

KANSAS FARMER



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WHO WILL SUCCEED IN THE FUTURE?

The report comes from Wichita of an Iowa farmer who wanted "to get away from the farm" notwithstanding the fact that he had accumulated a nice competence. As the story goes, this prosperous Iowa farmer met a manufacturer who was willing to sell a \$20,000 interest in his business. The Iowa farmer also met the banker with whom this manufacturer had done business and was encouraged to make the investment.

It turned out that the manufacturer owed the banker \$20,000 or more, and the Iowa farmer's money was speedily exchanged for the manufacturer's note at bank. The business was otherwise a poor business and bankrupt, so that the Iowa farmer had received no value for his \$20,000.

The fact that this man who had succeeded in getting away from the farm killed his partner, for which the jury failed to find him guilty, and the further fact that he became a nervous wreck, had an interview with the banker, and was afterward thrown into prison on some sort of a charge—these further facts, together with the indignation of citizens of Wichita which compelled the release of the defrauded and wrecked man, are scarcely needed to impress the lesson of this tragedy.

This is the age of specialization. Theoretical and practical knowledge has become so diverse and so voluminous that none may know it all. Life is too short for the acquisition of all that is known about some of the occupations of men. The man who has grown up on the farm and has learned its work from his youth up often fails to realize that he knows what in half a lifetime would not penetrate the brain of a stranger to the farm and its problems and processes. The farmer's diverse knowledge and his habits of thought are valuable capital in his own business, but they are not adapted to most other businesses.

The business of manufacturing looked attractive to the Iowa farmer. He was somewhat like the Irishman who was sure he could play the fiddle because it looked so easy.

So, too, the business of farming looks easy to many a city man who dreams of retiring to a farm when he is old. When the city man thinks to do a little farming at arms' length as a "side issue," he usually expends on the farming several times the revenue derived from the farming, the farm is presently placed in the hands of a tenant and assumes the well-recognized appearance of a rented place.

There are exceptions to the rule on both sides, but the man who expects to succeed at any business must not expect success to come as a matter of luck. He must know the conditions and the details of the work he proposes to enter. The successes of the future are likely to be confined almost exclusively to those who have made careful preparation for a life work, have learned its theory and practice, and have become proficient above the average. The successful man will "like his job," will stick to it, will keep expenditures within income, and will fight shy of alluring schemes to separate him from his money.

It is not necessary that every farmer devote his life to farming, neither is it necessary that every city boy be condemned to the humdrum life of the average city toiler, but it is important that the youth make special preparation for his life work, that he select this work with care and at as early an age as is consistent with

wise choice, that he find a large share of his enjoyment in his work; that he devote himself to it with energy, persistence, and enthusiasm; and that he remember the old saying, "A rolling stone gathers no moss."

TRANSPORTATION BY WATER.

The Deep-Waterway Committee of the Chicago Commercial Association has issued a report entitled "From the Great Lakes to the Gulf of Mexico." This committee takes a comprehensive view of the situation, making a valuable contribution to the discussion which should and probably will result in such improvement of the principal waterways of the great interior valley of North America as will make it possible and profitable to transport a large proportion of the heavy freight over these waterways.

Speaking of the Mississippi Valley the report says:

"This North Central Division of the country is penetrated through its entire length from north to south, by the Mississippi River, which has 600 affluents, 45 of which are navigable, whose courses are shown on our maps, and a drainage area of 1,267,454 square miles. The tributaries of this gigantic natural waterway stretch their arms, east and west, a distance of 4,300 miles. If an explorer should follow up each of these affluents from their mouths to the point where navigation becomes impossible, his out-going journey would exceed 16,000 miles and lead him through twenty-three States and Territories of the Union. This imperial Mississippi Valley has a larger area than China, proper, which maintains a population of 400,000,000, and it has an internal commerce approximating the combined foreign commerce of all the nations of the globe.

"Of this stupendous water-system Senator Ingalls, of Kansas, once said that it is equivalent to a land-locked harbor, an estuary, or arm of the sea, penetrating into the North American continent further than from New York to Liverpool, with a coast line 32,000 miles in length, having hundreds of prosperous towns and cities and innumerable ports and havens from which the agricultural and manufactured products of one-third of the arable surface of the United States can be shipped to all parts of the globe."

"It is simply impossible to form a just conception of the great changes that have taken place within the last century in the growth of commercial power and in the development of social and educational advantages within the great Middle West."

KANSAS CROPS.

Early apprehensions as to the outcome of the Kansas wheat-crop have given place to pleasant realizations as the thrashers progress with their work. Not only are the usual yields realized, but the phenomenal crops, those which thrash out above forty bushels to the acre, are more than usually numerous. The quality of the grain is superb. The short straw produced plump berry and heavy heads, while the perfect harvest weather made it possible to secure the crop with surprisingly little damage.

Corn came up irregularly. Few perfect stands were obtained. The dry weather of the early summer had its compensations, however, in enabling the farmer to give his corn perfect cultivation. The later rains are producing a most satisfactory growth, so that present prospects promise a fine crop of corn.

Alfalfa is increasing so greatly in

acreage and in market favor that this crop, besides its effect on the stock and dairy industries, is becoming important commercially. The fine condition of the soil in the early spring produced an excellent first cutting. The second cutting was much lighter on account of the dry weather. The third cutting took advantage of the later rains and produced a satisfactory crop. The fourth cutting has yet to give an account of itself, while the fifth may or may not make a considerable yield.

Agriculturally, Kansas is rejoicing in a prosperous season.

SOW ALFALFA.

Sow alfalfa. Sow it this season. Sow it between August 15 and September 15.

The computed feeding value of alfalfa places it in close company with shelled corn, ton for ton. Its composition is much like that of wheat-bran, and it is, theoretically, a better substitute for bran than for corn. In practical feeding, it has proved its value. The market also recognizes its worth. A good supply of alfalfa on the farm means prosperity.

"But it is difficult to get a stand," say some farmers. Much depends on the preparation of the soil. Stubble land that was disked immediately after harvest, was plowed early, was harrowed or subsurface packed immediately after plowing, is harrowed after every rain, and that shall be sown with good seed as soon after August 15 as the soil shall be found to contain a plentiful supply of moisture should produce a good stand of alfalfa. If the soil be deficient in fertility, a top dressing of manure or an application of packing-house fertilizer with the seed will be found beneficial. Most Kansas soils contain or soon become inoculated with the alfalfa bacteria, so that while producing crops rich in nitrogen, this essential element of fertility is continually on the increase in the alfalfa meadow.

Sow alfalfa. Sow a little alfalfa if you can not sow much. "The more alfalfa, the more prosperity" is almost universally true in Kansas.

UNCERTAIN CONDITIONS IN RUSSIA.

When a few weeks ago the Czar of Russia assembled a representative body, called the Douma, chosen from the people, the world heaved a sigh of relief and indulged the hope for the dawn of a brighter day for the common people. This representative body was progressing slowly with its work, was asking for reforms in the interest of the people, and was, as is not infrequent in popular bodies, doing a good deal of speech-making. Suddenly, the Czar yielded to the demands of the aristocracy and dispersed the Douma.

Revolts have been frequent in various parts of the Empire; the army has been infected with the spirit of revolt; the navy has been far from steadfast in loyalty, and the people generally are inclined to give allegiance to a more or less secret provisional government, which has an organization whose extent and completeness are largely matters of conjecture to the world at large.

The despatches from Russia indicate a great revolution. Whether the throne with its many bureaus can maintain its ascendancy is a question depending on the loyalty of the military. The world rather expects one of the bloody revolutions which in times past have often accompanied the advance of a people from the present

condition of the Russians to a higher plane of civilization and liberty.

The unsettled conditions prevent the normal production from Russian fields and lead to the destruction of much that has been produced. Thus the world's markets are deprived of a portion of their supplies. But the advancement of the people to a higher civilization and more settled conditions will be accompanied by the development of greater wants, so that the emergence of Russia from her present unfortunate conditions need not be feared by the producers of other lands, but should be anticipated as a betterment whose benefits will be shared by all humanity.

THE KING DRAG MAKES GOOD ROADS.

From Seabrook to Bradford Miller's the distance is five miles. Seabrook is the southwest suburb of Topeka. A macadamized road joined to paved streets leads to Seabrook. About a year ago Bradford Miller interested himself and others along the road west from Seabrook to the extent that it was arranged to try the King drag on the five miles between Miller's and Seabrook. Seventeen farmers subscribed each \$2 for the work. Round trips with the drag were made as follows:

September 2, 9, 12; October 10, 21, 26; November 2, 9; January 19; February 21; March 30; April 6 and 7, 9, 16, 20, 23; May 5; June 20; July 15. Only half a trip was made on September 9 and on April 20 the trip was discontinued at M. L. Holloway's because there had been no rain east of that place.

The entire cost was \$34. Every one of the seventeen subscribers is so well pleased with the result that the work is to be continued under the same arrangement.

The drag is made of planks and is steel shod full length, but the road is becoming so rounded that the cutting edges will probably be removed from half the length.

Three horses are used to draw this drag. To make the round trip, 10 miles, requires about four hours.

REFORMATION OF FOOD LAWS.

One of the most important movements of the present is that which promises pure foods from all food factories which supply the interstate trade. The recently enacted law of Congress is excellent. The fact that it is in line with the work and recommendations of Dr. H. W. Wiley, chemist of the Department of Agriculture, and that its execution will be under Dr. Wiley's direction is a guaranty of the efficiency of the measure and of honesty in its enforcement.

The extent to which the foods of the people are prepared in great factories would have surprised those who lived a generation ago. The fact that adulteration can be engaged in, with small chance of detection by the consumer and smaller chance of effective remonstrance, laid before the avaricious greater temptations than some of them were able to bear.

An illustration may show how this works: Thomas Best, of Medicine Lodge, Kans., manufactures a gypsum powder as fine as flour. Some years ago a candy manufacturer asked quotations on this powder by the ton and by the car-load. The question was asked whether it were possible that the candy-maker intended to use so much gypsum in the adulteration of his candies. His reply was, "We don't call it adulteration; we call it streaks of economy."

Perishable foodstuffs have been
(Continued on page 780.)

Miscellany

Scientific Investigation and Progress.
PRESIDENT IRA REMSEN, JOHNS HOPKINS UNIVERSITY.*

At the weekly services of many of our churches, it is customary to begin with a verse or two from the Scriptures for the purpose, I suppose, of putting the congregations in the proper state of mind for the exercises which are to follow. It seems to me that we may profit by this example, and accordingly I ask your attention to Article I of the Constitution of the American Association for the Advancement of Science, which reads thus: "The objects of the association are, by periodical and migratory meetings, to promote systematic direction to scientific research, and to procure for the labors of scientific men increased facilities and a wider usefulness."

The first object mentioned, you will observe, is "to promote intercourse between those who are cultivating science in different parts of America;" the second is "to give a stronger and more general impulse and more systematic direction to scientific research;" and the third is "to procure for the labors of scientific men increased facilities and a wider usefulness." Those who are familiar with the history of the association are well aware that it has served its purposes admirably, and I am inclined to think that the object of those who have been in the habit of attending the meetings is the promotion of intercourse between those who are cultivating science. Given this intercourse and the objects will be reached as a necessary consequence, for the intercourse stimulates thought, and thought leads to work, and work leads to wider usefulness.

While in 1848, when the association was organized and the constitution was adopted, there was a fair number of good scientific investigators in this country, it is certain that in the half century that has passed since then, the number of investigators has increased very largely, and naturally the amount of scientific work done at present is very much greater than it was at that time. So great has been the increase in scientific activity during recent years that we are apt to think that by comparison, scientific research is a new acquisition. In fact, there appears to be an impression abroad that in the world at large scientific research is a relatively new thing, for which we of this generation and our immediate predecessors are largely responsible. Only a superficial knowledge of the history of science is necessary, however, to show that the sciences have been developed slowly, and that their beginnings are to be looked for in the very earliest times. Everything seems to point to the conclusion that man has always been engaged in efforts to learn more in regard to the world in which they find themselves. Sometimes they have been guided by one motive and sometimes by another, but the one great underlying motive has been the desire to get a clearer understanding of the universe. But besides this, there has been the desire to find means of increasing the comfort and happiness of the human race. A reference to the history of chemistry will serve to show how these motives have operated side by side. One of the first great incentives for working with chemical things was the thought that it was possible to convert base metals, like lead and copper, into so-called noble metals, silver and gold. Probably no other idea has ever operated as strongly as this upon the minds of men, to lead them to undertake chemical experiments. It held control of intellectual men for centuries, and it was not until about a hundred years ago that it lost its hold. It is very doubtful if the purely scientific question, whether one form of matter can be transformed into another, would have had the power to control the activities of investigators for so long a time; and it is idle to speculate upon this subject. It should, however, be borne in mind that many of those who were engaged in this work were actuated by a desire to put money in their

purses—a desire that is by no means to be condemned without reserve, and I mention it not for the purpose of condemning it, but to show that the thing that we sometimes think of as peculiarly modern is among the oldest known to man.

While the alchemists were at work upon their problems, another class of chemists were engaged upon problems of an entirely different nature. The fact that substances obtained from various natural sources and others made in the laboratory produce effects of various kinds when taken into the system led to the thought that these substances might be useful in the treatment of disease. Then, further, it was thought that disease itself is a chemical phenomenon. These thoughts, as is evident, furnish strong motives for the investigation of chemical substances, and the science of chemistry owes much to the work of those who were guided by these motives.

And so in each period as a new thought has served as the guide, we find that men have been actuated by different motives, and often one and the same worker has been under the influence of mixed motives. Only in a few cases does it appear that the highest motives alone operate. We must take men as we find them, and we may be thankful on the whole that there are so many who are impelled by one motive or another or by a mixture of motives to take up the work of investigating the world in which we live. Great progress is being made in consequence and almost daily we are called upon to wonder at some new and marvelous result of scientific investigation. It is quite impossible to make predictions of value in regard to what is likely to be revealed to us by continued work, but it is safe to believe that in our efforts to discover the secrets of the universe, only a beginning has been made. No matter in what direction we may look, we are aware of great unexplored territories, and even in those regions in which the greatest advances have been made, it is evident that the knowledge gained is almost insignificant as compared with that which remains to be learned. But this line of thought may lead to a condition bordering on hopelessness and despondency, and surely we should avoid this condition, for there is much greater cause for rejoicing than for despair. Our successors will see more and see more clearly than our predecessors. It is our duty to keep the work going without being too anxious to weigh the results on an absolute scale. It must be remembered that the absolute scale is not a very sensitive instrument, and that it requires the results of generations to affect it markedly. On occasion of this kind, it seems fair to ask the question: What does the world gain by scientific investigation? This question has often been asked and often answered, but each answer differs in some respects from the others, and each may be suggestive and worth giving. The question is a profound one, and no answer that can be given would be satisfactory. In general, it may be said that the results of scientific investigation fall under three heads—the material, the intellectual, and the ethical. The material results are the most obvious and they naturally receive the most attention. The material wants of man are the first to receive consideration. They can not be neglected. He must have food and clothing, the means of combating disease, the means of transportation, the means of producing heat, and a great variety of things that contribute to his bodily comfort and gratify his esthetic desires. It is not my purpose to attempt to deal with all of these and to show how science is helping to work out the problems suggested. I shall have to content myself by putting out a few of the more important problems, the solution of which depends upon the prosecution of scientific research.

THE FOOD PROBLEM.

