lighter rains in the northern and western.

RESULTS.

EASTERN DIVISION.

Wheat is ripening as far north as the Kaw river, while harvest is in progress in the southern counties and north into Greenwood and Woodson. Rust has injured wheat to some extent. Corn is growing rapidly, though generally quite weedy; it is tasseling in Chautauqua. Clover and alfalfa having begun in the central counties, though interfered with by the frequent rains. Flax promises an unusually good crop.

Allen county.—Wheat ready to cut, and a large crop; oats fair and nearly ripe; raspberries ripe and abundant; corn growing rapidly but weedy; flax bolting out with a good prospect.

Anderson.—Favorable week for corn but impossible to kill weeds; unfavorable for haying; clover and alfalfa should be in stack; wheat ready to harvest; fruit crop very poor; pastures never better.

Atchison.—Ground too wet to work; much corn yet to plant and replant; some wheat dying from too much water; oats looking fair; fruit falling; cherries rotting on trees; berries promise a fair crop.

Bourbon.—Corn growing rapidly; grass is very fine; chinch bugs were checked by the rains.

Chase.—Wheat beginning to ripen, and promises well; weeds and excessive rains keeping corn back; fruit good; alfalfa cutting progressing slowly, much hay damaged by rain.

Chautauqua.—Wet for harvesting, but good progress made; corn tasseling; blackberries in market; oats and grass tall.

Cherokee.—Too wet to harvest; corn very weedy but growing rapidly; hay, a heavy crop.

Coffey.—Wheat is damaging in fields; ground too soft to run machines; later crops growing well; early harvest blackberries beginning to ripen; currants ripe.

Crawford.—Corn on low ground yellow from too much water, and much of it very

south part; wheat nearly ready to cut, rust not hurting it much.

Shawnee.—Wheat ripening in southern part, being damaged by rust and worms in eastern and by chinch bugs in northeastern parts; oats doing well; corn, a good stand and growing well, and is being cultivated in many fields; clover and alfalfa ready to cut; apples dropping badly.

Wilson.—Harvest begun; wheat and oats injured by rust; alfalfa haying begun, a good crop; grass very good; blackberries and cherries abundant in the markets.

Woodson.—Corn a good color, growing rapidly and being cultivated, some fields being laid by, in others the corn is just coming up; wheat harvest begun in the river bottoms, yield good though some damage by rust; flax looks very fine; prairie grass growing tall; cattle doing well.

Wyandotte.—Wet week; corn growing rapidly but very weedy; oats, a fine prospect; wheat nearly ready to cut, some rust but filling nicely; heavy rain of 15th damaged corn and potatoes in bottoms; apples have nearly all dropped off.

MIDDLE DIVISION.

Corn has made good progress in all parts of the division, but the weather has prevented cultivation being general; in Summer it has been cultivated for the last time. Harvest has begun in the southern counties, but is being retarded by rains; harvest will probably begin this week in the central counties. Wheat has been damaged some by rust in the eastern counties, while in the western it has not developed sufficiently to cause any apprehension. Alfalfa has suffered some by rains after it was cut. Oats have improved and give promise of a fair crop. Early potatoes are ripe and a good crop.

Barber.—Ground too wet for cultivating; wheat showing rust in a few localities; cattle doing well.

Barton.—Wheat ripening slowly, rain, heavy dews and hot weather rusting the blades some; barley harvest will begin this week; second cultivation of corn begun; hay will give a large crop.

Butler.—Rye and some wheat will be cut this week, wheat harvest becoming general late in the month; fair progress in corn cultivation, though interfered with by local showers; much alfalfa cut for hay spoiled by rain; oats beginning to ripen, hurt somewhat by rust.

Cloud.—Wheat in fine condition, harvest will begin about July 1; corn in very good

Stafford.—Wet for farming; corn growing rapidly, but is weedy; wheat is all right. Summer.—Corn growing rapidly and has generally been laid by; harvest beginning.

Washington.—Good growing week; rye nearly ready to harvest; wheat and oats damaged some by rust, wheat ripening; corn doing well but weedy; early cherries ripe, but falling badly; no late cherries.

WESTERN DIVISION.

A fine growing week, and much work was accomplished in the fields, though the ground is still too wet to work in some of the counties. In general wheat is in fine condition, and is now heading in the northern counties; rust has appeared on the blades of some wheat, but not sufficiently to cause serious apprehension. Corn has greatly improved and is being worked in most of the counties. Oats, barley and rye are in fine condition. Range grass is in excellent condition. Alfalfa cutting is in progress in many counties and is through in some.

Clark.—Too wet to plant; everything is growing rapidly.

Ford.—Wheat continues fine, harvest will begin in about two weeks; oats and barley are in fine condition; corn is backward; much upland prairie grass will be cut for hay.

Grant.—Ground too wet to work; crops growing nicely.

Gray.—Wheat nearly all headed; barley and wheat never gave finer promise; first crop of alfalfa is being stacked and is in excellent condition.

Hamilton.—Warm week, and all crops growing rapidly.

Kearny.—Much field work accomplished; alfalfa haying progressing rapidly; early potatoes all gathered; wool clip being marketed; a favorable week for all crops.

Morton.—Rainy week; grass is growing very rapidly; some fields of wheat very fine, others will not be harvested.

Ness.—Growing week, and crops look fine; wheat has rusted somewhat; small grain damaged some by hail; too wet to plow corn; barley falling; range grass is now finer than since the settlement of the county, and stock are fat.

Scott.—Hot and sultry; crops doing finely except blade rust on some wheat, but not sufficient to do any damage; grain ripening very slowly.

Sherman.—Warmer, with more sunshine; all crops growing rapidly; especially good corn weather; corn being worked; alfalfa ready to cut.

Thomas.—Corn has improved greatly and is being cultivated; wheat rusting badly; hail damaged crops on 15th; oats and barley are fine, and heading; alfalfa cutting begun; potatoes doing finely.

Trego.—Good growing week; corn being cultivated; wheat heading; oats and barley are in good condition; most forage crops are now planted.

Wallace.—Fine growing week; about through cutting the first crop of alfalfa; wheat heading finely; oats, barley, rye and range grass are fine; corn weedy.

POSTAL SAVINGS BANKS.

The United States Senate Postoffice committee has reported favorably on a bill to establish a postal savings bank system. The measure is a consolidation of the best features of the bills introduced by Senators Mason, Kyle, Butler, Cockrell and Chandler, together with the special reports of American consuls on the postal savings banks. Offices are to be established at all money order offices and afterward extended to all postoffices. Any person, including minors and married women, may open accounts, the first deposit to be at least \$1. Subsequent deposits of 10 cents or multiples thereof will be received, not to exceed \$200 in one month.

Specially prepared adhesive "postal savings stamps" are to be issued of 1, 4, 5 and 10-cent denominations, affixed to postal savings cards, which are to be received as deposits. Two per cent. interest is to be allowed on deposits not in excess of \$500 in any one year, or \$1,000 in the aggregate.

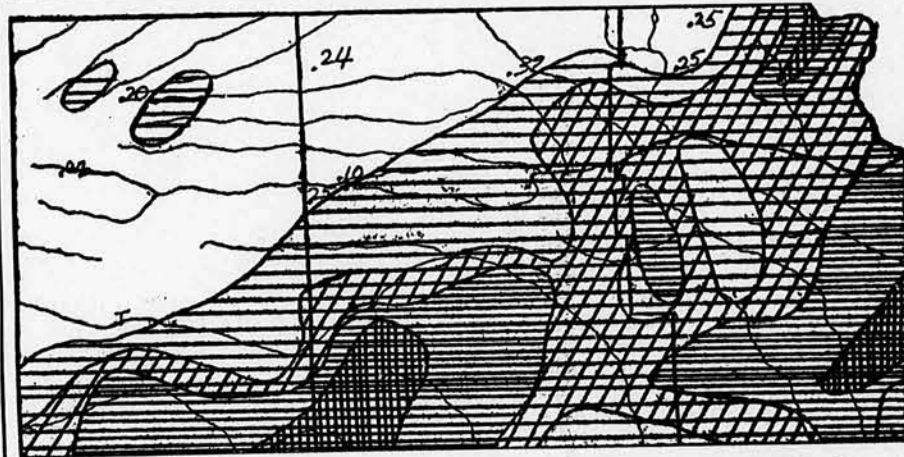
The surplus of postal savings bank funds is to be invested in United States or State bonds or in banks, or may be turned into the treasury when conditions demand. After a depositor has had at least \$10 standing to his credit for three months, he may exchange it for United States postal savings bonds of an equal amount, in denominations of \$10, \$50 or \$100.

These bonds are to bear interest of 2 2-5 per cent., payable in lawful money on or before twenty years, at the option of the government or upon demand of the holder after six month's notice. The Postmaster General and Secretary of the Treasury are to make the necessary regulations to carry the system into effect, and the office of Fifth Assistant Postmaster General is created for jurisdiction over it.

Exports of wheat and wheat flour continue large. For the week ending June 9 they were the equivalent of 4,731,000 bushels of wheat.

New Train Service to Buffalo.

Nickel Plate road, train No. 6, from the Van Buren street passenger station, Chicago (on the Loop), 2:55 p. m. daily, with Buffalo sleeper, arriving in that city at 7:40 the following morning. Through New York sleeper on same train, via Lackawanna road, Buffalo to New York, arriving early next evening. Three through trains daily, at convenient hours, to Ft. Wayne, Cleveland, Erie, Buffalo, New York and Boston. Rates lower than via other lines. City ticket offices, 111 Adams street and Auditorium Annex. Telephone, Main 3389.



ACTUAL RAINFALL FOR WEEK ENDING JUNE 18, 1898.

weedy; no plowing during the week; wheat ready to cut; oats turning; timothy in bloom and a good crop; potatoes fine but about to rot.

Doniphan.—Heavy rains in the extreme north; wheat greatly damaged by red rust; corn very weedy and uneven, but growing rapidly; oats all right in extreme north, rank and rather poor farther south, where they are rusted; apples and plums are still falling.

Douglas.—Wheat is changing color, many of the heads are empty, hurt by rust; corn doing fairly well except on low lands; cherries and strawberries abundant.

Elk.—But little cultivating this week; wheat harvest well under way, but ground too wet to do much.

Franklin.—Corn is about all planted; ground too wet for work; some wheat, damaged by the wet weather, is being cradled.

Greenwood.—Corn is growing rapidly; wheat harvest begun in southern part.

Jefferson.—Poor week for corn, wheat and oats; wheat ready to harvest but ground too soft.