Whatever views one may hold in regard to that which has come to be called "race suicide," it appears that the population of the world is increasing rapidly. The desirable places have been occupied. In some parts of the earth there is such a surplus of population that famines occur from time to time, and in other parts epidemics and floods relieve the embarrassment. We may fairly look forward to the time when the whole earth will be overpopulated unless the production of food becomes more scientific than it now is. Here is the field for the work of the agricultural chemist who is showing us how to increase the yield from a given area, and, in case of poor and worn-out soils, how to preserve and increase their fertility. It appears

that the methods of cultivating the soil are still comparatively crude, and more and more thorough investigation of the processes involved in the growth of plants is called for. Much has been learned since Liebig founded the science of agricultural chemistry. It was he who pointed out some of the ways by which it is possible to increase the fertility of a soil. Since the results of his investigations were given to the world, the use of artificial fertilizers has become more and more general.

But it is one thing to know that artificial fertilizers are useful, and it is quite another thing to get them. At first bone dust and guano were chiefly used. Then as these became dearer, phosphates or potassium salts from the mineral kingdom came into use. At the Fifth International Congress for Applied Chemistry, held at Berlin, Germany, last June, Dr. Adolph Frank, of Charlottenburg, gave an extremely interesting address on the subject of the use of the nitrogen of the atmosphere for agriculture and the industries, which bears upon the problem that we are dealing with. Plants must have nitrogen. At present this is obtained from great beds of saltpeter found on the west coast of South America—the so-called Chili saltpeter—and also from the ammonia obtained as a by-product in the distillation of coal, especially in the manufacture of coke. The use of Chili saltpeter for agricultural purposes began about 1860. In 1900 the quantity exported was 1,453,000 tons, valued at about \$60,000,000. In the same year the world's production of ammonium sulfate was about 500,000 tons, valued at somewhat more than \$20,000,000. Of these enormous quantities, about three-quarters finds application in agriculture. The use of these substances, especially of saltpeter, is increasing rapidly. At present it seems that the successful cultivation of the soil is dependent upon the use of nitrates, and the supply of nitrates is limited. Unless something is done, we may look forward to the time when the earth, for lack of proper fertilizers, will not be able to produce as much as it now does, and meanwhile the demand for food is increasing. According to the most reliable estimations, the saltpeter-beds will be exhausted in thirty or forty years. Is there a way out? Dr. Frank shows us there is. In the air there is nitrogen enough for all. The plants can make only a limited use of this directly. For the most part, it must be in some form of chemical combination as, for example, a nitrate or ammonia. The conversion of atmospheric nitrogen into nitric acid would solve the problem, and this is now being carried out. But Dr. Frank shows that there is another, perhaps more economical, way of getting the nitrogen into a form suitable for plant-food. Calcium carbide can now be made without difficulty and is made in enormous quantities by the action of a powerful electric current upon a mixture of coal and lime. This substance has the power of absorbing nitrogen from the air, and the product thus formed appears to be capable of giving up its nitrogen to plants, or, in other words, to be a good fertilizer. It is true that this subject requires further investigation, but the results thus far obtained are full of promise. If the outcome should be what we have reason to hope it will be, we may regard the approaching exhaustion of the saltpeter-beds with equanimity. But, even without this to pin our faith to, we have the preparation of nitric acid from the nitrogen and oxygen of the air to fall back upon.

While speaking of the food problem, let me say a few words in regard to the artificial preparation of foodstuffs. I am sorry to say that there is not much of promise to report upon in this connection. In spite of the brilliant achievements of chemists in the field of synthesis, it remains true that thus far they have not been able to make, except in very small quantities, substances that are useful as foods, and there is absolutely no prospect of this result being reached within a reasonable time. A few years ago Berthelot told us of a dream he had had. This has to do with the results that, according to Berthelot, are to be brought about by the advance of chemistry. The results of investigations already accomplished indicate that, in the future, methods will perhaps be devised for the artificial preparation of food from the water and carbonic acid, so abundantly supplied by nature. Agriculture will then become unnecessary, and the landscape will not be disfigured by crops growing in geometrical figures. Water will be obtained from holes three or four miles deep in the



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PATENTS.
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Manuscript of this most valuable paper is received accompanied by the following note from J. E. Nelson, of Riley County, Kansas:
"I would like to have you publish the enclosed paper written by President Ira Remsen, of Johns Hopkins University. I think it would be of interest to every reader of your paper. I am a reader of THE KANSAS FARMER, and I consider it the best farm paper in the West. I think every farmer in the West should take it."

earth, and this water will be above the boiling temperature, so that it can be used as a source of energy. It will be obtained in liquid form after it has undergone a process of natural distillation, which will free it from all impurities, including, of course, disease germs. The foods prepared by artificial methods will also be free from microbes, and there will consequently be less disease than at present. Further, the necessity for killing animals for food will no longer exist, and mankind will become gentler and more amenable to higher influences. There is, no doubt, much that is fascinating in this line of thought, but whether it is worth following, depends upon the fundamental assumption. Is it at all probable that chemists will ever be able to devise methods for the artificial preparation of foodstuffs? I can only say that to me it does not appear probable in the light of the results thus far obtained. I do not mean to question the probability of the ultimate synthesis of some of those substances that are of value as foods. This has already been accomplished on the small scale, but for the most part the synthetical processes employed have involved the use of substances which themselves are the products of natural processes. Thus, the fats can be made, but the substances from which they are made are generally obtained from nature and are not themselves synthetical products. Emil Fischer has, to be sure, made very small quantities of sugars of different kinds, but the task of building up a sugar from the raw material furnished by nature—that is to say, from carbonic acid and water—presents such difficulties that it may be said to be practically impossible.

When it comes to starch and the proteids which are other chief constituents of foodstuffs, the difficulties are still greater. There is not a suggestion of the possibility of making starch artificially, and the same is true of the proteids. In this connection it is, however, interesting to note that Emil Fischer, after his remarkable successes in the sugar group and uric-acid group, is now advancing upon the proteids. I have heard it said that at the beginning of his career he made out a program for his lifework. This included the solution of three great problems. These are the determination of the constitution of uric acid, of the sugars, and of the proteids. Two of these problems have been solved. May he be equally successful with the third! Even if he should be able to make a proteid, and show what it is, the problem of the artificial preparation of foodstuffs will not be solved. Indeed, it will hardly be affected.

Although science is not likely, within periods that we may venture to think of, to do away with the necessity of cultivating the soil, it is likely to teach us how to get more out of the soil than we do now, and thus put us in a position to provide for the generations that are to follow us. And this carries with it the thought that, unless scientific investigation is kept up, these coming generations will be unprovided for. Another way by which the food supply of the world can be increased is by relieving tracts of land that are now used for other purposes than the cultivation of foodstuffs. The most interesting example of this kind is that presented by the cultivation of indigo. There is a large demand for this substance, which is plainly founded upon esthetic desires of a somewhat rudimentary kind. Whatever the cause may be, the demand exists, and immense tracts of land have been and are still devoted to the cultivation of the indigo-plant. Within the past few years scientific investigation has shown that indigo can be made in the factory from substances, the production of which does not for the most part involve the cultivation of the soil. In 1900, according to the report of Dr. Brunck, managing director of the Badische Anilin- and-Soda Fabrik, the quantity of indigo produced annually in the factory "would require the cultivation of an area of more than a quarter of a million acres of land (390 square miles) in the home of the indigo-plant." Dr. Brunck adds: "The first impression which this fact may be likely to produce is that the manufacture of indigo will cause a terrible calamity to arise in that country, but, perhaps not. If one recalls to mind that India is periodically afflicted with famine, one ought not, without further consideration, to cast aside the hope that it might be good fortune for the country if the immense areas now devoted to a crop which is subject to many vicissitudes and to violent market changes were at last to be given over to the raising of breadstuffs and other

food products. For myself," says Dr. Brunck, "I do not assume to be an impartial adviser in this matter, but, nevertheless, I venture to express my conviction that the government of India will be rendering a very great service if it should support and aid the progress, which will in any case be irresistible, of this impending change in the cultivation of that country, and would support and direct its methodical and rational execution."

SCIENTIFIC INVESTIGATION VS. HEALTH.

The connection between scientific investigation and health is so frequently the subject of discussion that I need not dwell upon it here. The discovery that many diseases are due primarily to action of microscopic organisms that find their way into the body and produce the changes that reveal themselves in definite symptoms is a direct consequence of the study of the phenomenon of alcoholic fermentation by Pasteur. Everything that throws light upon the nature of the action of these microscopic organisms is of value in dealing with the great problem of combating disease. It has been established in a number of cases that they cause the formation of products that act as poisons, and that the diseases are due to the action of these poisons. So also, as is well known, investigation has shown that antidotes to some of these poisons can be produced, and that by means of these antidotes the diseases can be controlled. But more important than this is the discovery of the way in which diseases are transmitted. With this knowledge, it is possible to prevent the diseases. The great fact that the death rate is decreasing stands out prominently and proclaims to humanity the importance of scientific investigation. It is, however, to be noted in this connection that the decrease in the death rate compensates to some extent for the decrease in the birth rate, and that, if an increase in population is a thing to be desired, the investigations in the field of sanitary science are contributing to this result.

The development of the human race is dependent not alone upon a supply of food, but upon a supply of energy in available forms. Heat and mechanical energy are absolutely essential to man. The chief source of the energy that comes into play is fuel. We are primarily dependent upon the coal supply for the continuation of the activities of man. Without this, unless something is to take its place, man is doomed. Statistics in regard to the coal supply and the rate at which it is being used have so frequently been presented by those who have special knowledge of this subject that I need not trouble you with them now. The only object in referring to it is to show that, unless by means of scientific investigation man is taught new methods of rendering the world's store of energy available for the production of heat and of motion, the age of the human race is measured by the extent of the supply of coal and other forms of fuel. By other forms of fuel I mean, of course, wood and oil. Plainly, as the demand for land for the production of foodstuffs increases, the amount available for the production of wood must decrease, so that wood need not be taken into account for the future. In regard to oil, our knowledge is not sufficient to enable us to make predictions of any value. If one of the theories now held in regard to the source of petroleum should prove to be correct, the world would find much consolation in it. According to this theory, petroleum is not likely to be exhausted, for it is constantly being formed by the action of water upon carbides that in all probability exist in practically unlimited quantity in the interior of the earth. If this be true, then the problem of supplying energy may be reduced to one of transportation of oil. If given a supply of oil, of course, the problem of transportation is solved.

What are the other practical sources of energy? The most important is the fall of water. This is being utilized more and more year by year since the methods of producing electric currents by means of the dynamo have been worked out. There is plainly much to be learned before the energy made available in the immediate neighborhood of the waterfall can be transported long distances economically, but advances are being made in this line, and already factories that have hitherto been dependent upon coal are making use of the energy derived from waterfalls. The more rapidly these take place, the less will be the demand for coal, and if there were enough waterfalls conveniently situated, there would be no difficulty in furnishing all

the energy needed by man for heat or for motion.

It is a fortunate thing that, as the population of the earth increases, man's tastes become more complex. If only the simplest tastes prevailed, only the simplest occupations would be called for. But let us not lose time in idle speculations as to the way this primitive condition of things would affect man's progress. As a matter of fact, his tastes are becoming more complex. Things that are not dreamed of in one generation become the necessities of the next generation. Many of these things are the direct results of scientific investigation. No end of examples will suggest themselves. Let me content myself by reference to one that has of late been the subject of much discussion. The development of the artificial dye-stuff industries is extremely instructive in many ways. The development has been the direct result of the scientific investigation of things that seemed to have little, if anything to do with this world. Many thousands of workmen are now employed, and many millions of dollars are invested, in manufacture of dye-stuffs that were unknown a few years ago. Here plainly the fundamental fact is the esthetic desire of man for colors. A colorless world would be unbearable to him. Nature accustoms him to color in a great variety of combinations, and it becomes a necessity to him. And his desires increase as they are gratified. There seems to be no end to development in this line. At all events, the data at our disposal justify the conclusion that there will be a demand for every dye that combines the qualities of beauty and durability. Thousands of scientifically trained men are engaged in work in the effort to discover new dyes to meet the increasing demands. New industries are springing up, and many find employment in them. As a rule, the increased demand for labor caused by the establishment of these industries is not offset by the closing up of other industries. Certainly it is true that scientific investigation has created large demands for labor that could hardly find employment without these demands.

The welfare of a nation depends to a large extent upon the success of its industries. In his address as president of the British Association for the Advancement of Science, given last summer, Sir Norman Lockyer quotes Mr. Chamberlain thus: "I do not think it is necessary for me to say anything as to the urgency and necessity of scientific training. It is not too much to say that the existence of this country, as the great commercial nation, depends upon it. . . . It depends very much upon what we are doing now, at the beginning of the twentieth century, whether at its end we shall continue to maintain our supremacy or even equality with our great commercial and manufacturing rivals." In another part of his address Sir Norman Lockyer says: "Further, I am told that the sum of 24,000,000 pounds is less than half the amount by which Germany is yearly enriched by having improved upon our chemical industries, owing to our lack of scientific training. Many other industries have been attacked in the same way since, but taking this one instance alone, if we had spent this money fifty years ago, when the Prince Consort first called attention to our backwardness, the nation would now be much richer than it is, and would have much less to fear from competition."

INTELLECTUAL RESULTS OF SCIENTIFIC INVESTIGATION.

But enough on the purely material side. Let us turn to the intellectual results of scientific investigation. This part of our subject might be summed up in a few words. It is so obvious that the intellectual condition of mankind is a direct result of scientific investigation that one hesitates to make the statement. The mind of man can not carry him much in advance of his knowledge of the facts. Intellectual gains can be made only by discoveries, and discoveries can be made only by investigation. One generation differs from another in the way it looks at the world. A generation that thinks the earth is the center of the universe differs intellectually from one that has learned the true position of the earth in the solar system, and the general relations of the solar system to other similar systems that make up the universe. A generation that sees in every species of animal and plant evidence of a special creative act differs from one that has recognized the general truth of the conception of evolution. And so in every department of knowledge, the great generalizations that have been reached through the

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persistent efforts of scientific investigators are the intellectual gains that have resulted. These great generalizations measure the intellectual wealth of mankind. They are the foundations of all profitable thought. While the generalizations of science belong to the world, not all the world takes advantage of its opportunities. Nation differs from nation intellectually as individual differs from individual. It is not, however, the possession of knowledge that makes the efficient individual and the efficient nation. It is well known that an individual may be very learned and at the same time very inefficient. The question is, what use does he make of his knowledge? When we speak of intellectual results of scientific investigation, we mean not only accumulated knowledge, but the way in which this knowledge is invested. A man who simply accumulates money and does not see to it that this money is carefully invested is a miser, and no large results can come from his efforts. While, then, the intellectual state of a nation is measured partly by the extent to which it has taken possession of the generalizations that belong to the world, it is also measured by the extent to which the methods by which knowledge is accumulated have been brought into requisition and have become a part of the equipment of the people of that nation. The intellectual progress of a nation depends upon the adoption of scientific methods in dealing with intellectual problems. The scientific method is applicable to all kinds of intellectual problems. We need it in every department of activity. I have sometimes wondered what the results would be if the scientific method could be employed in all the manifold problems connected with the management of a government. Questions of tariff, of finance, of international relations would be dealt with much more satisfactorily than at present if the spirit of the scientific method were breathed into those who are called upon to deal with these questions. It is plain, I think, that the higher the intellectual state of a nation, the better will it deal with all the problems that present themselves. As the intellectual state is a direct result of scientific investigation, it is clear that the nation that adopts the scientific method will in the end outrank, both intellectually and industrially, the nation that does not.

What are the ethical results of scientific investigation? No one can tell. There is one thought that in this connection I should like to impress upon you. The fundamental characteristic of the scientific method is honesty. In dealing with any question, science asks no favors. The sole object is to learn the truth, and to be guided by the truth. Absolute accuracy, absolute fidelity, absolute honesty are the prime conditions of scientific progress. I believe that the constant use of the scientific method must in the end leave its impress upon him who uses it. The results will not be satisfactory in all cases, but the tendency will be in the right direction. A life spent in accordance with scientific teachings would be of a high order. It would practically conform to the teachings of the highest types of religion. The motives would be practically identical. I need not enlarge upon this subject. Unfortunately, abstract truth and knowledge of fact and of the conclusions to be drawn from them do not at present furnish a sufficient basis for right living in the case of the great majority of mankind, and science can not now, and I do not believe it ever can, take the place of religion in some form. When the feeling that the two are antagonistic wears away, as it is wearing away, it will no doubt be seen that one supplements the other, in so far as they have to do with the conduct of man.

GROWTH OF THE MOVEMENT FOR SCIENTIFIC INVESTIGATION.

What are we doing in this country to encourage scientific investigation? Not until about a quarter of a century ago can it be said that it met with any encouragement. Since then there has been a great change. Up to that time research was sporadic. Soon after it became almost epidemic. The direct cause of the change was the establishing of courses in our universities for the training of investigators somewhat upon the lines followed in the German universities. In these courses the carrying out of an investigation plays an important part. This is, in fact, the culmination of the course. At first there were not many following these courses, but it was not long before there was a demand for the product. Those who could present evidence that they had followed such courses were generally given the pref-

erence. This was especially true in the case of appointments in the colleges, some colleges even going so far as to decline to appoint any one who had not taken the degree of doctor of philosophy, which is the badge of the course that involves investigation. As the demand for those who had received this training increased, the number of those seeking it increased at least in the same proportion. New universities were established and old ones caught the spirit of the new movement, until from one end of the country to the other, centers of scientific activity are now found, and the amount of research work that is done is enormous compared with what was done twenty-five or thirty years ago. Many of those who get a taste of the work of investigation become fascinated by it and are anxious to devote their lives to it. At present, with the facilities for such work available, it seems probable that most of those who have a strong desire and the necessary industry and ability to follow it will find their opportunity somewhere. There is little danger of our losing a genius or even one with fair talent. The world is on the lookout for them. The demand for those who can do good research work is greater than the supply. To be sure the material rewards are not as a rule as great as those that are likely to be won by the ablest members of some other professions and occupations, and as long as this condition of affairs continues to exist, there will not be as many men of the highest intellectual order engaged in this work as we should like to see. On the other hand, when we consider the great progress that has been made during the last twenty-five years or so, we have every reason to take a cheerful view of the future. If as much progress should be made in the next quarter century, we shall, to say the least, be able to compete with the foremost nations of the world in scientific investigation. In my opinion, this progress is largely dependent upon the development of our universities. Without the opportunities for training in the methods of scientific investigation, there will be but few investigators. It is necessary to have a large number in order that the principle of selection may operate. In this line of work, as in others, many are called, but few are chosen.

Another fact that is working advantageously to increase the amount of scientific research done in this country is the support given by the Government in its different scientific bureaus. The Geological Survey, the National Bureau of Standards, and other departments are carrying on a large amount of excellent scientific work, and thus helping most efficiently to spread the scientific spirit throughout the land. Finally, two exceedingly interesting experiments in the way of encouraging scientific investigation are now attracting the attention of the world. I mean, of course, the Carnegie Institution, with its endowment of \$10,000,000, and the Rockefeller Institute, devoted to investigations in the field of medicine, which will no doubt be adequately endowed. It is too early to express an opinion in regard to the influence of these great foundations upon the progress of scientific investigation. As both will make possible the carrying out of many investigations that would otherwise probably not be carried out, the chances of achieving valuable results are not at once of a striking character, and it is possible that they will be tempted to change the method of applying the money before those who are using it have had a fair chance. But we who are on the outside know little of the plans of those who are inside. All signs indicate that they are making an earnest effort to solve an exceedingly difficult problem, and all who have the opportunity should do everything in their power to aid them.

In the changes which have been brought about in the condition of science in this country since 1848, it is safe to say that association has either directly or indirectly played a leading part. It is certain that for the labors of scientific men, increased facilities and a wider usefulness have been procured.

For Twenty-Five Years a Matchless Cure for Spavin.

Wlarton, Ont., February 1, 1906.
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Yours,
T. Scott.

Agriculture

Winter Barley Now a Reality.

EDITOR KANSAS FARMER:—I have just now read a short editorial in your issue of July 5, referring to the work of our Department carried on by Mr. L. A. Fitz and myself, at McPherson. We appreciate very much such words of commendation as are there given, as, coming from such a source, it is evidence that something good is being done. It is not proper, however, that the part taken by other parties should be overlooked, and I wish to correct the impression that will necessarily result from reading your statements to the effect that we are alone in the experimental work being carried on at McPherson. This work is being done in complete cooperation with the Kansas State Agricultural Experiment Station. They are constantly furnishing a practical equivalent financially in the way of rent of land, erecting seed buildings, and in the purchase of machinery and other apparatus, besides taking direct part personally in the work.

At this point, I wish to emphasize the importance of many of the results being obtained at this station, and would suggest that the farmers of the State and others who are interested should visit this experiment station and take advantage of any other means through publications or otherwise of getting the benefits of the results of these experiments. The work has now been carried on three years. One most important feature of the work is the complete establishment of winter barley as a dependable crop in Kansas. From McPherson the barley has been distributed to a number of other points in the State, and, after several years of trial, there is no question that winter barley can be successfully grown, which means an average increase in yield per acre of the barley-crop of ten to fifteen bushels, besides the great advantage in certain seasons of the fall pasturage.

M. A. CARLETON,
Cerealist Department of Agriculture,
Washington, D. C.

Caring for Farm Implements.

EDITOR KANSAS FARMER:—The good advice contained in the "Old Reliable" is of great benefit to us as farmers, and I value the articles of Professor TenEyck above all.

It is now about time to say something about the binder in the fence corner. Many have advocated the building of lumber houses for iron or steel farm-implements. I have often read this good-intended advice, and wondered in what line of business the writer was employed, if at all. I will tell you what I have done with my binder, and if any one is profited thereby or can bring out a better method, my feeble effort is repaid. I take off real arms, roll the canvasses together and hang expanded from a wire to keep mice from getting into the center to build a nest. I give all the rollers and other wood a good coat of thin paint. I stand the binder some place out of the way where nothing will molest it. If some good axle grease is put on a rag and tied about the nutter and point of needle, it will prevent rusting and will go off all right from the first start the next year. I fail to see where it will pay to build high-priced lumber sheds to store away a mower, rake, plows, harrows, or anything in the line of farm-machinery, which is now made almost exclusively of steel, but use liberally of axle grease or other easily removed grease on tools that want to be kept bright.

J. P. ANDERSON,
Republic County.

Experience of Small Farmers Wanted.

EDITOR KANSAS FARMER:—I would like to read articles from men who have been successful on small farms, telling the smallest number of cattle and hogs, and the amount of corn, oats, and clover that one man can care for at a profit, where the rent is \$3 per acre, where the small grain is to have clover harrowed into it in the spring, and where the haying, harvesting, and thrashing are done by exchanging work. Part of the corn is to be cut and fed on the place, all the manure hauled to the field, and time allowed to find and destroy noxious weeds, pick seed-corn, fan small grain for seed and treat it for smut, cut wood a year in advance so it will be dry, grease harness, trim the horses' feet, repaint implements, fix fences, do a little work in the garden, take 13 days off besides 52 Sundays, rise not earlier

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than 5 o'clock, turn the wheels in the field not more than 10 hours, and do the evening chores in less than 1 hour. I believe no article along that line has appeared, and I venture to suggest that such an article might be very helpful to young farmers who now think that they are not in it unless they have a hired man. The farmer who does his own work as he wants it done is surer of a home than some of us who are renting large farms, hiring men, paying interest and rent. The man who really owns a few acres and a few head of stock surely enjoys life better than the tenant who has no right to feel attached to a place, even if he has paid from \$3,000 to \$10,000 for living there, as some of us have done.

I take a number of first-class farm papers, and I know the general advice is to get the young farmer to hire help and to take a long lease of a farm. But as far as I have been able to find out, the advisers are rich men who have more land than they can work, and want some steady young men to make them richer. If the young men knew how to make a good living and a reasonable amount of profit on a small farm, there would be more happy homes and better citizens. I view this subject from three standpoints: as a landlord of a small farm; as my parents' tenant; and as my aunt's agent. I expect to continue as a tenant only because the farm is in the family. Under any other circumstances, I would rest under my own grape-vine and apple-tree. I hope you will invite articles from farmers on small farms. CHAS. A. BABBITT. Brown County.

Horticulture

Borer in Elm-Trees.

If you can give me any information as to the following, I will be very much obliged to you. A great many elm-trees here have recently died, and no one is able to give any cause for or to prescribe any remedy. I will give you the symptoms of one in front of my house as a sample. About two weeks ago I noticed a very sudden, heavy fall of leaves from this tree, most of which were small and had turned yellow. There were also some large green leaves left, but all that fell were curled up and did not lay flat as they should. The following day I noticed that the whole foliage had turned a lighter green than it should be, and that the whole tree presented a sort of withered appearance. I at once turned my hose loose on the ground about the roots, and ran it wide open till the ground would not take up any more water. In fact, I ran it nine hours without stopping. During the succeeding two or three days, the tree seemed to revive a little, but it has drooped again and the sickly green color of the leaves still remains. As we have lost one or two trees in the vicinity from a worm which seemed to encircle the trees and loosen the bark, I thought this worm might be the trouble in the case mentioned, so I carefully sounded the bark as high as I could reach, but was unable to detect any loose places whatever. As I am anxious to save the tree and am wholly at a loss to know what to do to that end, I would respectfully ask if you can give me any advice on the subject from my brief description. If you can do so, it will be very thankfully received. GEO. C. BRADLEY. Douglas County.

It is not possible to give exact information as to the cause of the death of your elm-trees on the description given, but it is very probable that the injury is due to the presence of a destructive borer which I know from other complaints from your city, accompanied by specimens, to be at work there. I have had no opportunity to determine the species of this borer as only the grubs were sent, and they were dead on receipt, so that I could not rear them to the adult. They are undoubtedly Cerambycidae, however, belonging to the same family as the well-known round-headed apple-borer, and like that species do not confine their attacks to the bark, but often burrow much deeper, coming out finally through elliptical openings through the bark, made by the grub just before final transformation. Their attacks are not confined, as in the apple-borer, to the collar of the tree, but they deposit eggs in the bark anywhere on the trunk and larger branches. This borer is a very difficult subject to treat, on account of the wide surface attacked, rendering it impossible to find all borers before deep penetration, and mak-

ing it a tedious proceeding to protect the trees by repellent washes as may be done profitably with other borers. The washes found valuable in case of other borers may have a base of any strongly alkaline soap, among which I should especially recommend the trial of a caustic potash fish-oil soap, a strong solution of which should be applied by spray or brush over the entire body of the tree to be protected. The object of this wash is not to kill the borers within, as it can not reach them in their deep burrows, but to drive away the mother beetle at the time of egg deposit, which must be ascertained for each species by observation. It is likely that the beetles will appear all through May and June, and perhaps through part of July, hence the method of using repellents becomes often more tedious than profitable.

Dr. Forbes, of Illinois, who treats this insect in his third report, considers that the only thing to be done in case of a general prevalence of the borer in a locality, especially among the shade-trees in a town, is to cut out and burn all infested trees during the latter part of summer, when the pests are in the larval state in the trees. To make this effective, however, it should be seen to that the work is thoroughly done, as neglect on the part of a few will render useless the work of others. His description of the behavior of affected trees compares closely with your own, and confirms my opinion that the pest at work in your trees is the Elm Saperda, which he bred from his specimens. The fact that you do not detect the presence of the grubs under the bark by sounding it or tapping upon it does not make it certain that you will not find them by digging for them. Try the latter and report.

The only insect that I have found killing or weakening shade-trees without visible or at least readily discoverable evidence of its presence is the white ant, which confines its attacks to the roots well below the surface. On the college grounds here I find this pest at work on the soft maple planted on dry soil, and while the tree does not look healthy, the leaves are retained, showing, however, a yellow under-sized growth for some time before the end. I do not think it likely that it is the white ant that is damaging your trees. E. A. POPENOE.

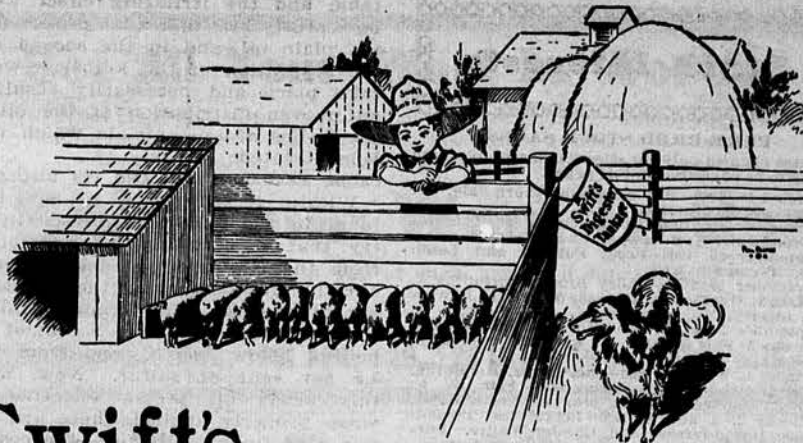
Apple-Trees Dying.—Borers in Peach-Trees.

About four years ago I set out an apple and peach orchard, and am having some trouble with the trees at this time. The apple-trees blighted some last year and this year failed to leaf out. On examination, I find the roots rotten, but no sign of borers. These apple-trees made fine growth until this happened to them. The peach-trees are full of borers just at the top of the ground. Can you tell me what to do to stop the apple-trees dying and to kill the borers in the peach-trees? Harvey County. J. C. K.

While it can not be determined without direct examination by one acquainted with the disease, the mode of death you describe renders it possible that your apple-trees have died through the effects of the crown gall on the roots. This disease is of comparatively recent recognition in its true importance, though now every apple-grower can recall cases of the disease occurring years ago in his orchard. This crown gall is so named from the appearance of the abnormal growth induced at the collar of the tree by the presence of a parasitic organism operating in the cambium or vital layer of cells between bark and wood. The gall appears as an irregular, infolded callous mass, varying in size from that of half a wheat grain to that of a man's head, according to place and age of the growth. The effect of a small gall is unnoticeable in regard to the vigor of the tree, but the presence of the larger ones acts directly to starve the roots below, causing them to rot as described. In examination made this spring among the trees of large orchards, I have found evidence of the presence of old galls of this type on almost every tree that has fallen over in soft soil, or has died standing. I think it much more widely spread and destructive than has been suspected by the most of our orchardists.

In most cases, I believe that this gall has been brought to the orchard from the nursery on the tree that it has finally killed. The parasite commonly gains hold on the tree in the nursery, though it is not proven that it may not originate on trees at first sound. I have seen well-developed galls on yearling trees, and in some seasons a considerable number of two-

(Continued on page 783.)



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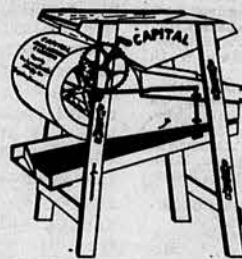
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JUST ISSUED

Farm Grasses of the United States

By W. J. SPILLMAN

Agrostologist, U. S. Department of Agriculture

An intensely practical discussion of the farm grasses of the United States of America is presented in this volume. It is essentially a resume of the experience of American farmers with grasses, and it is safe to say that no other work has covered the ground so thoroughly. No attempt has been made to give a connected account of all the grasses known in this country, but the aim has been rather to give just the information which a farmer wants about all those grasses that have an actual standing on American farms. The whole subject is considered entirely from the standpoint of the farmer. One of the most valuable features of the book is the maps showing, at a glance, the distribution of this important grass in the United States; and the reasons for the peculiarities in its distribution are fully brought out. The principal chapters treat on the grass crop-tures, the seed and its impurities; the bluegrasses; millets; southern grasses; red-top and orchard grass; brome grasses; grasses for special conditions; haying machinery and implements; insects and fungi injurious to grasses, etc., etc. The methods followed on some pre-eminent successful farms are described in detail, and their application to grass lands throughout the country is discussed. The discussion of each grass is proportional to its importance on American farms. This book represents the judgment of a farmer of long experience and wide observations regarding the plan in agriculture of every grass of any importance in American farming. In its preparation its use as a text book in schools as well as a manual of reference for the actual farmer has constantly been kept in mind. The book is most conveniently arranged and splendidly indexed, so that the reader may find any subject at a glance. Illustrated, 6x7 inches. 288 pages. Cloth. Price, postpaid, \$1.00.