Johnson.—Wheat in southwest part badly damaged by wet weather, and corn generally a poor stand; in central part wheat on low lands scalded and rusted, but corn and oats are doing well; blue grass, clover and timothy looking very well; but little fruit except peaches.

Labette.—Harvest begun where possible to work, but ground generally too wet for machines; corn growing rapidly; chinch bugs and black rust ruining wheat.

Leavenworth.—Wheat falling well, some rust; oats good; corn growing slowly; some new potatoes; apples about a failure; some peaches; fair crop of small fruits.

Lyon.—Much wheat spoiled by rust; corn needs hot weather to make it grow.

Marshall.—Corn being cultivated and weeds killed; oats and wheat doing very well, though wheat is rusting some; everything growing.

Montgomery.—A good growing week; too wet for harvesting in many parts of county and the wheat is falling from effects of wet weather and rust; corn growing, but drier weather is needed to clean the grass and weeds out of it.

Morris.—Corn growing slowly in northern part, more rapidly southern, but too wet to kill weeds; wheat and oats rusting; potatoes promise a good crop.

Pottawatomie.—Favorable for haying and plowing corn, corn a good stand but late; oats looking well; apples falling badly; many reports of wheat blighting.

Riley.—A good week for growing crops, ending with heavy rain, and some hail in

condition and growing rapidly; strawberries ruined by rain.

Dickinson.—Fine growing week; wheat not damaged to any extent, harvest will begin next week; too wet to cultivate corn; potatoes large and heavy yield.

Edwards.—Corn is growing very rapidly; early potatoes matured.

Harper.—Crops in good condition; harvest begun, but is retarded by wet weather; pastures excellent; some wheat damaged by severe wind and rain storm of 14-15; fruit good.

Harvey.—Too wet to cultivate; corn doing finely; wheat cutting begins this week.

Kingman.—Very wet for harvest, binders have started on the uplands.

McPherson.—A fine week for corn, except in extreme east part of county where much corn was injured by heavy winds and rains and wheat on low lands badly damaged; over the rest of the county the corn is growing rapidly and is being well worked, and wheat has filled finely with very heavy straw; harvest begins in central portion this week.

Marion.—The corn crop has improved greatly; wheat and oats are in fine condition; harvest will begin in a week.

Ottawa.—Corn and fodder crops growing well and in fine condition; wheat ready to harvest next week; oats a fair crop; potatoes the best for years.

Phillips.—Wheat, oats and rye doing finely; most of the corn is in fine condition; alfalfa cutting in progress.

Reno.—Warm; too wet for cultivating corn, and in many fields the weeds have full possession; wheat ripening rapidly, somewhat damaged by rust but will make a good crop; harvest begins this week if ground gets dry enough; raspberries beginning to ripen; early cherries about gone.

Republic.—Warm, growing week; corn growing rapidly; wheat, though rusted some, is ripening rapidly.

Rush.—Very favorable for all crops; harvest will begin in about ten days, prospects are for a good crop; oats are fine; early potatoes good.

Russell.—Good week for work and much corn has been cultivated, but many fields are yet in bad condition; wheat somewhat rusted, but little damage apprehended; some wheat shows signs of ripening.

Saline.—Corn is growing very rapidly; wheat is in bad condition in the northern and eastern townships owing to rust, in the central townships it is in good condition and is ripening; some cut alfalfa ruined by rain.

Sedgwick.—Haying and harvesting begun, stopped by rain Saturday.

Horticulture.

LOOKING FORWARD

Some months ago Senator Edwin Taylor, of Edwardsville, Kas., read the following paper at a meeting of the Missouri Valley Horticultural Society. Senator Taylor is competent to give advice on this subject, for he has been successful in horticulture and knows whereof he speaks. After having read the paper one will be able to explain the failures of many persons in horticulture. The paper on "Looking Forward" follows:

"Our nearest neighbors in Michigan when I was a boy, were the — family. Joel, the youngest son, nearly grown when I was perhaps 5 or 6 years old, used to salute me, greatly to my mystification, with: 'Well, Eddy, how goes the battle?' For my part, I was unaware of any state of hostilities which justified his implication, and upon inquiry I found that he referred to something he called the 'battle of life.' This figure of speech I carried to my father for elucidation. Father explained to me the struggle that engages every man from the time he crosses the boundary line between youth and manhood to such good purpose that I straightway formed a vivid and fairly correct idea of the warfare, made up partly of contest and partly of hustle, in which his generation was engaged and toward which my generation was drifting. Then I began to look forward to the coming 'battle' and longed for the signal to 'go in.' Now that my generation has also had its turn in the great engagement, more than half of 'our' poor fellows lying silent and indifferent to both friend and foe, the remainder, their hard fighting done, fit only for garrison duty, I have at last abundant opportunity for looking backward upon what they have accomplished. Satisfactory looking backward depends largely upon previous judicious looking forward.

"To give my subject a bearing in harmony with the spirit of the occasion, I may say that whoever undertakes horticulture seriously, as a vocation, needs to begin his preparation for it by a long look forward. It should begin with the man himself; and should it show in him a rooted aversion to physical exercise, a predilection for morning naps, an abhorrence for tan, the man should awake from his dream and grab a counter—preferably a pie counter, but any old counter will do. But supposing him to find himself in possession of an ego suited to the gardener's calling, then let him turn his searchlight upon his distance from market, the size of the market, his means of reaching it, his qualifications as a merchant, the nature of his soil and the crop to which it is suited, and the capital at his command.

"The failures among our fellow craftsmen arise far less from ignorance of the far-off and the hidden things pertaining to their art than from neglect of its plain, simple requirements. They, too often, won't 'wash in the Jordan,' but look forward to 'great things' beyond their reach. Many an orchard has been eaten up by rabbits while its owner was figuring out whether he would have his prospective crops of fruit sold on commission or himself go to New York to sell them. I have read in a book that art is a jealous mistress, but I doubt if she outdoes horticulture in that regard. The man who goes into horticulture expecting to win out may rely upon it that they only are solid with Pomona who allow themselves no glances for attractions on the side. The gardener may depend that every moment of time and every dollar of capital taken out of his business and put into side issues will be a source of anxiety and loss. The men who drive away from the Kansas City market square, day by day, with that accession to the bank account which makes some of them people of (bank) note among us, are taking no 'flyers' at the stock exchange, they carry no futures on grain or pork, are holding no options on real estate, and are agents for no patent rights. Every endeavor of theirs in a business way is directed to the improvement of their methods or the enlargement of their operations. Several years ago an acquaintance of mine laid before me a scheme for opening up a large grain, fruit and stock farm that he said he was going into. I was too polite to tell him the goblins would catch him for mixing things up in that way, but they got him, all right. He is a clerk in a hotel now.

"Looking forward is one of the essential elements of generalship; and although horticulture is one of the most pacific pursuits, yet generalship counts for more than many people suppose.

There are enemies of every flower and fruit to be circumvented and destroyed by all the arts of the gardener's warfare; there are campaigns to be planned that involve the disposition of the 'squares' of the culturist—his squares of land, not squares of troops. In fact, all the operations of the garden, whether great or trivial, properly come within the scope of generalship, of systematic adjustment and control, of looking forward, which prevents confusion in action. Whether the forces under the gardener's command run into the size of a regiment, like Mr. Hale's in peach time, or are limited to a small boy and a mule, the maximum of accomplishment can only be exceeded in either case by looking forward and looking out.

"It is common report that in the late war between the Greeks and the Turks, the Greeks found their supply service totally inadequate and were defeated, in part, because they ran out of food and ammunition. In the campaign against nature, what thousands of horticulturists start out, every season, like the Greeks, with big anticipations and plans of magnitude, and are driven from one position another by the militant weeds and 'pusley,' and fungi and aphides, all because the attempt is out of proportion to the strength.

"Looking forward, however, without figuring as you look and making preparation even in excess of your figures, is disastrous. It is so much easier to look and dream than to curb the imagination and give free course to the exercise of the muscles, that quite frequently gardeners and fruit-growers (outside of this society, of course) are more in evidence for what they think they are going to do than for what they really do. It is a funny thing with such people, none of whom, as I remarked, are members of this society, that in the spring their talk is of what they are 'going to do,' while in the fall it is about what they 'used to do.' Sometimes it seems as though the two great classes of society are the 'usetos' and the 'gointos.'

"I said it was not prudent to look forward in horticulture without figuring. Every detail of crop-growing and harvesting should be set down, with at least 25 per cent. addition for friction and loss.

"The gardener cannot ward off a drought, but he can enormously neutralize its damage by anticipatory cultivation, fertilizer and humus. He cannot prevent overmuch rain, but he can by forethought so arrange his plowing and planting as to avert much of the damage his improvident neighbor suffers from soil-washing; and the same wet spell which fills the 'three-handed' gardener (the 'third' hand being a little behind hand) with dismay as the crab grass takes his strawberry bed, the fore-handed man regards with equanimity, for his strawberries are coming on by leaps and bounds in the growing weather. Isaac Morrill told me it cost him \$13 per acre, one rainy year, to hoe his strawberries; and when it was all over the plants were so distressed by the operation that \$13 per acre would have been a fancy price for all there was left. I have known Asa Chandler to hoe his strawberries over nine times in a single season and send them into winter with more than nine times the prospective outcome stored up in them than Isaac Morrill had in his. It was the difference between good generalship and bad.

"There is so much more to our profession of horticulturist than most people suppose, or that we ourselves, frequently, are aware of, that one regrets the short-sighted and grudging policy toward our calling that so many of us pursue. Our profession is like the other learned professions, in this: that there is room at the top. At the top is not only reward, but pleasure. Looking backward, the gardener should also look forward."

Keeping Apples.

At a meeting of the Missouri Valley Horticultural Society, Mr. Davidson, of Lee's Summit, gave a description of his method of keeping apples.

His cellar is 80 by 40 and about 8 feet deep, built of stone. He has a chute running into the cellar to run the apples down. He then sets the barrels (without heads) one on the other, three high. The cellar has a large double door in the end and regular temperature is maintained by opening and closing this. He opens at night to admit cool air and closes in the day time, and by this process a comparatively uniform temperature is maintained. The upper story cannot be kept as cool as the lower, and in this he keeps the apples that are to be sold before the holidays. In building such a structure he advises the use

of stone in the lower part, but wood for the upper, as it can be kept cooler.