KANSAS FARMER COMPANY

TOPEKA,

KANSAS

Stock Interests

PURE-BRED STOCK SALES.

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

- August 15, 1906—Maple Hill Shorthorn Sale. H. C. Duncan, Osborne, Mo.
- September 20, 1906—Duroc-Jerseys at Hutchinson State Fair, N. B. Sawyer, Cherryvale, Kans.
- September 24, 1906—Peck, Putman and Lamb Bros. Tecumseh, Neb.
- September 25, 1906—Valley Brook Shorthorns, J. J. Mason, Overbrook, Kansas, owner, T. J. Wornall, Liberty, Mo., Manager.
- September 25, 26, 27, 1906—Hope Agricultural and Live Stock Fair & Sale. H. K. Little, Secretary, Hope, Kans.
- October 2, 3 and 4, 1906—Shorthorns, Herefords, Angus and Galloways. During State Fair. W. F. Hurlbut, Manager, Sedalia, Mo. Entries solicited.
- October 2, 3 and 4, 1906—Berkshires, Poland-Chinas, Duroc-Jerseys and Chester-Whites. During State Fair. W. F. Hurlbut, Manager, Sedalia, Mo. Entries solicited.
- October 2-3-4-5, 1906—Glasco Live Stock Association sale of pure-bred stock, Glasco, Kans.
- October 10, 1906—H. L. Faulkner, Jamesport, Mo.
- October 11, 1906—American Galloway Breeders' Association Combination Sale, Kansas City, Mo.
- October 17, 1906—W. J. Honeyman, Madison, Kans.
- October 17, 1906—Poland-Chinas, W. A. Prullitt, Asherville, Kans.
- October 18, 1906—East Lynn Herefords, Will H. Rhodes, Tampa, Kans.
- October 18, 1906—Choice Duroc-Jerseys. C. A. Wright, Rosendale, Mo.
- October 18, 1906—Poland-Chinas, W. A. Davidson, Simpson, Kans.
- October 20, 1906—W. R. Dowling, Norcatur, Kans.
- October 22-24, 1906—E. A. Eagle & Sons, Agrioola, Kans.
- October 24, 1906—Poland-Chinas, Frank A. Dawley Waldo, Kans.
- October 25, 1906—D. W. Dingman, Clay Center, Kans., Poland-Chinas.
- October 25, 1906—Poland-Chinas. T. J. Triggs, Dawson, Neb.
- October 25, 1906—Poland-Chinas. O. W. Stalder, Salem, Neb.
- October 27, 1906—Poland-Chinas. Chas. A. Lewis, Beatrice, Neb.
- October 28, 1906—Jno. W. Jones & Son, Concordia, Duroc-Jerseys.
- October 30, 1906—Leon Calhoun's sale of Poland-Chinas at Atchison, Kans.
- October 31, 1906—Poland-Chinas. O. B. Smith, Cuba, Kans.
- November 1, 1906—Poland-Chinas. Carl Jensen & Sons, Belleville, Kans.
- November 1, 1906—Frank Zimmerman, Centerville, Kans.
- November 1 and 2, 1906—Herefords and Shorthorns, Kansas City, Mo., W. C. McAvock, Mgr., Springfield, Ill.
- November 4, 7, 8, 1906—Sale of all beef breeds, Kansas City Sale Pavilion, R. A. Ford, Lawson, Mo., Manager.
- November 8, 1906—T. P. Sheehy, Hume, Mo.
- November 13, 1906—Howard Reed, Frankfort, Kans.
- November 14, 1906—Poland-Chinas. F. R. Barrett, Cadmus, Neb.
- November 16, 1906—G. M. Heberd, Peck, Kans.
- November 20-23, 1906—Blue Ribbon sale of all beef breeds, D. R. Mills, Mgr., Des Moines, Iowa.
- November 27, 1906—L. C. Caldwell, Moran, Kans.
- December 4, 1906—Poland-Chinas, Lemon Ford, Minneapolis, Kans.
- December 6, 1906—American Galloway Breeders' Association Combination Sale, Chicago, Ill.
- December 11-12, 1906—James A. Funkhouser and Charles W. Armour, sale pavilion, Kansas City.
- Jan. 17, 18 and 19, 1907—Shorthorns, Aberdeen-Angus and Herefords, South Omaha, Neb., W. C. McAvock, Mgr., Springfield, Ill.
- Improved Stock Breeders' Association of the Wheat Belt—November 13, 14, 15, 1906, at Arkansas City, Kans. J. E. Knox, Nardin, O. T., manager; Dec. 5, 6, 7, 1906, at Anthony, Kans., Chas. M. Johnson, Caldwell, Kans., manager; Dec. 13, 14, 1906, at Wichita, Kans., J. C. Larrimer, Derby, Kans., manager; Feb. 13, 14, 15, 1907, at Caldwell, Kans., Chas. M. Johnson, Caldwell, Kans., manager.
- February 19, 1907—Jno. W. Jones & Son, Concordia, Duroc-Jerseys.
- April 3, 4 and 5, 1907—Herefords, Aberdeen-Angus and Shorthorns, Kansas City, Mo., W. C. McAvock, Mgr., Springfield, Ill.
- May 1, 2 and 3, 1907—Aberdeen-Angus, Shorthorns and Herefords, South Omaha, Neb., W. C. McAvock, Mgr., Springfield, Ill.

The Preparations of Emulsions of Crude Petroleum.

T. M. PRICE, PH. D., BIOCHEMIC DIVISION, BUREAU OF ANIMAL INDUSTRY, FORMER METHODS.

Kerosene has long been recognized as a most efficient insecticide, but its irritating action, as well as the very considerable cost involved, has prevented the use of the pure oil as a local application in the various parasitic skin diseases of animals.

In order to overcome these objections, various expedients have been resorted to, all of which had for their object the dilution or emulsification of the kerosene. Probably the best-known and most generally employed method for accomplishing this result is that which is based upon the use of soap as an emulsifying agent. The formula which is used almost universally for making the kerosene-soap emulsion is as follows:

- Kerosene, gallons. 2
- Water, gallon. 1
- Hard soap, pound. 1/2

The soap is dissolved in the water with the aid of heat, and while this solution is still hot the kerosene is added and the whole agitated vigorously. The smooth, white mixture which is obtained in this way is diluted, before use, with sufficient water to make a total volume of 20 gallons, and is usually applied to the skin of animals or to trees or other plants by means of a spray-pump. This method of application is used because the diluted emulsion separates quite rapidly, and some mechanical device, such as a self-mixing spray-pump, is required to keep the oil in suspension.

It will be readily understood that this emulsion would not be well adapted either for use as a dip or for application by hand, for in the one case the oil, which rapidly rises to the surface, would adhere to the animals when they emerged from the dipping-

tank, and the irritating effect would be scarcely less than that produced by the plain oil, and in the second case the separation of the kerosene would take place and necessarily result in an uneven distribution of the oil on the bodies of the animals which were being treated.

CRUDE BEAUMONT OIL AND ITS EMULSION.

Within recent years it has been found by the Bureau of Animal Industry that a certain crude petroleum from the Beaumont oil-fields is quite effective for destroying the Texas fever cattle-ticks. This crude petroleum contains from 40 to 50 per cent of oils boiling below 300° C. and from 1 to 1.5 per cent of sulfur. Now, while this crude oil is an effective dip when properly applied, there are certain objections to its use—the cost of the oil when it is necessary to ship long distances, and the occasional injury to cattle which follows its use.

In order to overcome these objections and thereby permit the use of the oil in cases of cattle-mange and sheep-scab, as well as for destroying the Texas fever cattle-ticks, experiments were undertaken looking to the preparation of an emulsion of the Beaumont crude-oil for the uses just indicated.

As will be inferred, the reason for preparing an emulsion of Beaumont crude petroleum was to enable the Bureau to determine whether or not the diluted oil would prove to be as efficacious as the pure oil, for if an emulsion was found to be satisfactory, the injurious effects which occasionally follow the use of the pure oil could probably be done away with, and, in addition, the cost attending the use of Beaumont oil would be greatly reduced.

There were two properties which seemed to be essential for any emulsion which was to be used as a dip, or which was to be applied by hand. First, the concentrated form of the emulsion should remain uniform indefinitely, this being necessary because the emulsion probably could not always be used immediately after its preparation, and under such circumstances, if the oil and water should separate upon standing, different portions removed from the stock emulsion would vary in composition; second, the oil should not separate rapidly from the water after dilution of the concentrated emulsion, as is the case with the ordinary kerosene emulsion. Without this property the diluted emulsion would possess no advantage over a layer of oil on water, for the animals would take out each time practically the same quantity of oil, the irritating effects would be practically the same, and in addition it is doubtful whether the oil would be evenly distributed over the body of the animal.

A SATISFACTORY EMULSION OF BEAUMONT OIL.

The first trials with the kerosene emulsion formula given above showed that, although the Beaumont oil could be readily emulsified, the oil and water in the concentrated emulsion always separated upon standing. When this concentrated emulsion was diluted, the oil separated less rapidly than kerosene from a similarly prepared emulsion, but yet more rapidly than seemed desirable for a dip. With the object of eliminating these objectionable features, if possible, a number of modifications of the kerosene emulsion formula were tried by varying the proportion of first one ingredient and then another. After a number of trials of different combinations of crude-oil, soap, and water, the following formula was decided upon as the one best suited to the uses we had in view:

- Crude petroleum, gallons. 2
- Water, gallon. 1 1/2
- Hard soap, pound. 1/2

Dissolve the soap in the water with the aid of heat; to this solution add the crude petroleum, mix with a spray-pump or shake vigorously, and dilute with the desired amount of water. Soft water should, of course, be used. Various forms of hard and soft soaps were tried, but soap with an amount of free alkali equivalent to 0.9 per cent of sodium hydroxide gave the best emulsion. All of the ordinary laundry soaps that were examined were quite satisfactory, but toilet soaps in the main are not suitable.

An emulsion of crude petroleum made according to this modified formula remains fluid and can be easily poured; it will stand indefinitely without any tendency toward a separation of the oil and water, and can be diluted in any proportion with cold soft water. After sufficient dilution to produce a 10-per-cent emulsion, a number of hours are required for all of the oil to rise to the surface, but if the mixture is agitated occasionally, no separation takes place. After long

standing, the oil separates in the form of a cream-like layer which is easily mixed with the water again by stirring. It is, therefore, evident that for producing an emulsion which will hold the oil in suspension after dilution, the modified formula meets the desired requirements.

In preparing this emulsion for use in the field, a large spray-pump capable of mixing 25 gallons has been used with perfect success.

In using the formula herewith given, it should be borne in mind that it is recommended especially for the crude petroleum obtained from the Beaumont oil-fields, the composition of which has already been given. As crude petroleum from different sources vary greatly in their composition, it is impracticable to give a formula that can be used with all crude-oils. Nevertheless, crude petroleum from other sources than the Beaumont wells may be emulsified by modifying the formula given above. In order to determine what modification of this formula is necessary for the emulsification of a given oil, the following method may be used:

Dissolve one-half pound of soap in one-half gallon of hot water; to one measure of this soap solution add four measures of the crude petroleum that is to be tested and shake well in a stoppered bottle or flask for several minutes. If the proportions of oil, soap, and water have been used, a perfectly uniform mixture should result when one part of this emulsion is shaken with seven parts of water. If, however, after this dilution there is a separation of a layer of pure oil within half an hour, the emulsion is imperfect, and a modification of the formula will be required. To accomplish this, the proportion of oil should be varied until a good result is obtained.

The object of this paper is to indicate the ease with which crude-oil may be diluted by a process of emulsification, and also to show that the use of such emulsions for dipping or for hand application is entirely feasible. Their value as insecticides can only be determined by means of practical tests. Experiments are already under way with various parasitic skin diseases of animals, and it is hoped that the use of this emulsion may not only lessen the cost of applying the oil, but that the dilution with water and the presence of the soap in the mixture may remove all danger of irritation, which, as has been noted, sometimes follows the use of the pure crude petroleum.

The Tamworth Hog.

E. L. LINDER, CLAY CENTER, KANS.

Tamworth hogs are great rustlers, active, wide-awake, and strong on their legs from the minute they are born. They eat grass and forage in large quantities, are very fond of dry alfalfa hay, and will make a wonderful growth with very little grain. They have been carefully bred to type and color, and selected for mammoth size until now they are the largest at maturity, the best mothers, and the most prolific breed of swine in the world. The Tamworth is a red hog, sometimes dark, usually light, with long nose, very light jowl, ears erect, body very long, legs rather long and very strong. He is a bacon rather than a lard hog, and is famed for his fine quality of lean meat. The Tamworth boar crossed on any of the short, chunky, lard breeds produces a pig that at 10 months old will outweigh pigs of the same age belonging to the lard breeds from thirty to fifty pounds. Reversing the order, the Tamworth sow will raise two pigs to the lard sow's one. They are very careful mothers and give a very great quantity of milk. There is no trouble in farrowing, because the pigs have a very light jowl, and they are strong and active from the minute they are born.

In the Buffalo Review, of August 17, 1899, is recorded the killing in England of a Tamworth boar under 3 years of age, weighing alive 1,607 pounds, and dressed 1,330 pounds. As to the amount of pork produced for the feed consumed, experiments, as we will mention later, are satisfactory; as to the Tamworth being of different type from the American breeds of swine, we are glad to say it is so; if he was the same, we should have no use for him. There certainly should be no objection to the breed because he is not American, and the importations from England to Canada and the United States of the various other breeds of live stock show conclusively that such an objection would have no foundation. A prominent breeder and writer from Ohio bewails the time when the bacon hog will have fixed his stamp on the

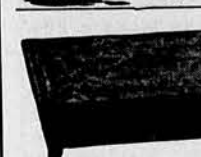
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American hog, but might it not be just as well to submit to the inevitable gracefully as to kick because some one is breeding another kind of stock than yours?

CROSS-BREEDING.

The Tamworth is prepotent enough to stamp his type on whatever breed he is crossed with. As to whether the cross is so ruinous as this article would lead one to believe, the experience of a Mr. Cook, of Iowa, a breeder or raiser of Poland-Chinas, may cast some light on the subject.

The cross was with a pure Tamworth boar and Poland-China sows. From 12 Poland-China sows crossed he raised 80 pigs; from 20 sows bred to Poland-China boar, with same care, he raised 40 pigs. The pigs all ran together in a clover-field and were fed a slop made of ground rye and oats. In the fall they were put after feeding cattle, and ran there three or four months, and at the close of the period the cross-breeds weighed 100 pounds the most. They were then put up and fed a month before shipping, and during that time put on fifty pounds of flesh. The cross-breeds weighed, in Chicago, 336 pounds, at 10 months old. Pretty good for "criss-cross" breeding.

We have selected the Tamworth breed on account of their strength, vigor, size, and prolificness.

David Page's Speculation.

"Come over and see the sire of the \$3,000 Berkshire boar, which I have just purchased," was the message received over the phone just as we are going to press, from the well-known breeder, David Page, of North Topeka.