Mr. Goodman reported that in his cellar he could keep from 3,000 to 4,000 bushels of apples. He first sprinkled with a solution of copperas, then piled the apples in bins as high as possible. Upon being asked for his opinion on ventilation, he said that they did not want too much; that it was his experience that the apples exposed to the air rotted worse than those in the middle. Apples left in piles have a gray coating formed on the outside, and if they once reach this stage they are comparatively free from rot. This coating is formed in from six weeks to two months, and most of the rotting is done during this period. The cellars should be sprayed or sprinkled frequently to stop all fungus growth. Mr. Goodman also advocated building storage houses over springs, as the flow of water will keep the house cool, and also give sufficient ventilation. He quoted cases where good results were obtained in this manner.

Another method, where ice is kept, is to have the apples stored in a cellar under the ice house, the floor above being tight to prevent leakage. This is approximately the method for cold storage adopted by one of the cold storage houses in Kansas City, in which apples have been kept for three years with remarkably good results.

'Bugs' and Their Friends, the Weeds.

Editor Kansas Farmer:—Weeds are bad enough in themselves, but when a weed gives "aid and comfort" to a noxious insect then it certainly is a nuisance. But this is just what many of our worst weeds do. These weeds must be fought not simply because they block up the corn row or overrun the garden and lot, but also because they furnish food for the bugs and worms that but for the presence of their friends must surely starve during the period when their food plant is not growing and they themselves are in an active state.

Among some of these weeds may be mentioned the bull nettle (*Solanum rostratum*), which grows all over the State. It is the natural food-plant of the Colorado potato beetle (*Doryphora 10-lineata*); and when this beetle can find no potatoes to feed on it falls back on its old ally and lives over the summer on it, and is on the ground ready for business when the potatoes come up next year.

Next to the Colorado beetle, the potato stalk weevil (*Trichobaris trinitata*) is the worst insect enemy of the Kansas potato-grower. It weakens the plant greatly by boring in the stems where it is not noticed, the adult beetle usually remaining in the stem over winter. The beetle does not confine its attacks to the potato, but lives in many common weeds that are members of the potato family, as the different kinds of wild ground cherries (*Physalis*), jimson weeds (*Datura*), nightshade and nettles (*Solanum*). In these plants the insect thrives and passes the winter in better condition than those that live over in the potato stems, and without affecting the vitality of the weeds. The simplest remedy is to gather up all the potato vines as soon as the potatoes are grown and destroy them. Later on gather and burn every weed that the weevil lives in that would be near the next year's potato field. Thus the danger of losing the potato crop may be avoided by a little precaution taken on days when nothing else can be done. The weeds must come up from an inch or two below ground and must be burned. The weevil itself is rarely seen, as it spends little time out of the stems, and is only about an eighth of an inch in length, light gray in color with three small black spots at base of its wing covers.

The garden web worm (*Loxostege similalis*) is an insect that in the past has won notoriety through its omnivorous propensities. It eats anything from corn to cabbage, also feeding freely on most of our common weeds. I have seen the small, black spotted, green worms feeding on lamb's quarter (*Chenopodium album*), pig weed (*Amarantus retroflexus*) and sunflower (*Helianthus annuus*), all close together, and thriving alike on all, waiting only to gain in numbers for a late summer invasion of the alfalfa fields of the State. Since the introduction of alfalfa this worm has shown a decided preference for that kind of forage crops. Though it may recognize a good thing when it sees it, there is no use playing the hog about it. I have seen hundreds of acres of alfalfa stripped almost bare. They do their work quickly—one week a green field; the next, the bare stems and hordes of worms, and in another week or two the hordes of worms reappearing as clouds of little moths that



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fly up in front of one as he passes through the field; but their numbers seem to be their own ruin, and it is several years before they are bad again.

Let these three serve as examples of the many "bugs" that live on weeds, but only to come in stronger force upon the fields and gardens. Keep down the weeds for their own sake and thus "kill two birds with one stone." You may not be able to check the insects by keeping down the weeds, but you can't check the insects unless you keep down the weeds. N.

Peach Leaf Curl and Plum Pockets.

J. C. Arthur, botanist of Purdue University Agricultural Experiment Station, reports that all over the State of Indiana the peach trees are this season quite generally injured by abnormal development of the leaves. They become thickened, much puffed and blistered, and with a whitish bloom on the surface of the affected portions. These distorted leaves will finally drop off, and often the fruit, on account of the weakened condition of the tree, drops also. Healthy leaves after a time replace the diseased ones, and in the latter part of the season the trees regain a normal appearance.

This disease is known as "leaf curl," and is caused by a fungus that penetrates the tissues, and on the surface forms spores so abundantly as to make the leaf look pale. Most of the injury during any season, however, does not come from the spread of the spores, but from the part of the fungus that lives over the summer and winter in the ends of the twigs and buds. Although the trees appear to quickly recover from an attack of "curl," yet they really carry the disease in their tissues until next year, when it breaks out again in the young leaves. Some seasons are more favorable to its development than others, but a tree which once shows the disease is likely to have more or less "curl" every year.

No effective remedy is known. Spraying with Bordeaux mixture as soon as the disease shows checks the distribution by spores somewhat, and cutting off the twigs and limbs bearing the curled leaves gets rid of some of the perennial part of the fungus; but the most thorough attention only partially checks the disease, and it is doubtful if the results pay for the effort.

Plum trees are affected with diseases produced by very similar fungi. The spring growth, sometimes the leaves, but more usually the shoots, are puffed and whitened, and greatly distorted, the young stems occasionally becoming a half inch to an inch thick, soft and hollow. In other cases the fruit is similarly affected. The plums are paler, more elongated, soft and hollow, without a trace of a pit. These are often called "plum pockets," and sometimes "bladder plums."

Like the peach curl, this disease winters over in the ends of the twigs, and a tree once attacked will be likely to show the disease from year to year. But as a rule only a few branches of a plum tree are attacked, and cutting away these branches may rid the tree of the disease. No other remedies are known.

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In the Dairy.

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

STEER VS. COW.

The subject of source, character and cost of the human food supply is one of universal interest. The business of the farmer is, in large part, that of producing food for the race. In this and other countries of advanced civilization it takes more than half of the average family income, which is said to be about \$500 per year, to buy the food supply. Out of the remainder of the income must come cost of preparation of food for the table and all other living expenses. The question, then, where to look for the largest supply of the best and cheapest food is one of great individual and national interest, and the farmer—the producer of the food—has an added interest from the fact that all of his living expenses and possible accumulations are involved in it.

The foods produced by the farmer for human consumption may be divided into two classes, vegetable and animal. The former comprises the grains, fruits and vegetables, like potatoes and turnips; the latter the meat, milk and eggs. Vegetable foods are by far the more abundant and cheaper, but as a rule do not fully meet the demands for the human system for the nitrogenous elements of nutrition. They are supplemented, therefore, with animal foods to a greater or less extent. It is the comparatively great cost of this latter class that gives most concern to the housekeeper who must expend money wisely.

The farming of the States reached most largely by the Rural World is mainly of a "mixed" character; that is, both vegetable and animal products are marketed, but there is a strong leaning towards animal husbandry as being generally more profitable and better for the land. Prices for cattle and meats have been discouraging to stock raisers for a number of years until recently, and increased attention has been given to dairy farming. There is now a revival of the cattle interest, and it is thought by some that this will result in a standstill or decline in the dairy interest. Consider the profit, direct and indirect, which it affords. Let us, then, look into the question of beef vs. dairy farming and see if we can determine which offers the more profit.

Taking a 1,200-pound two-year-old steer, which is perhaps above the general average, yet by no means above accomplishment, let us determine as nearly as possible his cost and the profit yielded, if sold at that point, for the second year's feeding. If the animal weighed 700 pounds at 1 year old he would cost the feeder at that time \$25. Five hundred pounds of gain during the year will cost at least \$20, making \$45 as the total cost at 1,200 pounds weight. If sold for 5 cents a pound, which would be the top price, he would bring \$60, or \$15 more than total cost.

Now let us take a dairy cow and see what she will yield in a year. If she is what she ought to be, if kept in the dairy, she will give 6,000 pounds of milk in a year, from which could be made 250 pounds of butter. If the milk is taken to a creamery it will bring an average of 75 cents per 100 pounds, or \$45, to which can be added \$10 for value of calf and skim-milk returned, making a total of \$55 for the yearly returns from the cow. If the milk is sold for city consumption it will bring an average of \$1 per 100 pounds, making the yearly returns \$60, to which might be added \$5 for value of calf, although this item is of doubtful value, because for lack of skim-milk for feeding the calf. If butter is made the 250 pounds would bring, at 20 cents a pound, \$50, and to this can be added \$20 for value of calf and skim-milk, presuming that a farm separator is used and the skim-milk is thereby had warm and sweet for feeding. Charging the cow \$30 for her keep for the year, \$10 more than we do the steer, the net returns from the creamery cow will be \$25, from the city milk cow \$30, and from the butter cow \$40.

Let us now inquire into the merits of the two animals as food producers from the standpoint of the consumer so far as concerns his pocket.

In Farmers' Bulletin No. 23, on Nutritive Value and Costs of Foods, by W. O. Atwater, issued by the United States Department of Agriculture, are tables showing the nutritive value of different food substances, and how much nutrition in each 25 cents will buy at prevailing prices. The different nutritive elements of a food substance are all reduced to a common unit of value called "calorie." Reduced to this unit of value

we find by one of the tables that 25 cents will buy in beef at 10 cents a pound 2,425 calories, or units of nutrition, and the same amount of money will buy in milk 2,705 units of nutrition, with the added value in favor of milk that it is a much more nearly perfect human food than is meat, and can be used raw, without cost for cooking.

Now let us consider the comparative food-producing capacity of the steer and cow, or, in other words, which has the greater power to produce food for the support of the human race.

Taking 500 pounds of beef as the yearly product of the steer and 6,000 pounds of milk as that of the cow, we will reduce these to the same unit of value, the "calorie." The 500 pounds of live weight will not make more than 300 pounds of marketable meat, probably less. According to the bulletins referred to, a pound of beef contains 970 nutritive units, or a total of 291,000 units in the 300 pounds of beef. Milk has a nutritive value of 325 units to the pound—6,000 pounds has, then, 1,950,000 nutritive units, or more than six times as much food value as has the yearly product of the steer.

Summing up, it appears, if our calculations are correct, that considering simply the product of the steer and cow, the latter yields the farmer a greater profit, the consumer a better and cheaper food, and furnishes food for a much larger number of people than does the steer.—Levi Chubbuck, in Colman's Rural World.

The Relations of Consumers to Producers of Milk.