In another place in this paper is a notice of the sensational sale of Lord Bacon for \$3,000, sold to F. W. Morgan, of Beloit, Wis., by the breeder, James Quorollo, Independence, Mo. Following this important announcement of the record price for a Berkshire boar was the message that the sire of Lord Bacon, Speculation 80081, had been purchased by shrewd David Page, of North Topeka, a young breeder and fancier of Berkshires. Mr. Page purchased Speculation from J. F. Hurst, Valley Falls, Kans., who bought him from the breeder, James Quorollo, at public sale in December, 1904.

Mr. Page will use Speculation at the head of his herd. This herd-header was sired by the famous Masterpiece 77000 and he by Black Robin Hood and out of Duchess 221st 56257, tracing to Imperial Duke and Lord Premier, two famous herd-boars used in the herds of N. H. Gentry and Geo. W. Berry. Speculation's dam was Lady Chumley 69572, by Imp. Lord Chumley, tracing entirely to imported stock. Mr. Page is highly elated with his success in securing Speculation to head his herd. The boar is exceptionally good form for a 3-year-old and is an ideal Berkshire in conformation, and is very smooth and lengthy with splendid quarters and typical head. Mr. Page is to be congratulated on his timely purchase which brings his herd into national prominence at once. Mr. Page also has a young herd-boar, a son of Baron Longfellow 2d 76828, the winner of first in class, reserve grand champion and reserve junior champion at the World's Fair held at St. Louis. Mr. Page will have some announcements in THE KANSAS FARMER regarding some choice things he will have for sale.

A Leading Kansas Poland-China Herd.

The leading Poland-China breeders have come to look upon the Spring Farm Herd of Poland-Chinas, of Howard Reed, of Frankfort, Kans., as headquarters for herd-headers and show sows and gilts—the hard-to-find kind; the kind that have the length, the bone, the feet, the backs, that have size without coarseness; that have finish and quality; as Mr. Reed says they are strictly "Spring Farm type." During a recent visit of one of our field men to look over the herd, he found running on an alfalfa pasture one hundred March and early April pigs that can not be beat in the West; even, smooth, growthy-finished, and coming in a manner that will make them "ringers" for the fall trade and his fall and winter sale.

In adjoining pastures of alfalfa were his fall boars and gilts, fifteen of the former and twenty of the latter. There are certainly great prospects among them for his future customers. One of the boars to which our especial attention was called has been christened Peter Pan, and if he don't get there on the fall fair circuit, it will be no fault of his. He is sired by that great breeding boar, Reed's O. K. 91691, and out of a line-bred Perfection sow called Fritzie Perfection 231044. He has reason to be good on account of his sire and dam and their breeding. He has a litter sister that is not very slow either. There is also among this fall stuff three On and On boars out of a litter sister of the top of Honeyman's fall sale and one gilt. They are all quite promising. Mr. Reed also has a number of tried sows that he will part with, and one tried boar.

Mr. Reed will start an advertisement with us soon and we would advise our patrons to look it up and also future field notes and write him of your wants, mentioning THE FARMER.

A Berkshire Hog Sold for \$3,000.

James Quorollo, Independence, Mo., writes THE KANSAS FARMER, under date of July 23, that he has just sold the Berkshire boar, Lord Bacon 87145, to Mr. F. W. Morgan, Beloit, Wis., for \$3,000, the record price for Berkshires at private sale. Lord Bacon is a

grandson of Masterpiece 77000, which Mr. Quorollo sold two years ago for \$1,000, which was the record price at that time for a Berkshire. But later he was resold for \$2,500 and this record has not been broken until the sale of Lord Bacon to Mr. Morgan. It is certainly a great card for a breeder to be able to hold and maintain the record-breaking price for his breeding for so long a period.

It is with intense interest that a view of the July importation of Percheron and French Coach stallions by McLaughlin Brothers, Columbus, Ohio, is awaited generally by breeders in this country. The fact that the stallions purchased by Mr. James McLaughlin in France—true Percheron and French Coaches or demi-sang—all of the very highest lineage, have won every first prize at the great French shows heretofore held, proves that we may expect a rare treat when we see the horses. When Mr. James B. McLaughlin was personally called to the tribune of President Fallieres, at the Great Central French Show in Paris, and informed by M. Fallieres that he had been selected for the honor of the "cross of Legion of Honor," that honor had been conferred on an American for the first time—in fact for the first time on a foreign purchaser of live stock along American lines. It should be understood that the "cross de la Legion d'Honneur" is only conferred for some great benefit done to mankind. The title which this distinction bears with it—leaving out the right to wear the ribbon on the lapel and the right to wear the cross, is accorded to few, and, as stated, only to those who have been of "great service to mankind." The mere fact that the horses owned now by Messrs. McLaughlin won every first prize at the great Central Show of Paris, and the great annual show of the French Percheron Society, this season, at which all the great Percheron breeders have exhibits, promises a rare treat when we see the horses. We have the International show here. It is a great show of Percheron horses. In France they have two such shows where the best of Percherons in the French Republic are exhibited. The horses run the gauntlet of different sets of judges and in France the awarding committee sometimes consists of many, many men. That Messrs. McLaughlin should have won in the last year all the great first prizes but one, and that, in this year, they should have won them all, and that Mr. James B. McLaughlin should have been decorated personally by President Fallieres, as "Chevalier de la Legion d'Honneur" proves that we must await their next importation to know what the greatest horses in France are like.

Gossip About Stock.

John Cramer, of Beatrice, Neb., writes us that his O. I. C. pigs are doing fine, and that he has already shipped out a number of animals to different parts of the country. Mr. Cramer has a splendid herd and is one of the fellows who tries to give everybody a square deal.

O. W. Stalder, of Salem, Neb., writes us that his spring pigs are doing well and that he has some good ones in his herd which he would like to send out as herd-headers. Mr. Stalder is a young man who possesses those sterling traits of character which give his customer confidence in his stock. Write him about his herd.

James Haley, the Duroc breeder and all around good fellow of Hope, Kans., is having a good mail-order business, having already shipped out a large par of his spring crop. Mr. Haley breeds good ones and is so well and favorably known for many miles around Hope that the problem of raising enough is the only one that bothers him.

A. & P. Schmitz, of Alma, have over a hundred fine pigs and can now supply breeders and others with some good material. The firm of Schmitz Brothers is among the best known in Kansas, as they have always kept their herd up to the standard and by square dealing have succeeded in building up a splendid trade in Kansas and adjoining territory.

Fair Acres Farm Herd of Herefords and Berkshires, owned by Mrs. C. S. Cross, Emporia, will as usual be represented at the American Royal Show to be held in Kansas City in October next. There are a number of finely bred bulls now ready for sale at Fair Acres Farm, particulars of which will be furnished on application to Mrs. Cross.

Last week we visited the Poland-China herd of J. B. Myers, at Canton, Kans. Mr. Myers has about a hundred head of pigs, about forty of them being of an early March farrow, and a more thrifty bunch we have not seen this season. They are out of first-class sows and sired by Meddler's Prince and Perfect's Tecumseh. Mr. Myers' two herd-boars, Mr. Myers started to pick out five of the best ones the other day to fit for the fair and he told us that they all seemed so near alike that it was hard to decide which were the best five. Mr. Myers is fast gain-

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My catalog tells all about the hog, sheep and poultry feeder. Send for it.

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ing a reputation as a breeder and by square dealing is meeting with marked success. If you want a good pig it will pay you to write him.

Joe Shields, of Lost Springs, has one of the finest lots of Hereford bulls we have had the pleasure of seeing this season, which he will sell very reasonably. Mr. Shields has been adding to his herd some of the best blood of the country and now has a lot of animals that would be a credit to any breeder. The Hereford breeders of Marion and Dickinson Counties will hold their annual sale at Hope, Kans., on November 15. File your application with Mr. Shields now for a catalogue.

Col. Lafe Burger, the live-stock auctioneer, Wellington, Kans., evidently is in dead earnest to secure a large number of fine stock sales during the forthcoming season, and in evidence of this fact he places his card in THE KANSAS FARMER. Mr. Burger has had a very successful career and already has a large number of sales booked for Oklahoma, Missouri, and all parts of Kansas. He would be glad to correspond with breeders who contemplate holding a public sale in the near future.

Wilber Vick, Junction City, one of the prominent farmers of Geary County, several years ago started a herd of Duroc-Jersey hogs and to-day has one of the finest herds in that county. Mr. Vick for the past three years has attended the best sales of Duroc-Jerseys and at a number of them brought home the pick of the sale. On his farm is undoubtedly one of the finest hog houses in the State. The building is built into a hill, is two stories high, 100 feet long by 40 feet wide, and on the east the entire front is made of glass, to heat the building for the young pigs in the winter.

The experience of a prominent breeder of Hereford cattle, near Attica, Ind., may prove of interest to many other stockmen. This gentleman for a number of years has used a Bowsher "Combination" belt power-mill at his home farm and ground all the feed for his cattle. Last winter he fed one hundred head of cattle at a farm some twenty miles distant from his home farm and attempted to do it on whole grain. He writes us that he fed 2,500 bushels of ear-corn with practically no gain. He then put in a No. 10 Bowsher Geared Sweep-Mill on this distant place, and had a gain of 185 pounds per steer in the next 45 days. He put off buying the mill until April, and his experience is pretty conclusive evidence of the value of ground feed. The N. P. Bowsher Co., South Bend, Ind., will give the name of the breeder or any other information about feed-mills desired by our readers.

A. G. Dorr, proprietor of the Osage Valley Herd of Duroc-Jersey swine, Route 5, Osage City, Kans., starts his regular advertisement in this week's issue. Mr. Dorr is one of the oldest breeders of pure-bred swine in the State, and for fourteen years has been breeding Duroc-Jerseys, and during that period has never been able to fill all the orders that he received. He opens up the season's trade with thirty spring boars that are now ready for shipment. These males are growthy, heavy-boned, good, straight feet, broad backs, and fancy head and ears. They are the get of the best-bred

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Why let lice eat up your poultry profits? Kill the lice with the
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Guaranteed to do the work better, quicker, more easily and more thoroughly than any other method. Sold on a positive guarantee—your money back, if you are not perfectly satisfied.
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30 spring boars now ready to ship; as fine as they grow, sired by Orion Chief, Brilliant Jack and Teddy Chief; good bone, back and ham. Priced reasonably.

A. G. DORR, Osage City, Kansas

sires, such as Ohio Chief, Orion, Top Notcher, and Brilliant. Among the youngsters are quite a number suitable for herd-headers. The Osage Valley Herd now numbers 150 head of pure-bred swine, and he guarantees everything sold to be as represented. His prices are reasonable. For further information call or write and mention THE KANSAS FARMER.

Homes for Thousands.

The Shoshone Indian Reservation lands will be opened to settlement August 15. Excursion rates less than one fare round trip, daily, July 12 to 29, \$26.70 from Chicago, via the Chicago & North Western Railway, the only all-rail route to the Reservation border. Rates of registration July 16 to 31. Write for pamphlets telling how to secure one of these attractive homesteads. All agents sell tickets via this route. W. B. Kniskern, Passenger Traffic Manager, Chicago.

Denver, Colorado Springs, Pueblo and Return, \$17.50. Santa Fe.

Tickets on sale daily, good returning as late as October 31, liberal stop-over privileges allowed. Fast Colorado Flyer from Topeka 10.35 p. m. arrives Colorado early next morning. Rock ballast track and Harvey eating houses. T. L. KING, C. P. & T. A., Topeka, Kans.

Send to A. L. Sponsler, secretary, Hutchinson, Kans., for a copy of the Kansas State Fair Premium Catalogue.

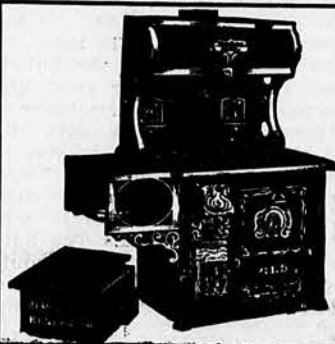
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and thus save you \$15 to \$40 profits of middlemen and dealers. We give with every range a TEN YEAR GUARANTEE, which is as broad and binding as we can make it. Is it not worth a minute's time and a postal card to send for our catalogue which tells all about this liberal special offer? Our catalogue shows over one hundred different styles and sizes of Wood Cook Stoves, Heating Stoves, Steel Ranges, etc. We are making many other liberal offers for the summer months. Are you interested? If so, SEND POSTAL FOR CATALOGUE "G" NOW.

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Home Departments

CONDUCTED BY RUTH COWGILL.

The Old Trundle-Bed.

Oh, the old trundle-bed, where I slept when a boy,
What panoplied knight might not covet the joy?
The glory and peace of that slumber of mine,
Like a long, gracious rest in the bosom divine;
The quaint, homely couch, hidden close from the light,
But daintily drawn from its hiding at night.
Oh, a nest of delight, from the foot to the head,
Was the queer little, dear little, old trundle-bed.

Oh, the old trundle-bed where I wondering saw
The stars through the window, and listened with awe
To the sigh of the winds as they tremblingly crept
Through the trees where the robins so restlessly slept,
Where I heard the low, murmurous chirp of the wren,
And the katydid listlessly chirrup again,
Through the maze of the dreams of the old trundle-bed.

Oh, the old trundle-bed! Oh, the old trundle-bed!
With its plump, little pillow and old-fashioned spread;
Its snowy white sheets and the blankets above,
Smoothed down and tucked around with the touches of love;
The voice of my mother to lull me to sleep,
With the old fairy stories my memories keep
Still fresh as the lilies that bloom o'er the head,
Once bowed o'er my own in the old trundle-bed.

—James Whitcomb Riley.

Take Time to Be Courteous.

The pessimist laments that courtesy is fast becoming a thing of the past; that on account of the hustle and bustle of this fast age, the race for money and position, courtesy is "losing out." A writer, who is a resident of New York, and who has recently traveled somewhat in the interior, confesses "that the further he got away from New York and what might be called Metropolitan influence, the greater was the courtesy. Let us say that the further we get away from New York, the less busy people are, therefore, they have more time to be considerate of others—in fact to be human.

The lack of courtesy is not confined to New York; it is apparent wherever you go, even if you are not a great traveler. Officials and other servants of the public are sadly lacking in this rare gift. A stranger visits the city thinking to meet it there. She boards the street-car, expecting to find her destination readily, but she is hurried on and hustled off with less care than is given pigs and cattle being taken to market, and her questions of inquiry—if answered at all—are answered curtly and without regard to accuracy. While it is the business of these conductors to take you to your destination, they seem not in the least concerned whether you reach it or not. Their manner and actions plainly say, "Time is too short to be courteous."

Courtesy is not confined to any locality or class. It is found among the lowly and is absent from the rich and professedly cultured. A traveler visiting Boston—that city of boasted culture and learning—was surprised to see that in the street-cars men are perfectly oblivious to the presence of women. The cars were most frequently crowded, but no matter how many or what kind of women entered, they were compelled to stand—as there were apparently no gentlemen on the car—although many seats were occupied by men who were reading the paper or absently gazing into the street. He said that during his stay there only once did he see a man offer his seat to a woman, and that was a colored man who arose and gave his seat to a colored woman.

True courtesy is a consideration for the rights and happiness of others. It is "to do and to say the kindest thing in the kindest way." He who is truly courteous is no respecter of persons. He does not expend it upon a certain few, but is as thoughtful for the rights of the small as of the great, and is as polite to the obscure and unpretentious as to those in the higher walks of life. He who shows courtesy to those only who are favored, or only occasionally when it suits, wears it as an outer garment to be taken off and put on to suit the time. It is a veneer

and not the true thing. It easily shows through with much rough usage.

Sometimes we seem to think those we love the most the least worthy of our consideration, or in other words, that courtesy is only for strangers and we save it for them, as though by using, it would diminish. It is one of the things that increases by using. The habit of being polite and courteous in the home every day, even to the very little children, too small to understand the words, breeds a spirit of courtesy, and it will become a part of their natures and will come to them as easy as breathing. The "thank you, Charlie," for a deed done even when told to do it, or "please," when telling a child to do something, are little seeds of courtesy that will bear fruit in the future.

Children brought up in a home where the father is courteous and polite to the mother, and who are used to courteous treatment themselves are apt to form habits of courtesy.

Let us never become too busy to be courteous. I think of an incident that happened in the country—whether through ignorance or because of haste I do not know—but it was a lack of consideration for another. A friend visiting in the community came to return a call. When she had chatted a while, the one on whom she was calling, glanced at the clock and remarked bluntly, "That it was most time to get the dinner on." The caller took the hint and hastened away, feeling very much as if she had been sent home. At another time another one kindly invited this same woman to visit her, saying she would come for her at a certain time in the afternoon. My friend consequently was ready at the appointed time, but the expected lady did not appear, and dusk found her still waiting. When weary of watching, she telephoned to find out why. The excuse was a reasonable one, but why did she not step to the telephone and explain and excuse herself for the delay? It was a lack of proper consideration for the feelings of another, and a breach of courtesy.

Let us always remember Emerson's saying, that, "Life is not so short but there is always time enough for courtesy."

Salads.

Two Simple Salads.—Prepare a quantity of lettuce by cutting with scissors into shreds, and if one has watercress or the pungent pepper-grass or garden cress, a fourth quantity of either added to lettuce is a great improvement. Just before serving, mix with a dressing made by beating a half pint of sour cream until stiff and adding slowly two tablespoonfuls of strong vinegar, two of melted butter, a saltspoonful of salt, one tablespoonful of sugar, and a dash of Cayenne pepper.

If one has fresh drippings from fried pork, it answers very well in the place of butter. This is essentially a farm salad.

One more elaborate is as follows:

Slice crisp celery and firm, tart apples in equal quantities. Dress with two well-beaten eggs, one teaspoonful of mustard, one teaspoonful of salt, two tablespoonfuls of sugar, one tablespoonful of flour, one-half cupful of vinegar, and one-half cupful of cream. Sprinkle Cayenne pepper, and add butter the size of walnut. Cook in double boiler until it thickens, and strain. Thin with whipped cream; mix thoroughly with salad and add a few nut meats.

An Inexpensive Salad.—Chop fine six medium-sized half-ripe tomatoes and add one-half can of salmon and about a pint of cold boiled potatoes. Make a dressing of one tablespoonful of sugar and one tablespoonful of mustard, one teaspoonful of suet, one cupful of milk, one cupful of vinegar, one egg. Mix the sugar, mustard, and suet thoroughly; slowly add the milk, then the vinegar, and lastly the egg. Boil until like custard and pour over the salad when cold.

A Delicate Salad.—A particularly delicate salad is made of white grapes and English walnuts. Peel the grapes, cut in halves and remove the seeds. Add English walnut meats in the proportion of three nuts to a dozen grapes. Serve on lettuce leaves with mayonnaise. For this or any other fruit salad I make the mayonnaise slightly sweeter than for a meat or a vege-

table salad, allowing twice the usual amount of powdered sugar.

California Dutch Salad.—Two slices of bacon fried and cut up fine, one beaten egg, one-fourth cupful of vinegar, one-fourth cupful of water. Have ready two sliced cucumbers previously soaked in salted water, a small cabbage, and two stalks of celery which have been chopped. Mix vegetables together, then add whipped cream to salad dressing and pour over vegetables.

Sardine Salad.—Lay the sardines upon soft paper to free from oil. Scrape off the skin and remove the bones, then put them in a mortar. Remove the shells from an equal number of hard-boiled eggs and cut them into halves crosswise so as to form cups with pointed edges. Put the yolks into the mortar with the sardines, add a dash of salt and pepper and work to a smooth paste. Moisten with salad dressing. Cut a thin strip from the bottom of egg-cups, so they may stand upright on serving dish, and fill cavity with the mixture, rounding the top up neatly. Arrange these on a bed of shredded lettuce or watercress and sprinkle plentifully with French dressing.

Another Sardine Salad.—Six cold boiled potatoes cut into small cubes, two onions and one cucumber sliced, one tablespoonful minced parsley, two hard-boiled eggs cut fine, twelve sardines flaked; moisten with boiled dressing; garnish with split sardines, capers, and parsley; serve on lettuce.

Salads of Tomato Jelly.—A salad of tomato jelly is so easy to make, so delicious to eat, so susceptible of endless variations, that it is strange we do not see it oftener upon our tables.

Rule: Add to one quart of tomato juice, canned or fresh, one teaspoonful of salt, one-half teaspoonful of pepper, two teaspoonfuls of chopped onion, twelve cloves, one bay leaf, two teaspoonfuls of sugar. Simmer fifteen minutes, take from the fire and pour over two tablespoonfuls of gelatine previously soaked in cold water. Stir until dissolved, and add a dash of paprika. Strain and mold. This plain jelly or any of the following combinations may be molded in small cups, or cut in cubes and served with a French dressing or mayonnaise as preferred.

A pretty salad is made by stirring into the jelly when about to set, stewed, cubed sweetbreads. Chicken, turkey, or veal can be used in the same way.

Broken walnut meats are excellent with the tomato, as are canned mushrooms or celery cut in crescents. Molded with green peas and served on a bed of shredded lettuce it is an effective salad for a winter luncheon or dinner.

Salad.—Take equal amounts of chopped cabbage, celery, apples, and nuts and pour dressing over it when cold. Dressing is as follows: Five eggs or three, just as you like, according to the amount wanted. One-half teaspoonful of salt, one-half teaspoonful of mustard, two-thirds cup of vinegar, lump of butter size of walnut. Put on stove and boil until it thickens; when cold add one-half cup of sweet cream—pour over when cold.

Ham Salad.—Take equal amounts chopped ham, boiled eggs, and celery and mix altogether. Take one egg, beaten well. Into this pour a cupful of vinegar into which has been mixed a teaspoonful of pepper, and one of mustard. Do not use any salt as the ham will be salt enough. Let this come to a boiling point then set away to cool. When cool pour over the mixture of ham, eggs, and celery. Serve on lettuce leaves.

Green-Bean Salad.—Take one tablespoonful of lard; one tablespoonful of flour, and one cupful of vinegar. Make a sour gravy; two tablespoonfuls of nice cream; one onion sliced, and one quart of green beans cooked down.

Exiled from Sunlight.

One of the visiting nurses of the Nurses' Settlement, New York City, reports the case of a little girl named Miriam Goldstein, 8 years old, working on men's coats in her squalid tenement home on Goerick Street. The visitor begged to take the little totler out for a short walk, for an hour in the shine and fresh air. But the baby's work was too valuable for that; she could not be spared from her task even for an hour. "If it were only the work of that day, bad as it was, I should not have minded so much," said the visitor, who was used to such sights. "But the tragedy of it was the perfection of her work. The buttonholes she was making were exquisitely done, and she must have worked at least two years before acquiring such skill."

I have watched hundreds of little

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OFFERS courses in Agriculture, Domestic Science, General Science, Mechanical Engineering, Electrical Engineering, Architecture, and Veterinary Science. Also short courses in Agriculture, Dairying, and Domestic Science. Admission direct from the country schools. A preparatory department is maintained for persons over eighteen. Necessary expenses low. Catalogue free. Address

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Death of Floral Lawn Cause, Smothered by Dandelions

The dandelion pest has had its day. For one day you can get an instrument that can be used by women and children as well as men that will pull dandelions and other noxious weeds at the rate of one thousand an hour, and leave not a drop of dirt nor a visible tear in the sod. No stooping nor bending and is a pleasure not a task to operate it; delivers automatically the weeds pulled, and your hands are not soiled, nor your back tired, no grunting nor humping around to do your work. Pulls any dandelion or weed when tap root does not exceed 16 inches in length. Send one dollar and we will deliver free at your door.

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Fitted with solid gold pens, will last 15 years. All pens guaranteed. Our stock is the largest west of Chicago. We refer you to any bank in Topeka or the Kansas Farmer

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If you'll tell us the number and kind of live-stock your papa will ship this year you'll get a nice set of dominoes.

Rice Bros., Live Stock Commission
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boys and girls, many of them even younger than Miriam, the little buttonhole-maker, working by night as well as by day in scores of occupations in the tenements of our largest cities. Wrapping cheap bangles in Philadelphia; making cheap cigars in dim cellar "factories" in Pittsburg; making artificial flowers in New York and Chicago; garment-making in a score of cities; rag-sorting in filthy cellars exposed to terrible risks of disease; making pocketbooks, paper bags, pasteboard boxes, cheap picture frames—these are only a few of the occupations of little children.

Where home is a hovel, and dull we grovel,

Forgetting the world is fair.

—John Spargo, in Woman's Home Companion for July.

A Voice from Eldorado.

I would like to write a few lines about different things to readers of THE KANSAS FARMER.

In the first place, I would like to ask the different clubs in Kansas why they don't help the Crittenden Home in Topeka? Some of the women who are interested in this home have asked for help, but Topeka failed to respond very readily. I have asked two churches here to help them, but they refused on account of so much other church work. Are we our "sisters" keepers? We all have girls of our own.

I want to write to the mothers who read THE KANSAS FARMER about going to church. Don't stay at home on account of the children, for they need the example, and besides it is a rest to go and hear the sermon. You may think your clothes are not good enough, but no one notices your clothes if you are neat. Gasoline and tube paint will make an old worsted dress look like new. Get the paint and mix it with gasoline and dip the dress in it. Do this out of doors or where there is no fire. It will also color ribbon or velvet nicely. When making anything over, always buy a pattern unless you are a good hand at cutting.

If you are getting round shouldered, stand straight against the wall for a while every night, and remember to keep your shoulders back when at work.

Teach the children the Bible while young or they will not be interested in it when they are older.

MABEL.

Woman's Farm Work.

Many a farm and farmer would go to rack and ruin, morally and financially, were it not for the woman's influence and the wife's help. The average farmer and farm are what they are, largely because of the wife.

Sound health is fundamental in human success. Material and ethical development depend upon this, for, while individuals in poor health and with feeble digestion may accomplish much and enjoy life, we all know that for the mass, the vital essential is an organism sound and normal from head to foot.

To properly nourish the body and wisely to insure its health, physical and moral, are duties in every family that devolve upon the wife. To fulfill her duties in this respect, a woman requires genius of the highest order, intuition, knowledge, experience, tact, sense, patience—all the attributes of perfect and successful motherhood and womanhood. Few men on the farm understand the qualities possessed by the women who toll by their sides. Every woman possesses these qualities to a degree; life, at its best, depends upon the extent to which she is able to develop and employ them.

The responsibilities of women are complex, and they must fit themselves to do their work. The educational needs of young women who are to do the work of the farm are but feebly realized and poorly provided for in schools. The manner in which a woman rises to her responsibilities on the farm, in view of her inefficient preparation for her duties, is phenomenal. The successful woman on the farm has the most glorious success possible in a woman's life. Woman's work on the farm is just as important, just as satisfying as a man's.—Exchange.

St. Paul and Minneapolis and Return

From Kansas City via Chicago Great Western Railway. Tickets on sale June 1 to September 30. Final return limit October 31. Equally low rates to other points in Minnesota, North Dakota, Wisconsin, and Lower Michigan. For further information apply to Geo. W. Lincoln, T. P. A., 7 West 9th St., Kansas City, Mo.

The Food Value of a Soda Cracker

You have heard that some foods furnish fat, other foods make muscle, and still others are tissue building and heat forming.

You know that most foods have one or more of these elements, but do you know that no food contains them all in such properly balanced proportions as a good soda cracker?

The United States Government report shows that soda crackers contain less water, are richer in the muscle and fat elements, and have a much higher per cent of the tissue building and heat forming properties than any article of food made from flour.

That is why **Uneda Biscuit** should form an important part of every meal. They represent the superlative of the soda cracker, all their goodness and nourishment being brought from the oven to you in a package that is proof against air, moisture and dust—the price being too small to mention.

(NATIONAL BISCUIT COMPANY)

The Young Folks

God Bless the Human Sunbeams.

God bless the human sunbeams,
The men both strong and true,
Who dally sing or whistle
At all they have to do.
Their eyes are clear and merry,
Their step is firm but light,
Their laugh's a benediction,
And life once more seems bright.

God bless the human sunbeams,
The women who, though sad,
Can still be self-forgetful
And other hearts make glad.
Theirs is a blessed mission;
Their smile can make night day.
Their cheery words of comfort,
Soon drives all clouds away.

God bless the human sunbeams,
The children fair and fond,
Who come into our presence,
Life's hardest lessons conned.
Their prattle falls like music,
Just as a tear-drop starts,
Their kisses and caresses
Can ease poor burdened hearts.

God bless the human sunbeams,
Men, women, children, too,
Who add to life much sweetness,
And leave us less to rue.
God bless them all! God bless them!
They do their work so well,
Reward will follow after,
And heaven the story tell.

Leslie's Weekly.

Fleetfoot; the Autobiography of a Pony.
MARION SEWELL.

CHAPTER XXIV.—AFTER MANY YEARS.

"Dearcot, old man, this horse is dying. Take a fool's advice and don't disturb your mind any further, but place the mouth of your revolver directly under the left ear, then Biff! the problem is solved."

"But, Larkins, there is more than one solution," returned the voice of Mr. Dearcot. "I would much rather cure the horse than kill him. He should at least have a chance for his life. Do the best you can for him, Doc., and if it takes longer to put him out of misery with your medicine than with a gun, I am willing to pay you for your time."

The other man gave a short laugh. "All right," he said. "I'll go out to the rig and fix up a dose that will bring the dead to life. A fellow in my profession is up against it when

it comes to doctoring ancient heirlooms."

Having thus availed himself of the privileges of long acquaintance, Dr. Larkins swung himself out of the stable, and through the open door crept in a feeble line of light, the first evidence of breaking day.

Mr. Dearcot, left alone, did not approach me, but leaned over the low partition, seemingly absorbed in thought, while I, with a peculiar weakness in my limbs, crouched against the manger.

What could be the meaning of this strange dialogue which I had just overheard? Something had suddenly gone wrong with me and I was dying and Mr. Dearcot was pleading with the veterinary surgeon to give me one last chance. Oddly enough I could not realize the serious nature of my condition, just shaky and nervous but not really ill. I remembered how in the night I was awakened by a noise, and, springing up suddenly, struck my head with great force against a heavy piece of wood. For a little while I was dazed, then sleep came to me again.

It was hard to die now after having been gone so long, after coming back to find life so sweet and beautiful only three short weeks ago. The old home and the loved ones were dearer to me now than they had ever been before. The gray hairs of Mr. and Mrs. Dearcot inspired me with reverent tenderness. The much-admired Misses Dearcot with all their new friends and new interests welcomed Pony back, and petted me with all the ardor of their childhood days. Grown-up Lyall, although he had several splendid match teams, did not allow any of them to come between him and the "Little Prodigal," as he delighted in calling me. Nor were these all the inducements which life held. A few days previously when I had taken my former master, Howard French, to the train, before leaving me he whispered a secret in my ear, which simple performance nearly cost me my life, for being so stunned with joy I barely escaped being run over by the cars.

But all earthly happiness was over now, and with an effort at resignation I closed my eyes and endeavored to imagine what another world would be like, if there was such a state awaiting me. However hard I tried, my

poor, dazed brain could form no idea of futurity. I did not wish any change. I only craved the comradeship of my dear, human friends, if it were only for a little while longer.

It was clear daylight. A breeze stealing in behind the open door slammed it shut with a resounding crash. Mr. Dearcot, who had been reading a paper-covered manual on the back of which was pictured a cow and a colt, folded the book and returned it to his pocket.