Modern investigation has shown without question that milk is a substance which is easily contaminated, and is not infrequently the medium through which much dreaded diseases are transmitted to the humans. Typhoid fever, consumption, diphtheria and scarlet fever are all germ diseases, and milk is a substance in which these germs will thrive. The wash water from a house where typhoid exists may drain through the soil into the well and contaminate it. This disease-affected water, if used to rinse milk pans or cans, or to set cans into cool milk, may be the means of transmitting the disease to the milk and thence to the human subject.

All intelligent physicians and dairymen in consequence recognize the necessity of great cleanliness about the cow stable and dairy, and having sanitary conditions of a high order. With these features enforced, with healthy cows, wholesome food and proper milk delivery, one should be able to supply the market with pure milk.

The enforcement of good sanitary conditions about cows supplying city and town consumers of milk is mainly within the control of boards of health. No persons, however, should have a greater interest in this matter than the consumers themselves. If the patrons of persons supplying consumers with milk would visit the farms and stables from which their milk is derived they would be able to ascertain reasonably well if the sanitary conditions are favorable or not to a healthy or wholesome milk. Persons giving milk to young children certainly should examine into the source of it. If this were done by more parents the mortality each summer among young children would be far less.

Every progressive, intelligent, fair-minded milk producer will welcome an inspection of his cows, stables and dairy by his patrons. The man who does not is not a safe one to buy milk from.

Consumers should put a premium on the character of the milk supplied them, and should in every way possible encourage the efforts of the dairyman who endeavors to place the best article on the market.

Within very recent years some dairymen have begun to sell milk which has been handled with extra care, to insure a high-grade purity and wholesomeness. This is sometimes called "certified milk," due to the fact that the producer certifies as to the feed and character of his cows, and the handling of the milk. Others "pasteurize" or heat to a certain temperature their milk or cream, to destroy or injure disease germs, if any perchance occur in it. At one fine dairy in Indiana all the milk is sprayed through sterilized air and then made very cold in an air-tight chamber, after which it is bottled.

These improved methods of preparation are bound to become more common each year, from the very fact, if for no other, that they receive the indorsement of the intelligent physician. Our consumers should encourage this production. Progressive dairymen selling pure, high-grade milk should be encouraged. The consumers should show their appreci-

ation of their efforts. One, however, cannot overestimate the importance of consumers familiarizing themselves with the source of their milk and its surroundings, and insisting that conditions be of a high sanitary character.—C. S. Plumb, Director Purdue University Experiment Station.

Snap Shots.

Regularity in temperature.

Both feed and breed are important.

Have the sire fully better than the dam.

Irregular milking does considerable harm.

It is an item to know that your thermometer is correct.

It is poor economy to keep the cows in a pasture without shade.

Corn and oats ground with wheat bran make a good ration for the milch cows.

It is not so much the amount of milk the butter-maker wants as it is the quality.

With many farmers it pays to take the hard work of butter-making to the factory.

The best way of securing a uniform high grade of cows is by raising the best heifer calves.

The feeding should always be such that there will be no shrinkage in the milk only from natural causes.

Look for individual excellence as well as a long pedigree in selecting an animal to improve the dairy herd.

The Jersey has been bred especially to develop the dairy characteristics, so that a good cow is the rule, not the exception.

Study the feed questions. The majority of farmers do not understand how to feed for milk as fully as they should.

A cow that is not a good breeder should never be found on a farm unless she is very much above the average for milk and butter.

One advantage with a good dairy cow is that she will turn extra feed into milk while a poor one will almost invariably convert it into fat.

I hear some say: "But my milk will not produce near five pounds of butter to the hundred." Perhaps you do not know how much it could be made to produce, for you may not be getting the butter all out of it.

Whether your method be by cold deep-setting of the milk or extraction by the hand separator, keep the whole process, including the butter making, entirely apart from the kitchen. If you don't your butter may not bring the highest market price.

Letter From a Preacher's Wife.

Bossburg, Stevens county, Washington.
Dr. D. M. Bye, Indianapolis, Ind.:

Dear Doctor—I have delayed some time in sending in my testimonial, as I have been waiting to see how the place was going to heal up: so I am now ready to recommend to the world your wonderful Oil treatment.

Three years ago I noticed a small lump coming in my right breast, and I called in our family doctor, who informed me that it was a tumorous cancer coming, so I began doctoring at once, but all the doctors failed to help me, and the best doctors in this country gave me up to die, when I heard of Dr. D. M. Bye's wonderful Oil treatment, and of him being a man who had great faith in God, so I resolved to try him. He has taken the cancer all out, and it was so large that it took the whole breast off, but, praise God, the cancer is gone and the place is healed up nicely. Suffering ones, do not be afraid to try Dr. D. M. Bye's wonderful Oil treatment; and any one wishing further information regarding this case can get it by writing to me.

MRS. C. E. BALTEZORE.

May 15, 1897.

P. S.—And the minister adds the following:

My Dear Brother—We will send a big recommendation for you throughout the country, and I shall go to preaching again, and I will recommend you from the pulpit. So, may God bless your good labor and the loving arms of Jesus ever embrace you, is our prayer.

Your brother in Christ,

REV. M. L. BALTEZORE.

"ALPHA-DE LAVAL" CREAM SEPARATORS.



De Laval Alpha "Baby" Cream Separators were first and have ever been kept best and cheapest. They are guaranteed superior to all imitations and infringements. Endorsed by all authorities. More than 125,000 in use. Sales ten to one of all others combined. All styles and sizes—\$50. to \$225.—Save \$5. to \$10. per cow per year over any setting system, and \$3. to \$5. per cow per year over any imitating separator. New and improved machines for 1898. Send for new Catalogue containing a fund of up-to-date dairy information.

THE DE LAVAL SEPARATOR CO.

RANDOLPH & CANAL STS., CHICAGO. 74 CORTLANDT STREET, NEW YORK.

Patronize the Creamery.

During the hot weather, if you have not good conveniences to handle milk properly, send it to the nearest creamery; the price paid for butter fat during the summer months is higher than the grocery will pay for butter, besides getting the skim-milk back. This is not all; it saves the housewife much hard work. Good calves and pigs can be raised for separator skim-milk if fed understandingly.

If you have any disease due to impure or impoverished blood, like scrofula, salt rheum, dyspepsia, or catarrh, you should take Hood's Sarsaparilla and be promptly cured.

Hood's Pills are easy to take, easy to operate. Cure indigestion, biliousness. 25 cents.



A
Child
Can
Run It.

"My boy, aged seven years, runs the Mikado"

Empire Cream Separator

with ease," writes C. L. Fairbanks, Springfield, Vt. Close skimming, small cost for repairs, and ease of cleaning are the qualities which commend them to all users.

All sizes for hand or power use at prices that will interest you. Agents wanted in territory where not represented. Ask for our 1898 catalogue.

U. S. BUTTER EXTRACTOR CO., Newark, N. J.

C. E. HILL & CO., Western Agts.,
KANSAS CITY, MO.

Mention Kansas Farmer.

"AMERICAN" CREAM SEPARATOR

was awarded
FIRST PREMIUM

at St. Louis Fair, 1897
as the

BEST

Farm Cream Separator.

Correspondence solicited.

FOR SALE BY

S. F. WICKER,

MADISON,
KANSAS.



The Improved U. S. Cream Separators

In thoroughness of separation take the lead.
In completeness of design and ease of operation excel all others.

Are more substantially made and are superior in all points to all others.

All Styles and Sizes. \$75.00 to \$625.00.

Agents in all dairy sections.

Send for latest illustrated catalogues.

VERMONT FARM MACHINE CO., - Bellows Falls, Vt.



The Veterinarian.

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the Kansas Farmer. Give age, color and sex of animal, stating symptoms accurately, of how long standing, and what treatment, if any, has been resorted to. All replies through this column are free. In order to receive a prompt reply, all letters for this department should give the inquirer's postoffice, should be signed with his full name, and should be addressed direct to our Veterinary Editor, Dr. Paul Fischer, Professor of Veterinary Science, Kansas State Agricultural College, Manhattan, Kas.

UNCERTAIN.—About a month ago I bought at a sale a yearling Short-horn bull. He coughed some, with offensive discharge from the nose. I called a veterinarian, who said it was a cold settled on the lungs; not contagious; ordered a drench three times a day and thought he would get well. He is falling off in flesh, coughs, discharges a dirty white from the nose, offensive smelling breath. How can I tell whether it is tuberculosis, and is there any remedy for it? P. H. Concordia, Kas.

Answer.—A careful examination would be necessary to determine just what ails your animal. If it is tuberculosis you can easily determine it by having the animal tested with tuberculin. I shall mail you a bulletin on this subject.

SCRATCHES, OR GREASE HEEL.—I have a four-year-old colt that has become suddenly lame, apparently without cause, in right front foot. His heel has become soft and feverish, and in hollow above heel there are little discharges resembling wire scratches. The lame foot and the other three are swollen and feverish at edge of hair. After standing a while he stumbles similarly to a grain-foudered horse. Has done very little work this spring. Has been on good pasture and grained twice a day. Is in good flesh and looks and apparently feels good. Been lame about three or four days. H. O. T. New Murdock, Kas.

Answer.—Your horse seems to have scratches, or grease heel, sometimes also called mud erysipelas. Clean the affected part of the skin (above the hoof) with a dry brush and then apply freely, twice a day, the following: Olive oil, 6 ounces; liquid subacetate of lead, 2 ounces; mix, and shake well before applying. See that the animal's bowels are loose; promote this condition by feeding less grain and plenty of green, succulent grass. Feed more grain when at work.

LUMPYJAW—RUPTURED OESOPHAGUS.—(a) I have a three-year-old bull that had two swellings come up in a short time on his neck, about two months ago. They had no appearance of softening. We had to cut deeply to get to the pus. The sack of pus seemed hard to cut into, like gristle. I went to a veterinarian, who told me it was not lumpy jaw. He said to fill the sacks with blue vitriol two or three times, which would eat out the sack and it would be all right. I did so, but there are hard calluses left. Is it lumpy jaw? (b) My son has a cow that has a gathering under her throat that comes up when she is on dry feed but does not bother when at pasture. Is that lumpy jaw? What can be done in both cases? J. C. D. Creswell, Kas.

Answer.—(a) The callus remaining at the points where the abscesses were will remain permanently unless removed with a knife. But they will do no harm unless the healing was imperfect; in that case a new abscess will form, which can be treated just like the old one. Possibly the tumors were due to an infection by the Ray fungus, which causes lumpy jaw, but I cannot determine that definitely. (b) This is not lumpy jaw, but a condition that can be brought about by a rupture in the oesophagus or gullet. As a result of the rupture a pocket of variable size forms; this fills up when the animal feeds on dry food, especially chopped hay or straw. Green food is less apt to remain lodged, hence the explanation for the disappearance of the swelling when the animal is on pasture. For the present the condition is not serious. It may get larger in time, may even interfere with breathing; then the animal should be slaughtered for beef, provided, of course, that it is otherwise healthy.

DIP YOUR SHEEP with Cannon's Sheep Dip (liquid and non-poisonous), easiest to use, cheapest and best made. Cures scab, kills ticks, lice, fleas and maggots. Used by the largest and best breeders. Satisfaction guaranteed. Write to the Cannon Chemical Co., St. Louis, Mo., wholesale agents, for circulars and prices.

Horse Owners! Use



Caustic Balsam

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

Some Kansas Statistics.

Forty-four of the 105 County Clerks of Kansas have forwarded to Secretary Coburn, of the State Board of Agriculture, their abstracts of agricultural statistics and population as collected by Township Assessors for the year ending March 1, 1898. All but ten of the counties which have reported are in the western half of the State. Some features of the statistics compiled, and compared with those of last year, make the following showing:

These forty-four counties, which last year contained about 42 per cent. of the total area in wheat, increase this year 475,657 acres, or nearly 34 per cent. The largest gains are 38,011 acres in Kingman county, 38,254 in Pawnee, 35,236 in Rice, and 37,254 in Stafford.

Their acreage of corn shows a falling off of 12.31 per cent., or 272,250 acres.

A decrease of 22,081 acres, or 11 per cent., is reported for oats.

The area of alfalfa is 34.41 per cent., or 24,396 acres, greater than last year. An increase of 1,545 acres is found in Chase county, 1,033 in Cloud, 3,593 in Edwards, 1,023 in Elk, 4,159 in Greenwood, 3,668 in Jewell, 2,605 in Marion, 1,866 in Mitchell, and 1,041 in Rice.

The acreage of Kaffir corn and sorghum for forage and grain in forty-three counties is for the former 46.69 per cent., or 74,120 acres, greater than one year ago, while sorghum gains only 2.68 per cent. The counties showing some of the larger increases in Kaffir corn are Anderson, with 3,727 acres; Chase, 4,857; Coffey, 15,519; Ellsworth, 3,211; Greenwood, 8,408; Marion, 3,227; Morris, 5,569; and Woodson, 4,375.

Last year these counties, which contained about 33 per cent. of all the cattle, other than milch cows, in the State, show an increase of 141,826, or 27 per cent.; the largest increases being in Clark county, with 18,122; Cloud, 8,464; Comanche, 10,246; Elk, 5,655; Ford, 5,821; Jewell, 13,138; Lincoln, 9,886; Mitchell, 9,130; Morris, 7,357; and Stafford, 4,975.

Milch cows increased 16,538, or about 11 per cent. The counties with some of the larger gains are Cloud, 740; Ford, 602; Greenwood, 1,445; Jewell, 711; Kingman, 702; Leavenworth, 840; Lincoln, 814; Mitchell, 1,929; Morris, 624; Ness, 624; Ottawa, 965; Pawnee, 765; Stafford, 1,514; and Woodson, 1,315.

There is a decrease in sheep of 15 per cent., or 10,098.

These counties, having about 25 per cent. of the total number of swine last year, show an increase of 124,216 head, or 21 per cent. The principal increases are in Decatur, with 14,053; Elk, 6,127; Jewell, 42,380; Leavenworth, 5,479; Mitchell, 15,406; Morris, 6,503; Ottawa, 5,518; Rawlins, 4,375; Rooks, 6,491; Sheridan, 3,681; and Stafford, 3,609.

The population of the same counties is 1,149 greater than one year ago.

Cheese for the Soldiers.

Editor Kansas Farmer:—Congressman J. H. Davidson, of Wisconsin, has introduced a bill in the House of Representatives providing that pure, wholesome cheese shall hereafter constitute a portion of the ration for our soldiers. Such a measure is timely and important, for cheese is one of the cheapest foods available to man. It is condensed, has no waste, requires no preparation for consumption and is peculiarly suited for nourishing soldiers in their fatiguing labors in a tropical climate.

Every person interested in dairying should work for the wider distribution and more general use of dairy products. Every farmer who reads this article is urged to write at once to his member of Congress in both houses, urging their immediate support of the Davidson bill. If our dairymen will do their duty, Congress will no doubt enact the Davidson bill into a law within the next two weeks in time to render our soldiers now in the field a genuine service.

Butter-makers as well as cheese manufacturers are interested in the meas-

ure, for every pound of milk turned into cheese leaves the market in that much better shape for butter, and aside from personal interests we are all desirous of seeing dairy products more largely consumed because of their wholesomeness, palatability and the low cost of nutriment furnished.

Congress is now debating the question of adjournment, and unless there is quick action by our people the measure may fail this session. Will not every dairyman make this a personal matter and write at least a postal card to his Representative and Senator, urging that they support the Davidson bill? "In union there is strength." Let us see how quickly the Davidson bill will become a law. W. A. HENRY, Dean Wisconsin College of Agriculture.

Orders From the President.

How does the President, as commander-in-chief of the United States army and navy, maintain communication with all the force?

It is an elaborate and complicated system, which has been worked out and perfected by experts.

Its principal branch is telegraphy, and on this all its other features depend.

On the second floor of the War department at Washington is the central station for the dispatch and receipt of official war messages.

From that station run wires which form connections with every military post and signal station on the Atlantic and Gulf coasts, and to the headquarters of army and naval commanders.

By a system of loops the instruments in the War department can be placed in communication with any part of the world that is reached by cable or telegraph line.

Nearly all messages are sent in cipher, and the men who conduct this branch of the service are among the most important and most confidential employees of the government at this time.

If the President wishes to send an order to the army he makes it known to the Secretary of War; if to the navy, then to the Secretary of the Navy.

The order is first written out in plain English, and is then handed to the cipher clerks, who prepare it for the wires.

The operator who sends it does not know its meaning.

No one can read one of these messages without the aid of the cipher code.

One of these books, stoutly bound in leather, is kept aboard of each ship, and at each army headquarters, always in the custody of responsible persons.

When a ship goes into action this case is put in a handy place by the commander, so that it can be thrown into the sea in case the ship is captured or disabled.

That it may not always be necessary that these vessels should go to a regular port to deliver or receive messages, the coast signal stations, light-houses, lightships and naval militia headquarters have direct telegraph lines to Washington, and a system of flag, semaphore and rocket signals for hailing patrol or dispatch boats that may pass in sight of land by day or night.

This great system of communication is enormously expensive, but it has been proved to meet every requirement of the service, and is capable of extension to the active field of operations in Cuba should occasion require.—New York World.

New Sleeping Car Line.

between Chicago and Buffalo on train No. 6, Nickel Plate road, leaving Chicago daily from the Van Buren street passenger station (on the Loop), at 2:55 p. m. Also a through sleeper to New York via Nickel Plate and Lackawanna roads, in addition to the excellent through service heretofore maintained.

Another Improvement in Train Service

on Nickel Plate road, train No. 6, leaving Van Buren street passenger station, Chicago (on the Loop), at 2:55 p. m., daily, for Buffalo and local stations, with Buffalo sleeper. Also New York sleeper via Nickel Plate and Lackawanna roads. Rates always the lowest. The excellent train service to Boston and New York city, with through day coaches and sleeping cars to

New York city and through sleeping cars to Boston, and the excellent dining car service, will continue as heretofore.

THE STRAY LIST.

FOR WEEK ENDING JUNE 9, 1898.

Pratt County—John Mawdsley, Clerk.

HORSE—Taken up by James Ricks, in Banner tp., April 14, 1898, one iron-gray horse, 5 years old, 15 hands high, weight 1,000 pounds, branded on right side of neck; valued at \$35.

MARE—By same, one bay mare, 4 years old, 14 hands high, weight 1,000 pounds, branded on right side of neck; valued at \$25.

Montgomery County—D. S. James, Clerk.

COW—Taken up by J. H. Bates, in Sycamore tp., May 6, 1898, one red cow, medium size, branded on right hip, underbit on left ear, dehorned, about 4 years old; valued at \$25.

Labette County—E. H. Hughes, Clerk.

MARE—Taken up by George Bengel, in Hackberry tp. (P. O. Bartlett), May 23, 1898, one medium sized brown mare, 8 years old, end of right ear split, collar and saddle marks; valued at \$20.

PONY—By same, one bay mare pony, 5 years old; valued at \$10.

MULE—By same, one brown mare mule, 3 years old, 14 hands high; valued at \$30.

MARE—Taken up by W. B. Salisbury, in Howard tp. (P. O. Valeda), April 9, 1898, one sorrel mare, 15 hands high, white hind legs half way up to hocks, blaze face, white on nose; valued at \$20.

Coffey County—Dan K. Swearingen, Clerk.

MARE—Taken up by J. S. Smith, in California tp. (P. O. Strawn), one sorrel mare, 3 years old, 15 hands high, white stripe in face, white on left hind foot, no marks or brands; valued at \$20.

FOR WEEK ENDING JUNE 16, 1898.

Smith County—Jno. A. Crabb, Clerk.

MARE—Taken up by J. E. Jeter, in Pawnee tp., May 16, 1898, one bright bay mare, 4 years old, old scar on right hind leg at hock joint; valued at \$25.

Pratt County—John Mawdsley, Clerk.

HORSE—Taken up by Charles H. Miller, in Paxton tp., June 8, 1898, one gray horse, weight 850 or 900 pounds, harness marks, had leather halter on; valued at \$15.00.

Linn County—C. O. Hoag, Clerk.

MARE—Taken up by B. G. Iliff, in Mound City tp., May 23, 1898, one light bay mare, about 7 years old, about 14 hands high, weight about 850 pounds, broken to harness, mane ratched and tail clipped, no other marks or brands; valued at \$20.

FOR WEEK ENDING JUNE 23, 1898.

Labette County—E. H. Hughes, Clerk.

MARE—Taken up by James Kinnaman, in Mound Valley tp. (P. O. Mound Valley), May 16, 1898, one dark bay mare, 2 years old, with slight scar on left thigh; valued at \$15.

HEIFER—Taken up by W. J. Kabrey, in Oswego tp. (P. O. Oswego), June 2, 1898, one small black 2-year-old heifer, white spot back of legs and some white in bush of tale, no marks or brands; valued at \$12.