Just then Dr. Larkins came back, bearing in his hands a long, dark bottle.

"I am glad it isn't any worse," he said, laying the bottle on the floor and wiping his hands.

"What?" asked Mr. Dearcot, thinking that he referred to the medicine.

"The situation, of course," replied the aggressive doctor. "When I heard that big noise, I was sure you had taken the matter up, as you lawyers say, and the afflicted horse had kicked you into bobyjinks. By the by, I forgot the drops that are to put his system in order. One, two, three, that makes the fifth time I have fixed that contemptible drenching tube. What a beastly wind!"

There was a short pause, during which Dr. Larkins made a final assault on the tall bottle, having seen fit to add a gray powder.

"Lead the way," he commanded Mr. Dearcot, who stopped long enough to ask,

"Had we not better call in some of the men?"

"Call in your grandmother," gibed the eminent specialist. "I can administer a dose to this horse with one finger of my left hand."

Then to my surprise the door in the wall was opened and both men disappeared on the other side.

I heard Dr. Larkins' mutterings, mingled with Mr. Dearcot's soothing tones. There was a low moan, a short struggle, a sound as of a great weight falling, an imprecation from the impatient veterinarian, then silence.

I crept to the unfastened door, and as I pushed it open my eyes were greeted by a sight that made my heart stand still. Stretched at full length across the stall was the frame of a horse that had once been enormous, but was now only a heap of unshapely bones. The shoulders were bruised

and swollen out of all proportion; the long, lean head was scarred with wounds that were but partly healed. From this heartbreaking wreck a pair of bright eyes looked out, heroically, beseechingly. Those and the long-drawn breaths which came at intervals were the only signs of life. A dreadful suspicion took possession of me as I left my own stall to enter the one where the sick horse lay, and my steps were unsteady when I reached the abused head and placed my velvety nose close against it. The large eyes grew brighter, the weak neck was raised, and in a moment the dying horse was standing upright. There was the merest suggestion of a whinny as for a moment he leaned his head upon my shoulders, then he dropped down again, gave a sigh of joyous relief, and the knotty limbs composed themselves rigidly.

"It wasn't a bitter dose, just warm and sweet," broke in Dr. Larkins with unexpected feeling, and as I glanced from his crestfallen countenance to the cheerless face of Mr. Dearcot, the sorrowful truth was only too apparent. Faithful Big Jake had passed out of life.

The Little Ones

The Night Express.

Miss Ethel Marie is a traveled dame; Her journeys are many, but, all the same, Over one line and to only one place, Whence she returns with a bright-smiling face. And she is so busy the whole day long With matters that really brook no delay. She can't get away in the broad daylight, So all her traveling is done by night. When the clocks strike seven in Twilightville, And the stars come peeping over the hill, Miss Ethel Marie, with a hop and a skip, Hurries to pack her trunk and her grip. Clad in traveling gown of white, She gives us each a kiss for good-night; Then, with a traveler's fine disdain, Off she goes for the evening train.

The Grand Crib line goes winding down From Twilightville into Drowsytown; The station, where all of its trains depart, Is a room that's dear to a mother's heart; The Pullman sleeper, whose lights burn low, Is a little girl's bed as white as snow; And just as soon as "Our Father" is heard The train-dispatcher will give the word.

Ethel Marie has her baggage checked through. That's for the trunk man, papa, to do; I am conductor; as you see, I write the berth check for Ethel Marie.

And whom do we have for a porter? Ah, Who tucks up a bed like a dear mama? And the engineer is the One, I guess, Whose mercy and love guide the night express.

—Frank R. Batchelor, in Congregationalist.

Dorothy's Pet.

"Dorothy, will you go up to the pasture and see if the raspberries are ripe?" said Mrs. Miller. "I would like to have some for tea."

Dorothy liked to gather berries, so she got her basket and was soon on her way. It was a pleasant day in June. The sunshine was warm and bright, and Dorothy danced on her way, stopping now and then to pick the wild flowers that she saw. She found the berries ripe and plentiful, so she soon filled her basket and started home again. When she had almost reached home, she heard a plaintive chirp from somewhere in the grass near-by. She stopped and listened. "I wonder what it is," she said to herself. "Maybe it is a little bird." She hunted around and soon found—not a bird, but a little white chicken which had been hurt and left alone.

Dorothy picked it up carefully, carried it home, and showed it to her mama. "It's leg is broken," said Mrs. Miller, after examining it. "I believe it would be better to kill it than to let it suffer."

"O, don't kill it!" cried Dorothy. "Can't we bind it up in splints, just like the doctor did when I broke my arm?"

"Well," said mama, after a pause, "we might try it, if you will feed and water it and see that it is cared for." Dorothy quickly agreed, and ran for two little sticks while mama got some strips of soft cloth and a needle and thread.

After bathing it in warm water, she

carefully bound the sticks on with the bandages and sewed it securely. Dorothy then found a little box, and put some old, soft rags in it for chickie to sleep on.

For a day or two it seemed somewhat lonely without its brothers and sisters, but it soon became accustomed to the arrangement, and before long learned to watch for the little girl in the blue apron, who brought the food and water. It grew tamer every day, and would follow Dorothy all about the yard, and even perch on her hand or shoulder.

One day, after several weeks had passed, Dorothy came into the house with her pet in her hands. "Let's unwrap it, mama," she said. "It doesn't limp hardly a bit, now."

So they unbound it and found that it had grown together nicely, and was almost as good as new.

Dorothy wanted to keep it in the yard for a pet, but mama thought it would be too hard on the flower-beds, so they put it with the others.

"It was a nice pet, anyway," said Dorothy, "and I hope it won't forget me." E. C.

The Intelligence of Tito.

She was Maltese in color, with a face of almost human intelligence. She had a habit of looking long and steadily at us until, sometimes, we would turn away from her gaze. A friend into whose face Tito was looking one day, remarked, "There is no necessity for a cat knowing so much. She is reading my very thoughts."

One little trick which I taught her was to stand upon her head; another, to sit upon a cricket at my bidding. The slightest whisper in her ear, "Go sit on the cricket," was ever promptly obeyed. I would give her a certain number to count with her paw. If she failed to count aright, which she rarely did, I would remind her of her mistake, and the second time she would be sure to count correctly.

"Hide and Seek" was a very enjoyable game with Tito and her mistress. Upon telling her to "go blind," she would stick up her tail and run behind the door waiting for the signal to come, when she would creep cautiously out and be sure to find my hiding-place, even although I might chose to hide in a closet with the door fast closed.

While I recited "Pat-a-cake, Baker's-man," she would go through the motions with her paws, even the "Roll, roll, roll," and the "Prick, prick, prick," and the "Tossing into the oven." Then I would say, "Would you like to play this game longer? If so, raise your right hand." Up would go the soft, silvery right paw; or the left one, if weary of the play.—Florence Dyer, in Pets and Animals.

Learn to Do the Plain Things, Girls.

The majority of young girls know nothing about housekeeping. You all need it, girls. I don't care what are the circumstances of the man whom you expect or hope to marry. You will make him a better wife for understanding housekeeping.

I don't know how many of you have read that interesting book, "The Story of Avis." The heroine is an artist. She hates housework and has never been able to learn to cook. The man who is in love with her puts this aside as a matter of no importance. After a long holding out against him, she finally consents to marry him. "But I can not make bread," she says, protestingly. "You will give me the bread of life," he returns.

It sounds lovely—but when the cook leaves, and he is hungry and the food his wife prepares is not fit to eat, it is plainly to be seen that he would gladly trade off the "bread of life" for a good, square meal. Nearly all men are made that way—and I must say I sympathize with them.

Learn to do the plain things, girls. You can't keep house satisfactorily on a knowledge of how to make three kinds of salad dressing. These are excellent; but the knowledge of how to broil a steak, to boil potatoes, and make good bread and biscuit will stand you in better stead than all your proficiency in fancy dishes. Know how to do these, too; but don't let them take the place of the others. Cooking is not all croquettes and fancy cakes. You may marry a man who has the same taste for fancy cooking that you yourself have, but it is more likely that he will prefer plain roast and boiled and broiled to the made dishes you have learned in your cooking class. —Manchester Union.

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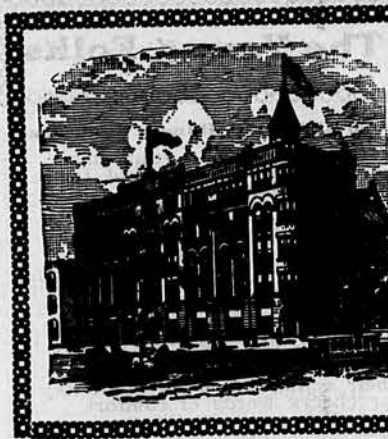
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Our Club Roll.

Excelsior Club, Fortwin, Kansas. (1902)
Women's Literary Club, Osborne, Osborne County (1902).
Women's Club, Logan, Phillips County (1903).
Domestic Science Club, Osage, Osage County (1888).
Ladies' Social Society No. 1, Minneapolis, Ottawa County (1888).
Chalisco Club, Highland Park, Shawnee County (1903).
Cultus Club, Phillipsburg, Phillips County (1902).
Literature Club, Ford, Ford County (1903).
Sabbian Club, Mission Center, Shawnee County Route 2 (1899).
Star Valley Women's Club, Iola, [Allen County (1902).
West Side Forestry Club, Topeka, Shawnee County, Route 8 (1903).
Fortnight Club, Grant Township, Reno County, (1903).
Progressive Society, Rosalia, Butler County (1903)
Pleasant Hour Club, Wakarusa Township, Douglas County (1899).
The Lady Farmer's Institute, Marysville, Marshall County (1902).
Women's Country Club, Anthony, Harper County.
Taka Embroidery Club, Madison, Greenwood County (1902).
Prenatal Reading Club, Cawker City, Mitchell County (1903).
Cosmos Club, Russell, Kans.
The Sunflower Club, Perry, Jefferson County (1903).
Chaldean Club, Sterling, Rice County (1904).
Jewell Reading Club, Osage County.
The Mutual Helpers, Madison, Kans. (1904).
West Side Study Club, Delphos (1906).
Domestic Science Club, Berryton, Shawnee County (1906).
Mutual Improvement Club, Vermillion, Marshall County (1903).
(All communications for the Club Department should be directed to Miss Ruth Cowgill, Editor Club Department.)

Quotations.

Taken from the Year-Book of the Mutual Improvement Club, of Vermillion:

- "Let every action tend to some point and be perfect in its kind."
"Be not simply good; be good for something."
"The best science—extracting sunshine from a cloudy way."
"Live and let live, is a good maxim, but live and help live, is a better."
"By faithful observation, by continued occupation, something may be gained from all things."
"The world is never fond of a person who is a perennial chairman of a grievance committee."
"There is something better than making a living, making a life."
"An idler is a watch that wants both hands, as useless if it goes as if it stands."
"If you would hit the mark, you must aim a little above it. Every arrow that flies feels the attraction of the earth."
"Every one has in himself a continent of undiscovered character; happy is he who acts as Columbus to his own soul."
"Good words cost nothing, but are worth much."
"It is never too late to be what you might have been."
"Patience, perseverance, and prudence all spell prosperity."
"For those who would be achieving, every day brings something new."
"When once you trust yourself, you know the art of living."

Program of the Domestic Science Club, Near Osage City, for August 2.

- "A Blessed companion is a book."
Hostess, Mrs. Green.
Responses.....Book Reviews
Music.....Mrs. Hunsicker
Author's Trials.....Miss Moler
Kansas Authors.....Miss Smith
Suggested Topic.....Mrs. Berris
Recitation.....Dola Green

THE INTERNATIONAL SUNDAY-SCHOOL LESSON.

(Copyright, Davis W. Clark.)
Third Quarter. Lesson V. Luke xiv, 1-14. July 29, 1906.

Jesus Dines with a Pharisee.
Asceticism finds no encouragement in the example of Jesus. Sociability was a conspicuous trait in His character. It gave a handle to His enemies, who described Him as a wine-bibber and gluttonous. He is not known to have ever declined a social invitation. If bidden to a banquet or wedding, He went. Nor was He a spectral figure. He marred no festivity with melancholy air or disapproving frown. He filled well the function of guest, adorning and beautifying with His presence and miracles the amenities of life.
A foremost Pharisee, about to give a

lordly banquet, covets, as an ornament of the occasion, the grace of Jesus' presence. He will fain garnish his feast with the young Rabbi's novel and superb table-talk.

The vestibule of the Pharisee's chateau is the scene of a miracle of deed, as the banquet-hall after echoes to a miracle of word. An unfortunate creature lies there, his skin distended to the point of rupture by the watery collection beneath it. Jesus screens not His eyes to a disgusting sight, which would spoil the appetite of the average voluptuary. He tosses no small coin to the sufferer, as other guests are doing. But before He can bestow that gift which will be of more value than silver and gold, He must forestall the deadly criticism of the Pharisees, which He knew to be lying in wait for Him. It is not necessary to suppose, as some do, that the sick man had been placed in Jesus' way with a malicious purpose. He was there, and the critics of the Master saw their opportunity. They seemed to have Him "coming and going;" for it was a desperately bad case, and He might ignominiously fall of a cure; and if He succeeded, He would, in His very success, have flagrantly violated the Sabbath.

Jesus manfully takes the Sabbath-desecration horn of the dilemma; for He intends to heal the sick man. He springs His snare in His categorical question, "Is it allowable to work a cure on the Sabbath-day, or not?" Actions speak louder than words. Jesus answers His own question by an instantaneous and complete cure of the sick man. After this benevolent parenthesis He clinches the nail which He had driven in His first question by asking another: "Which of you shall have an ass or an ox fall into a pit, and will not straightway pull him out on a Sabbath-day?" Amid ominous silence the prescribed ablutions are attended to, the festive cloak from the host's own wardrobe is thrown about each guest, and at length the banquet-hall is reached.

Now is witnessed the disgraceful scramble for place at table, as for the chief seats in the synagogue. Although a concrete act is specified, reference is in fact to the subjective state of which the act is a true expression. The doing of the deed (for example the taking of the lowest place at table) without the appropriate subjective state would be either destitute of significance or it would be an instance of hypocrisy. The outward manner is the expression of an inward condition.

Jesus' words may also be understood as picturing in an ironical way Pride's defeat of itself. Then, too, he may be placing a premium upon a prudential course of conduct when even though the motive is not the highest, a species of self-control is developed which may finally contribute to the evolution of a truly noble character.

- 1. Sociability a trait of Jesus. Asceticism no support in Him. Declined no invitation. No spectral figure either. Filled well the function of guest.
2. Specific instance. Guest of a Pharisee who covets His table-talk.
3. Miracle in the vestibule. Jesus does not avoid the sufferer. Does not toss a small coin. Determines to heal.
4. Criticism forestalled. "Is it allowable to work a cure on the Sabbath?" Answers His question by curing. Follows cure with another question. If ox or ass—how much more a man?
5. The competition for place deprecated. A word to guests—And nosts.

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REFORMATION OF FOOD LAWS.

(Continued from page 769.) treated with preservatives, some of which are little short of poisonous. These are not easily detected. Only a few days ago a Topeka physician and his wife were severely poisoned by some broth they had made of beef, to which formaldehyde had been applied. To the fact that they had plenty of milk and eggs in the house and used them copiously as antidotes to the poison do these people owe their lives to-day. Doubtless, in this case some careless employee had used more than was intended of the poison in preserving the meat. None ought to be used.

It has been said that digestive troubles are characteristic of Americans. The gradually increasing use of poisonous preservatives has doubtless contributed vastly to this unfortunate condition.

It is to be hoped that more rigorous State laws will supplement the National pure-food statute to such an extent that the process of slow poisoning will become a thing of the unrighteous past.