Neosho County—B. W. Garvin, Clerk.

FILLEY—Taken up by E. W. Wheeler, in Big Creek tp. (P. O. Odense), May 27, 1898, one dark bay filley, about 2 years old, white spot in forehead and one white hind foot.

FILLEY—By same, one bright bay filley about 2 years old, forefoot clipped, no marks or blemishes on either; both are valued at \$27.50.

Sumner County—W. E. Wood, Clerk.

MARE—Taken up by James Craig, in Ft. O. Corbin, June 4, 1898, one bay mare, 15 hands high, weight 900 pounds, brand L on right side, white on top of shoulder and mane; valued at \$25.

McPherson County—C. M. Gray, Clerk.

HORSE—Taken up by E. E. Blake, P. O. Galva, May 12, 1898, one bay horse, 4 years old, weight about 800 pounds, white hind feet, star in forehead; valued at \$20.

THE WAR

on hog cholera as well as any other war depends upon the effectiveness of the weapons used. Hog cholera can be prevented by correct antiseptic treatment.

ZENOLEUM

The Great Disinfectant, Insecticide and Germicide given internally in food or drink will do it. Those who have tried it report greatest success. Sprinkle in the pens, spray the walls, put it in the "wallow." Given internally it expels all stomach and intestinal worms, kills all disease germs, renovates the blood and promotes good health. Then too, it is cheap. Write for circulars, prices and directions. SENT FREE.

ZENNER-RAYMOND DISINFECTANT CO. 36 Alwater St., Detroit, Mich.

Richardson Drug Co., Agents, Omaha, Neb.

CHLORO-NAPHTHOLEUM

KNOCKED IT OUT

In the First Round.

Microbes are responsible for lots of misery. They cause the HOG CHOLERA, CHICKEN ROUP, SHEEP SCAB and FOOT ROT.

Chloro-Naphtroleum

PUTS MICROBES TO SLEEP

so they will never wake up. Will heal sores and bruises quickly. We have direct branches in the principal cities of the U. S. from whence goods are shipped. We will send you a sample gallon, freight prepaid, \$1.50. Agency is worth having. Write for full particulars. WEST DISINFECTING CO., 208½ E. 57th St., New York.

BLACK LEG

PREVENTED BY

PASTEUR "VACCINE."

Write for particulars, prices and testimonials of thousands of American stockmen who have successfully "vaccinated" their stock during the past three years in Dakota, Nebraska, Wyoming, Colorado, Kansas, Texas, etc.

PASTEUR VACCINE CO., 52 Fifth Avenue, CHICAGO.



HOW TO SUBSCRIBE FOR GOVERNMENT BONDS.

Treasury Department,
Office of the Secretary,

Washington, D. C., June 13, 1898.

To the Press of the United States:

It is intended to give the bonds of the war loan authorized by the act to provide ways and means to meet war expenditures, the widest distribution possible, in order that all the people may have an opportunity for participating in the loan.

I have the honor, therefore, to ask the co-operation of the press in disseminating information which will give a better understanding of the nature, characteristics, and incidents of a government loan, and to that end, I will thank you to lend your aid by publishing in your columns the statement inclosed, which is intended to give, in as brief a manner as possible, a description of the registered and coupon bonds of the United States, and how to subscribe for them.

Respectfully yours,
L. J. GAGE, Secretary.

UNITED STATES BONDS.

United States bonds are recognized as the most secure and stable form of obligation that investors can hold. They are attractive, not only because of the absolute security offered, but because there is at all times a public market for them on which holders can quickly sell; and they also offer the most desirable form of collateral if the holder wishes to secure a temporary loan. The fact that United States bonds are not subject to taxes of any character—federal, State or municipal—is a valuable feature of that form of investment. United States bonds are issued in both coupon and registered form.

COUPON BONDS.

A coupon bond is payable to the bearer. It may be bought and sold without formality as freely as any kind of property and without indorsements of any kind. Owing to the freedom of transfer, coupon bonds are usually preferred by persons who expect to hold them but a short time. Their disadvantage for the person who wishes to make a permanent investment lies in the danger that they might be lost or stolen, in which case the loss to the owner would be as complete as would be the loss of a bank note. The coupon bonds take their name from the method by which interest is collected by the holder.

Printed on the same sheet with the bond is a series of coupons or small certificates of interest due, which are so designed that one is cut off at each interest period. Each coupon bears the number of the bond and shows the date of the coupon's maturity. The holder of a coupon bond, at each interest period, detaches the coupon due that day and collects it. The coupons are payable at any sub-treasury, and may be collected through any bank, and will usually be accepted by any merchant having a bank account, with whom the holder of the bond has dealings. The holder of a coupon bond may at any time have it converted into a registered bond free of charge.

REGISTERED BONDS.

A registered bond is payable to the order of the owner, and can only be transferred by being properly indorsed and assigned by the owner. Such assignment is made by the owner filling in the blank form on the back of the bond, and must be witnessed by some officer authorized by the regulations of the Treasury department to witness assignments. The owner of the registered bond who wishes to part with it writes his name on the back of the bond in the presence of the officer; then the witnessing officer writes his name in its proper place and affixes an impression of his official seal.

The officers who are authorized to witness assignments are a United States judge, United States district attorney, clerk of a United States court, collector of customs, collector or assessor of internal revenue, United States Treasurer or Assistant Treasurer, or the president or cashier of a national bank, or if in a foreign country, a United States minister or consul. In cases where there is no officer within a reasonable distance, or when, through sickness or for some other good reason, the owner of registered bonds can not go before one of these officers, the Treasury department will designate some person near the owner to act as witness.

When the owner of a registered bond disposes of it and has properly assigned it, he delivers it to the new owner, who should at once forward it to the Register of the Treasury for transfer on the books of the department. The Register cancels the bond so forwarded and issues a new bond in the name of the new

owner, and sends it to him by registered mail. The department makes no charge for transferring bonds.

If the owner of a registered bond loses it, or if it is stolen from him, he should at once notify the Secretary of the Treasury. A stoppage will be entered against the bond, and, if it should be presented for transfer, the department will hold possession of the bond until the ownership is clearly established. If a lost or stolen bond is not recovered within six months, the department will issue a duplicate bond upon proof of loss and a bond of indemnity being furnished.

The interest on registered bonds is paid by the government by means of checks. In order that no mistake may be made in the payment of interest, the books of the department are "closed" for a period, varying according to the importance of the loan. The books of the 4 per cent. loan of 1907 are closed for a whole month preceding the payment of a quarter's interest. On other loans the books are closed for fifteen days preceding the interest payment. During this period no transfers are made, and the time is devoted to preparing "schedules" which contain the names of the owners, the amount of bonds each one holds, and the amount of interest due each one. When these schedules have been prepared and proved they are sent to the Treasurer of the United States, who immediately has checks and envelopes addressed, and in due time each check is mailed to the address of its owner. The checks for the more distant points are first mailed. Interest checks are obligations of the United States, and, of course, are good everywhere.

Coupon bonds are issued in denominations of \$20, \$100, \$500, and \$1,000. Registered bonds are issued in denominations of \$20, \$100, \$500, \$1,000, \$5,000, \$10,000.

HOW TO SUBSCRIBE FOR THE NEW BONDS.

The war loan which is now being offered will be sold to subscribers at par during the period of subscription, which ends July 14, 1898. The method of subscription has been made as simple as possible. Blank forms may be obtained at every money order postoffice, and at most of the banks and express offices, and on these forms is clearly indicated all that it is necessary for the subscriber to fill out. The subscriber may himself mail to the Treasury department at Washington the blank form filled out, together with his remittance covering the par value of the amount of bonds for which he wishes to subscribe. That remittance may be in whatever form best suits the subscriber's convenience—in currency, bank draft, check, post-office money order, or express money order. The day the currency is received, or the day the proceeds are received from the checks, drafts or money orders, the subscription will be entered and will immediately begin drawing interest. When the bonds are delivered, a check will accompany each delivery covering the interest at 3 per cent. from the day the subscription is entered to the 1st of August, the date of the bonds, and from which date the bonds will carry their own interest.

The Kansas Farmer is informed that the State Board of Agriculture can still supply to early applicants a few copies of its quarterly reports, viz.: Those devoted to "Feeding Wheat to Farm Animals," "Alfalfa, Subsoiling and Irrigation," "The Helpful Hen," and "The Plow, Cow and Steer." The postage on these is about 6 cents each, and persons sending for the books should be sure to inclose stamps for that purpose. Address Secretary F. D. Coburn, Topeka, Kas.

Since the break in wheat prices the visible supply has rapidly fallen. May 28 it was 23,672,000 bushels; June 11 it had declined to 19,682,000 bushels.

VICTOR COW CLIP.

Holds cow's tail to her leg and keeps it out of the milk and milk's face.

Carried in the pocket.

30c. SINGLE; FOUR, \$1.

If dealer hasn't it, sent postpaid on receipt of price by manufacturer.

VICTOR NOVELTY WORKS

914 Warren Av., Chicago.



"Eli" Baling Presses

88 Styles & Sizes for Horse and Steam Power.

Hay or Straw 48 Inch Feed Opening

Power Leverage 64 to 1 STEEL

Largest line in the world. Send for Catalog.

COLLINS PLOW CO., 1120 Hampshire St., Quincy, Ill.

MARKET REPORTS.

Kansas City Live Stock.

KANSAS CITY, June 13.—Cattle—Receipts since Saturday, 3,717; calves 69; shipped Saturday, 766 cattle; no calves. The market was generally steady on the native side and steady to 10c higher in the Texas division. The following are representative sales:

SHIPPING AND DRESSED BEEF STEERS.

No.	Ave. Price	No.	Ave. Price
5.....	1,414 \$4.85	21.....	1,436 \$4.75
31.....	1,228 4.65	23.....	1,003 4.50
10.....	1,260 4.40	3.....	856 4.25
1.....	1,060 4.00	1.....	730 3.50

WESTERN STEERS.

No.	Ave. Price	No.	Ave. Price
148.....	1,353 \$4.75	59.....	1,363 \$4.55
97.....	1,324 4.55	33.....	1,378 4.50
33.....	1,123 4.40	27.....	965 4.00
3.....	1,200 4.00	24 P. H.....	770 3.90

NATIVE HEIFERS.

No.	Ave. Price	No.	Ave. Price
1.....	920 \$4.65	4.....	915 \$4.50
3.....	966 4.40	8.....	803 4.35
2.....	800 4.25	7.....	582 4.15
14.....	548 4.00	2.....	850 3.50

NATIVE COWS.

No.	Ave. Price	No.	Ave. Price
1.....	1,130 \$4.00	8.....	1,262 \$3.75
13.....	1,006 3.50	4.....	1,023 3.25
3.....	1,100 3.00	2.....	765 2.50
1.....	670 2.25	1.....	750 1.50

NATIVE FEEDERS.

No.	Ave. Price	No.	Ave. Price
19.....	1,012 \$4.65	1.....	1,120 \$4.50
2.....	1,205 4.50	14.....	1,032 4.40
1.....	1,280 4.40	6.....	1,013 4.15

NATIVE STOCKERS.

No.	Ave. Price	No.	Ave. Price
10.....	485 \$4.40	35.....	476 \$5.00
6.....	650 4.75	16.....	830 4.50
16.....	846 4.40	2.....	815 4.25
1.....	500 4.00	4.....	780 3.80

Hogs—Receipts since Saturday, 4,477; shipped Saturday, 1,347. The market was strong to 5c higher. The following are representative sales:

63.....	299 \$4.00	61.....	274 \$3.95	29.....	252 \$3.95
64.....	280 3.92½	80.....	266 3.90	73.....	249 3.90
35.....	228 3.90	68.....	253 3.90	65.....	273 3.90
68.....	250 3.90	73.....	222 3.90	82.....	242 3.87½
80.....	221 3.85	81.....	209 3.85	44.....	245 3.85
180.....	247 3.85	73.....	272 3.85	24.....	244 3.85
115.....	204 3.77½	77.....	224 3.77½	65.....	212 3.77½
79.....	217 3.75	35.....	209 3.75	16.....	153 3.75
79.....	182 3.75	81.....	204 3.75	143.....	191 3.75
1.....	350 3.75	78.....	194 3.72½	78.....	186 3.72½
80.....	183 3.70	83.....	159 3.70	54.....	169 3.67½
62.....	200 3.65	85.....	186 3.65	8.....	150 3.65
111.....	158 3.60	103.....	148 3.60	50.....	176 3.60
91.....	169 3.55	8.....	320 3.55	8.....	148 3.50
1.....	380 3.50	5.....	152 3.50	18.....	158 3.50
2.....	490 3.50	1.....	310 3.50	32.....	142 3.47½
1.....	610 3.40	88.....	214 3.40	4.....	365 3.35
14.....	102 3.25	27.....	107 3.10	10.....	96 3.10

Sheep—Receipts since Saturday, 1,608; shipped Saturday, 422. The market was active and steady to strong. The following are representative sales:

14 spg. lbs.....	65 \$6.00	992 Ariz.....	95 \$4.75
28 sw.....	77 4.55	85 sw.....	85 4.50
33 T. fdrs.....	70 3.70	33 stk. lbs.....	45 3.65
34 feeders.....	72 3.50	17 T. sheep.....	61 4.55

St. Louis Live Stock.

ST. LOUIS, June 20.—Cattle—Receipts, 1,900; market steady; native shipping steers, \$4.50@5.20; light and dressed beef and butcher steers, \$4.15@5.05; stockers and feeders, \$3.55@4.65; cows and heifers, \$2.00@4.80; Texas and Indian steers, \$3.15@4.50; cows and heifers, \$2.90@3.75. Hogs—Receipts, 4,000; market 5c higher; yorkers, \$3.75@3.85; packers, \$3.80@3.90; butchers, \$3.90@4.00. Sheep—Receipts, 1,000; market strong; native muttons, \$3.50@4.70; lambs, \$4.50@6.45.

Chicago Live Stock.

CHICAGO, June 20.—Cattle—Receipts, 21,000; market generally 10c lower; beefs, \$4.00@5.25; cows and heifers, \$2.50@4.65; Texas steers, \$3.60@4.30; stockers and feeders, \$3.80@4.85.

Hogs—Receipts, 38,000; market active and steady to a shade higher; light, \$3.70@3.92½; mixed, \$3.80@4.00; heavy, \$3.80@4.05; rough, \$3.80@3.85.

Sheep—Receipts, 16,000; market steady; natives, \$3.50@5.25; westerns, \$4.40@5.25; lambs, \$4.00@6.00.

Chicago Grain and Provisions.

	June 20	Opened	High'st	Low'st	Closing
Wht—June....	78	78	78	77	77
July.....	71½	71½	71½	70	70½
Sept.....	67	67½	67½	66½	67½
Dec.....	67½	68½	68½	66½	68½
Corn—June....	81½	81½	81½	81½	82½
July.....	82½	82½	82½	82½	83½
Sept.....	82½	83½	83½	82½	83½
Oats—June....	24½	24½	24½	24½	24½
July.....	24½	24½	24½	24½	24½
Sept.....	20½	21½	21½	20½	21½
Pork—June....	9 55	9 50	9 55	9 50	9 50
July.....	9 72½	10 00	9 70	9 70	9 70½
Sept.....	9 72½	10 00	9 70	9 70	9 70½
Lard—June....	5 70	5 80	5 70	5 80	5 80
July.....	5 80	5 92½	5 82½	5 90	5 90
Sept.....	5 40	5 55	5 40	5 55	5 55
Ribs—June....	5 40	5 55	5 40	5 55	5 55
July.....	5 40	5 55	5 40	5 55	5 55
Sept.....	5 40	5 55	5 40	5 55	5 55

Kansas City Grain.

KANSAS CITY, June 20.—Wheat—Receipts here to-day were 23 cars; a week ago, 28 cars; a year ago, 10 cars. Sales by sample on track: Hard, No. 1, nominally 73@77c; No. 2 hard, 74@77c; No. 3 hard, 70@75c; No. 4 hard, 60@70c; rejected hard, 60c. Soft, No. 1 red, nominally 75@77c; No. 2 red, 72@77c; No. 3 red, 70c asked; No. 4 red, nominally 50@60c; rejected red, nominally 45@50c. Spring, No. 2, nominally 73@75c; No. 3 spring, nominally 65@70c; rejected spring, nominally 45@50c.

Corn—Receipts here to-day were 54 cars; a week ago, 33 cars; a year ago, 59 cars. Sales by sample on track: Mixed, No. 2, 31@31½c; No. 3 mixed, 30½c; No. 4 mixed, 29c; no grade mixed, nominally 25@27c. White, No. 2, 31½@32c; No. 3 white, 31½@31½c; No. 4 white, nominally 30½c.

Oats—Receipts here to-day were 7 cars; a week ago, 25 cars; a year ago, 7 cars. Sales by sample on track: Mixed, No. 2, 23½c; No. 3 mixed, nominally 23c; No. 4 mixed, nominally 22c. White, No. 2, nominally 25c; No. 3 white, 24c; No. 4 white, nominally 23½c.

Rye—No. 2, nominally 40c; No. 3, nominally 38c; No. 4, nominally 38c.

Hay—Receipts here to-day were 10 cars; a week ago, 24 cars; a year ago, 16 cars. Quotations are: Choice prairie, \$9.00; No. 1, \$8.00@8.50; No. 2, \$7.00@7.50; No. 3, \$4.00@5.50; choice timothy, \$8.50; No. 1, \$8.00@8.50; No. 2, \$6.50@7.00; clover and timothy, No. 1, \$6.50; No. 2, \$6.00; pure clover, \$6.00; packing, \$3.50.

Kansas City Produce.

KANSAS CITY, June 20.—Eggs—Strictly fresh, 8½c per doz.

Butter—Extra fancy separator, 14½c; firsts, 12c; dairy, 10@12c; store packed, 10c.

Poultry—Hens, 6c; broilers, 12c per lb.; roosters, 12½c each; ducks, 5c; young ducks, 10c; geese, 4c; goslings, 10c; hen turkeys, 7c; young turkeys, 6c; old toms, 6c; pigeons, 75c per dozen.

Small fruits—Blackberries, Texas, fancy, \$1.00@1.50 per 24-box crate. Gooseberries, home grown, \$1.10@1.25 per crate. Raspberries, red, Arkansas, \$1.50@1.75 per 24-pint crate. Currants, home grown, \$1.50 per crate. Cherries, home grown, \$1.25@1.75 per crate.

Vegetables—Cauliflower, 75c@1.00 per doz. Asparagus, 25c per doz. Tomatoes, 50c per 4-basket crate. Cucumbers, 20@30c per doz. Green peas, \$1.00 per bu. Wax beans, 50c per peck basket. Lettuce, home grown, 20c per bu. Onions, \$1.00 per bu. Beets, 15@25c per doz. Cabbage, home grown, \$1.75 per 100 lb. crate.

Potatoes—New Texas, 70@75c per bu.; old northern stock, fancy, sacked, Burbanks, 70@80c; choice to fancy mixed, bulk, 50@60c; Minnesota and Dakota, bulk, 60c.

In the pasture provided with shade the animals give best returns for their summer's keep.

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LITTLE BOY BLUE TO MR. ROOSTER.

Mr. Rooster, won't you please
Listen just a minute?
Yonder is your little house,
Mrs. Hen is in it.
She is shut in with her chicks,
But I heard her talking,
Saying "If I could get out
I would go a walking."

"Mrs. Hen", I softly said,
"It would give me pleasure
To keep house while you go out;
Trust me with your treasure."
"Luck, luck, luck," she quickly said;
Now do please invite her;
Mr. Rooster, I am sure,
It would quite delight her.

Chicken Cholera.

Of all the maladies to which domestic fowls are subject, this one is by far the most dreaded by the majority of breeders. It has never been a great terror to me, for I have always found it to yield readily to treatment, and easily prevented. For the benefit of the sufferers from its ravages, however, I shall give a brief account of its causes, its symptoms and its cure. And let me repeat here that my knowledge of the matter is entirely practical and not an attempted improvement on the views of others.

CAUSES.

The chief cause is want of care. Vermin, which weaken the strength of the bird; confinement in foul runs, with poor feed, and dirty water vessels; want of green food, gravel and shade in the summer, are all apt agents for the disease. It is very contagious and infectious, and if the sick fowls are allowed to remain with the others it will spread with marvelous rapidity, and is extremely fatal.

SYMPTOMS.

Drooping, loss of appetite, excessive thirst, paleness in color of comb, face and wattles are the first. Then watery discharges, the excrement being of a greenish white color, weakness, staggering, and death. This last generally occurs in twenty-four hours after the second symptoms fairly set in.

CURE.

Remove the sick fowl instantly from the others, and (if in summer) put in a dark cool place. Give a teaspoonful of castor oil. If it acts freely, take a half or whole slice of loaf bread, according to size of bird, put in a saucer a good pinch of Cayenne pepper, four to six drops of camphor, and as much whisky or brandy as the slice of bread will absorb without getting too soft. Give half of this an hour after the oil has acted and the balance within twelve hours. Where the case was taken in time I have never lost a bird.

PREVENTION.

Clean, fumigate and purify at once. Watch others with great care for symptoms. Put white oak bark or a small quantity of tannin in the water, and mix a little red pepper and kerosene in the soft food. Feed green food sparingly, unless birds are accustomed to free range. Bury dead birds deeply under ground and far away from the yards. I cured, last spring, the birds of a neighbor who had already lost sixty, and this, too, within less than four days. But strict attention to the preventives are half the battle in effecting a rout of the enemy.—P. B. Dorsey, in Maryland Farmer.

Eggs as Food.

Eggs, at average prices, are among the cheapest and most nutritious articles of diet. Like milk, an egg is a complete food in itself, containing everything necessary for the development of a perfect animal, as is manifest from the fact that a chick is formed from it. It seems a mystery how muscles, bones, feathers and everything that a chick requires for its development are made from the yolk and white of an egg; but such is the fact, and it shows how complete a food an egg is. It is also easily digested, if not damaged in cooking. Indeed, there is no more concentrated and nourishing food than eggs. The albumen, oil and saline matter are, as is milk, in the right proportion for sustaining animal life. Two or three boiled eggs, with the addition of a slice or two of toast, will make a breakfast sufficient for a man, and good enough for a king.

According to Dr. Edward Smith, in his treatise on "Food," an egg weighing an ounce and three quarters contains 120 grains of carbon and seventeen and three-quarters grains of nitrogen, or 12.25 per cent. of carbon and 2 per cent.

of nitrogen. The value of one pound of eggs as food for sustaining the active forces of the body is to the value of one pound of lean beef as 1,584 to 9,000. As a flesh-producer, one pound of eggs is about equal to one pound of beef.

A hen may be considered to consume one bushel of corn yearly, and to lay ten dozen, or fifteen pounds, of eggs. This is equivalent to saying that three and one-tenth pounds of corn will produce, when fed to a hen, five-sixths of a pound of eggs; but five-sixths of a pound of pork requires about five pounds of corn for its production. Taking into account the nutriment of each, and the comparative prices of the two on an average, the pork is about three times as costly a food as the eggs, while it is certainly less healthful.—Boston Journal of Chemistry.

The Egg in Medicine.

In medicine the shell of an egg is used as an antacid, being better adapted to the stomach than chalk. The white of an egg is an antidote in cases of poisoning with strong acids or corrosive sublimate. The poison will coagulate the albumen, and if these poisons be in the system, the white of an egg if swallowed quickly will combine with the poison and protect the stomach. An astringent poultice is made by causing it to coagulate with alum. This is called alum curd and is used in certain diseases of the eye. The yolk of the egg is sometimes used in jaundice, and is an excellent diet for dyspeptics.—New England Druggist.

Poultry Notes.

Get the eggs to market while fresh. Clean out the nests. Give them a coat of whitewash.

Take out the roosts. Give them a thorough going over with kerosene.

If you have tobacco stems about the place use some of them in the nests.

Don't have draughts in the hen house or the drafts in the bank will be light.

Warm, dry quarters and no lice will cause the chicks to grow wonderfully fast.

Look out for damp or wet quarters for the fowls just now. Look out they are not damp.

When the comb has a purplish look you may be sure that some disorder is affecting your hens.

Let the hens have access to the alfalfa pasture. Fowls are fond of this clover and do well upon it.

Make your hens scratch for a living—but put the grain where scratching will get it, or scratching will not make them live.

The keeping of 200 hens on a ten-acre farm would not interfere with growing full crops of corn, potatoes or grass, and by adopting a system of soiling a small dairy, say four cows, might be kept on ten acres in connection with poultry-growing. The cows would furnish manure to keep a part of the land in a very high state of cultivation, and the skim-milk given to drink, used to mix the dough or made into curd for young fowls, would furnish excellent food for them. If one or two acres of land could be devoted to potatoes all unsalable ones would make good chicken feed. Just to what extent any one should go into poultry, or kinds they should keep, each one must determine for himself. In some cases it will pay best to keep only one kind of thoroughbred fowls, and sell the eggs and fowls for breeding purposes, but this will require some skill in advertising and care in breeding. The most successful poultry grower of my acquaintance kept pure Plymouth Rocks and also bred turkeys, ducks and geese.—Poultry Keeper.

The results of the Cornell (Ithaca, N. Y.) experiments with hens by testing the effect of a carbonaceous diet with one lot and a nitrogenous diet with another, are interesting. Prof. I. P. Roberts thinks he is warranted in drawing from the results the following conclusions: "Chickens fed on an exclusive corn diet will not make a satisfactory development, particularly of feathers. The bones of chickens fed upon a nitrogenous ration are 50 per cent. stronger than those fed upon a carbonaceous ration. Hens fed on a nitrogenous ration lay many more eggs, but of smaller size and poorer quality, than those fed exclusively on corn. Hens fed on corn, while not suffering in general health, become sluggish, deposit large masses of fat on the internal organs, and lay a few eggs of large size and excellent quality. The flesh of ni-

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trogenous-fed fowls contains more albuminoids and less fat than those fed on a carbonaceous ration, and is darker colored, juicier and tenderer."

The chicken house produces a fertilizer that is of great value when properly handled, but one that can be quickly rendered worthless by mistaken methods. Under the impression that these are needed to keep the house clean and pure, lime or ashes are frequently dusted about and thrown beneath the roosts. When these substances are mixed with the droppings they liberate the ammonia, which is the most valuable part of the manure. The house should be kept clean and no accumulation permitted beneath the roosts, but it should be done by scraping the floor thoroughly every morning, removing the manure and storing it in barrels in a dry shed. To get the best results from its use, feed it in a semi-liquid form about the strawberry and other small fruit plants. If you prefer not to clean it out so often, sprinkle dry clay, swamp muck or dry land plaster plentifully about to absorb the injurious gases and the excessive moisture, and remove the whole once a week.

A farmer who has raised turkeys many years, and who takes pleasure in making experiments, writes that charcoal, turkey fat and diamonds are alike in some respects. It is a fact that more fat may be gotten out of charcoal than one would suspect without a knowledge of chemistry. Here is an account of one experiment: "Four turkeys were confined in a pen and fed on meal, boiled potatoes and oats. Four others of the same brood were at the same time confined in another pen and fed daily on the article, but with one pint of very fine pulverized charcoal mixed with their food—mixed meal and boiled potatoes. They also had a plentiful supply of broken charcoal in their pen. The eight were killed on the same day, and there was a difference of one and one-half pounds each in favor of the fowls which had been supplied with charcoal, they being much the fatter, and the meat being superior in point of tenderness and flavor."—Poultry World.

If lice accumulate upon the sitting hens, the chickens will quickly be the sufferers, after they leave the shells. Their insidious enemy readily finds its way, in armies, from the feathers of the mother to the tender flesh of the younglings. A little precaution at the beginning will save a deal of trouble afterward. See to it that the nests are clean at the outset, when your hens are placed therein. Kerosene should be applied beneath the nests, upon the woodwork only. It is too strong and penetrating to be placed where it will come in direct contact with the eggs that are being set on, or to touch the bodies of the fowls. And where it is carelessly or too profusely scattered—so that the hen sits upon it or her eggs may be touched with this liquid—it does more harm than good, often permeating the shells and destroying the embryo chicks, as we have known the instances to occur.

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Battle With Wildcat.

For the first winter in many years wildcats have been numerous along the Fulton Chain. "Bill" Harwood, an old-time Adirondack guide, arrived in town last week with his head and arms done up in bandages, as evidence of the willingness of a wildcat to fight when in close quarters.

Harwood and his big deerhound Spot had been making a tour of the lakes for winter game, when they were caught in a snow storm on Black River mountain, near Rocky Point. They camped for the night in a shack left by a party of surveyors. Along in the morning Harwood was awakened by the barking of the hound. Turning over in his blankets he saw two shining eyes in a corner of the shack. Harwood knew that it was a wildcat. The wildcat had crawled to the entrance, when the hound leaped ahead and blocked the way out. A terrific battle followed. The cat leaped for the hound and literally tore the dog into shreds. Then the decayed trees holding the shack fell over the entrance and the cat and Harwood were literally penned in to fight a duel to the death.

The odds were plainly with the cat, for Harwood's gun had fallen with the brush outside the shack. He was crawling to reach the weapon when the cat came down upon him, tearing its claws through his face and down his right arm. If the cat had followed the attack immediately the battle would have been over then and there. Harwood's life was saved by luck and a clever idea. As the cat leaped back for a second attack Harwood fell forward. His hand struck a box of red pepper, which he had brought with his provisions. Quick as thought he snatched a handful of pepper and arising threw it at the head of the cat. The aim was good. The cat was blinded until Harwood could crawl outside and reach his rifle. Then he dropped under the edge of the shack and, locating the cat by the noise, fired until the animal was dead.—New York World.

It is suggested that every country school house have a cyclone cave. It was formerly said that in country schools the young idea was taught how to shoot; now is it to be taught how to hunt its hole?

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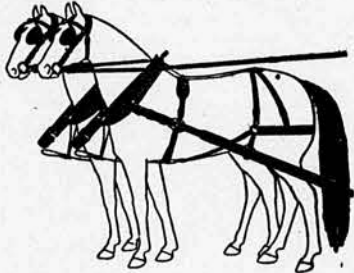
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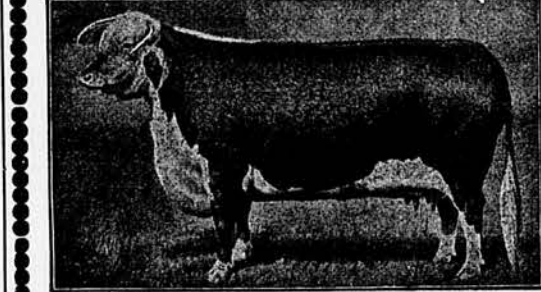
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Official Receipts for 1897	1,921,962	3,350,796	1,134,236	123,041
Slaughtered in Kansas City	865,287	3,084,623	805,268	
Sold to feeders	655,615	341	151,389	
Sold to shippers	216,771	263,522	91,578	
Total Sold in Kansas City 1897	1,847,673	3,348,556	1,048,233	

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