"Farm Science" is the title of a compilation of eight valuable papers by specialists, namely, "Alfalfa Culture in America," by Joseph E. Wing; "Modern Corn Culture," by P. G. Holden; "Best Methods of Seeding," by Waldo F. Brown; "Small Grain Growing," by W. M. Hays; "Profitable Hay-Making," by Thomas Shaw; "Up-to-Date Dairying," by Clinton D. Smith; "Increasing Fertility," by Cyril G. Hopkins; and "Power on the Farm," by Fred R. Crane. The book contains 128 pages. Write for a free copy to the International Harvester Company, Chicago, Ill.

Reports indicate that the United States has produced a very large wheat-crop. Equally reliable reports indicate that the European wheat-crop is about 150,000,000 bushels below normal. These two conditions are likely to offset each other so that while there will be bread enough to go around, there should not be serious depression of prices.

Miscellany

Another Collecting Trip After Insects Adds to the Record of Dr. F. H. Snow.

ELBERT S. TUCKER, MUSEUM ASSISTANT IN SYSTEMATIC ENTOMOLOGY, UNIVERSITY OF KANSAS, LAWRENCE.

For forty years now, or from its very beginning, Dr. F. H. Snow has been connected with the University of Kansas. In this time he has conducted 24 scientific expeditions for the purpose of collecting natural history specimens, particularly of insects. Accompanied by L. A. Adams, Museum Assistant in Zoology, and Mr. Ebb Crumb, a student, he left Lawrence on the 21st of last month, being bound for Arizona on his 25th collecting trip. Eugene G. Smyth, of Topeka, will join the party later. All of these trips have been taken during summer vacations, visiting different regions as follows:

Eight to Colorado: No. 1, Colorado Springs, South Park, and Engelmann's Canyon (above Manitou), 1876; No. 4, Dome Rock, Platte Canyon, 1878; No. 5, Idaho Springs, 1879; No. 11, Estes Park, 1889; No. 12, Bailey, Platte Canyon, 1890; No. 13, Manitou Park, 1891; No. 14, Estes Park, 1892; No. 16, Estes Park, 1897.

Four to Western Kansas: No. 2, Wallace County (found Amblychilus), 1877; No. 3, Gove County (bitten by rattlesnake, found saurian scales), 1878; No. 17, Hamilton and Morton Counties, 1902; No. 19, Clark County, 1903.

Six to New Mexico: No. 6, Santa Fe Canyon, 1880; No. 7, Water Canyon (Apache Indian episode), 1881; No. 8, Near Las Vegas Hot Springs, Gallinas Canyon, 1882; No. 9, Near Las Vegas Hot Springs, Gallinas Canyon, 1883; No. 10, Silver City, 1884; No. 15, Magdalena Mountains, 1894.

Two to Texas: No. 21, Galveston, 1904; No. 23, Brownsville, 1905.

Five to Arizona: No. 18, Oak Creek Canyon (near Flagstaff), and Humphrey's Peak, including stop off at Las Vegas Hot Springs, New Mexico, returning, 1902; No. 20, Martinez or Congress Junction and Bill Williams Fork of the Colorado River, 1903; No. 22, Oak Creek Canyon (near Flagstaff), 1904; No. 24, San Bernardino Ranch (near Douglas), 1905; No. 25, at present at Tucson, bound for Babquivira Mountains.

Notwithstanding the enjoyable features of these trips, many difficulties and dangers, in fact narrow escapes from death, have been encountered. Dr. Snow was bitten by a rattlesnake on trip No. 3; a falling boulder struck within a few feet of him on trip No. 4; he perilously descended over a field of ice and snow on a mountain side, cutting footholds with a pocket knife, on trip No. 5; Apache Indians raided and murdered near his camp on trip No. 7; and he barely escaped from a flood torrent in a narrow canyon on trip No. 22.

On all his trips he has gone prepared with provisions and complete camping outfit. An account of trip No. 17, taken to Hamilton and Morton Counties, Western Kansas, which was written by me, was published in THE KANSAS FARMER, December 4, 1902. This will give a good idea of the usual methods employed on an expedition, and typical incidents of camp life. The record for fastest collecting was made on this trip while in Morton County. Three weeks spent in collecting on this trip resulted in the following count of specimens: Coleoptera (beetles), 4,112; Diptera (flies), 1,746; Hymenoptera (bees and wasps), 1,335; Hemiptera (sucking bugs), 637; Lepidoptera (butterflies and moths), 514; Orthoptera (grasshoppers and crickets), 488; Neuropterous insects (dragon-flies and lace-wings, etc.), 52; in bottles of alcohol, 827; total, 9,710.

Such an example shows how specimens are added to the museum by thousands at a time. Thus the immense collections have been built up more by personal work than by purchase.

The principal reason why Arizona has been given so much attention in recent years is because many of its regions still invite exploration by entomologists, who find numerous forms that are new to science. A few notes on trip No. 18 will perhaps interest the reader, especially concerning the features of the country visited. Dr. Snow left Lawrence with a company of students on this trip, in August, 1902. The party was composed of four members, including, besides the director, his son Frank L. Snow, Dr. C. F. Adams, and Roy L. Moodie.

Leaving the Santa Fe Railroad at Flagstaff, Arizona, the party and outfit were hauled by wagon and team to Oak Creek Canyon, a distance of 16 miles southward, through pine forests where lumbering operations were progressing. This region appeared almost destitute of insect life, as very little vegetation besides the timber seemed to thrive in the rocky soil, over which traveling was rendered extremely rough.

When the edge of Oak Creek Canyon was reached, the walls were found to drop down so steeply, between 1,000 to 1,200 feet, to the bed of the creek that no place would permit the team and wagon to descend with its load in safety. Each member of the party was obliged to carry his share of the outfit and provisions by hand down a narrow path. At the bottom, however, everything was delightful. A clear stream of water fed from springs a few miles above the camping place ran through the canyon, and several fine messes of trout were caught and served, much to the relish of the campers, during the time they remained there.

This canyon fairly teemed with insect life. Dr. Snow, always on the watch for butterflies and moths, his favorite kind of insects, at once recognized some rare and valuable species. Not far from camp he noticed a number of primroses in bloom, and knowing the nature of the flowers, he reasoned that only Sphinx moths would frequent them, since they are the only insects which can reach to the honey in the deep, tubular blossoms, being enabled to do so with their extraordinarily long tongues. At twilight, the time for these moths to fly, he visited the flowers and was rewarded by capturing the moths as he had expected. Altogether he caught 67 of these moths, most of which he afterwards sold for \$1.50 each, the proceeds materially helping to pay his expenses.

The discovery of a new species of beetle belonging to the genus Cychrus in the family Carabidae was quite by accident. Mr. Moodie had been detailed by the Doctor to do "sugaring" at night as a means for catching certain moths which are not attracted by light. A mixture of beer and molasses was smeared on the trunks of trees and served as a bait. The work was rather lonesome all alone in the timber away from camp, staying up into the night, and not knowing but what

a bear might appear some time. On the last night Mr. Moodie met with poor results, until in making his last round of inspection he found a solitary beetle which he grabbed and dropped into his poison bottle. As soon as he returned to camp, Dr. Snow turned out the contents of the bottle and at once recognized the insect as something new. All hands were started out next morning to search for more specimens of this insect, and the Doctor, in his anxiety to gain time, tried to postpone the return trip, when the driver arrived to carry the party back to Flagstaff according to agreement. But the driver had another engagement to fill and could not delay, and while he was occupied in carrying the camp outfit up the side of the canyon to his wagon, the Doctor kept the boys still hunting for the beetles until the last moment. As a special inducement, he offered to pay \$2 to the one who should catch the first three beetles, and 25 cents apiece for all that were caught afterwards. Dr. Adams brought in the first three specimens and the other two boys each caught enough to earn the same amount of money. Another specimen was found in a box of specimens previously collected by Dr. Adams, which had not given it attention. These beetles were found on the ground near the roots of trees, hiding under old pine needles and leaves.

The party then spent a week at Humphrey's Peak, about 15 miles north of Flagstaff, and also stopped off at Las Vegas Hot Springs, New Mexico, on the way home, finally arriving at Lawrence, September 8. In all, 15,000 specimens were collected.

Handling a Crisis.

In the contentions for the square deal and in the zeal to bring unfair discriminations in freight rates to an end, people have inclined to believe that all railroads and all railroad managers were lacking in those attributes of humanity called a soul. Such calamities as that which befel San Francisco last April sometimes bring into view better elements of mankind in quarters where not expected. The following from the Sunset Magazine shows how the crisis inspired promptness and generosity on a large scale:

"On the morning of the disaster at San Francisco, the Southern Pacific and other roads threw their gates wide open and carried the refugees away from the stricken city in ferry loads of thousands free of charge. The cars were so crowded that thousands had to ride on the roofs. From the outset, trainmen and conductors were advised that all rules were suspended in favor of one—move the people at all hazards. The second day after the disaster brought the heaviest outgo. On that day the Southern Pacific, for instance, moved out of San Francisco seventy passengers every minute—a total of 1,073 cars, equal to a train ten miles in length. On the third day nearly as many passengers left the city, and the movement was continuously heavy until the morning of April 26. During the first nine days after the disaster, over 300,000 free passengers were moved from San Francisco over this company's lines alone. The money value of the free transportation furnished to passengers during these nine days, according to the official report of the company's officers, was fully \$500,000. This does not include the free transportation from San Jose, Palo Alto, Vallejo, Santa Rosa, Stockton, and Sacramento. At the same time over the same railroad, free trainloads of relief supplies were being rushed westward into San Francisco. Within twelve hours after the disaster, the Southern Pacific and related lines, under the direction of President Harriman, were turned over to the work of relief. Everything else was sidetracked. President Harriman himself raced from New York to the scene of the disaster as fast as a special train could carry him. The speed achieved by the relief trains that followed him left all transcontinental freight-train records shattered. Passengers on fast west-bound trains saw flying freights, every car labeled 'San Francisco Relief,' whizzing by, while the passenger trains took the side-track. The first relief supplies flew west on Chicago and Northwestern Car No. 1090, leaving Omaha within twenty-four hours after the first news of the disaster. This was followed by the first full trainload of relief supplies, which left Omaha via the Harriman lines at 5.19 p. m., April 19, on passenger schedule. After that came train on train. Up to May 4 the Southern Pacific had handed free into San Francisco 1,500 cars of relief supplies. Had this been all flour, it would represent in weight four

sacks of flour for every inhabitant of San Francisco before the fire. Seventy-five per cent of the relief supplies came from the Pacific Coast, though vast quantities reached San Francisco from all directions over the several overland railway lines, to be unloaded at the various stations on Mission Bay, Vallejo Street, Oakland Pier, Oakland Wharf, Fourth and King Streets, and seventeen other supply depots around San Francisco Bay. These figures do not include the Government materials, most of which were likewise handled free. The charges on these combined supplies, had they been handled as commercial freight, would have amounted to over \$500,000."—Edwin Emerson, Jr., in Sunset Magazine for June-July.

The Silo Is Not an Alcohol Distillery. PRESS BULLETIN OF THE PENNSYLVANIA EXPERIMENT STATION.

A correspondent of the Experiment Station writes, "I would like to ask you for some information regarding the manufacture of alcohol. Since the late law has been passed, the thought occurred to be that it might be extracted from silos in some way, and as there are a large number of them in this locality, it might be a good opportunity here to begin the work."

This correspondent's impression that alcohol is formed in the silo appears to be shared by many, both in this and other States. The following statement has been prepared to aid in correcting this erroneous impression and to warn farmers against the expenditure of time and money upon a hopeless project.

Common alcohol is commercially produced only by a yeast fermentation of liquids containing sugar, such as fruit juices, molasses, the liquids of the mash-tub, or solutions of glucose. No other method of production has been found commercially practicable.

The silo is the seat of extensive, complex fermentations, it is true; but these are quite different from the common alcoholic fermentation.

Yeasts are not active in the silo. They are either absent, or present only in very small numbers. The high temperatures often attained in the silo kill the yeasts or suppress their action and thus prevent them from forming alcohol. Ensilage fermentation was formerly supposed to be due to the action of bacteria; but recent studies demonstrate that it is really the result of the abnormal action of the dying protoplasm of the stored plants, and of the action of soluble ferments secreted by the protoplasm. The products of these actions are chiefly

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carbonic and lactic acids, to the latter of which ensilage owes its acid flavor. Silage contains only traces of alcohol, as has been shown by Richardson, Manns, and Irish. The gases evolved from the silo have also been carefully studied by Manns and Whitson. They consist chiefly of carbonic acid and nitrogen, together with small amounts of acetic and other acids. No alcohol has been observed.

We must conclude, therefore, that, despite the fact that ensilage is a fermentation process and that it results in a loss of dry matter, chiefly starch and sugars, amounting to from 3 to 40 per cent of the dry matter originally stored in the silo, the process is useless as a commercial source of alcohol.

WM. FREAR.

Reinforced Concrete Stands Earthquake and Fire.

Writing of his observations and conclusions on the recent earthquake and fire in San Francisco, an eminent superintending engineer says:

"I have examined the concrete foundations of three of the best-preserved, large, modern buildings in my charge, and in every case these foundations are intact, without crack or flaw, and the superstructures, although severely affected by fire, communicated to them by other buildings, are in perfect condition as regards to steel structural frames, walls, and partitions. The force of shock had practically no effect upon them.

"Therefore, if the new San Francisco is erected on similar lines, no visitation such as that through which we have just passed will be experienced by posterity.

Concrete, or the material composing it, viz.: sand, crushed rock, and cement, are and will be available in any quantity required, and as cheaply as can be obtained anywhere in the world. The building with this material will be cheaper than, or as cheap as with, any material or combination of materials known to us.

"Its reinforcement, more or less, by expanded, metal, steel rods and beams makes an absolutely fire- and shock-proof structure, and if we add thereto iron or copper ornamentation, we have all that the most exacting demands may require."

Farming as a Profession.

Probably no man in the country is so well qualified to discuss authoritatively the attitude of young men today toward farming as a profession as L. H. Bailey, director of Cornell University Agricultural College. Professor Bailey's presentation in the July Century of the reasons many intelligent men urge against farming as a life work has excited wide discussion. In the August Century he will give the reasons which are leading young Americans to-day to follow farming. He has summarized for this second article the replies sent him by sixty-eight city-bred or town-bred students, of Cornell University, who intend to pursue farming—farming considered in its broad sense—as a business. The replies considered by Professor Bailey in the forthcoming article are marked, he says, by the prominence given to ideals and by the subordination of mere personal emolument and desire for money. This authoritative presentation of facts, especially in connection with Professor Bailey's discussion of "Why Do the Boys Leave the Farm," can not fail to be of great suggestive interest and value.

Crop Conditions on July 1, 1906.

The Crop Reporting Board of the Bureau of Statistics of the Department of Agriculture finds, from the reports of the correspondents and agents of the Bureau, as follows:

Preliminary returns show the acreage of corn planted to be about 95,535,000 acres, an increase of about 1,524,000 acres, or 1.6 per cent, as compared with the estimate of the acreage planted last year.

The average condition of the growing crop on July 1 was 87.5, as compared with 87.3 on July 1, 1905, 86.4 at the corresponding date in 1904, and a ten-year average of 86.4.

The average condition of winter wheat on July 1 was 85.6, as compared with 83 last month, 82.7 on July 1, 1905, 78.7 at the corresponding date in 1904, and a ten-year average of 79.4.

The average condition of spring wheat on July 1 was 91.4, as compared with 93 last month, 91 on July 1, 1905, 93.7 at the corresponding date in 1904, and a ten-year average of 88.2.

The average condition on July 1 of spring and winter wheat combined was 87.8, as compared with 85.8 on July 1, 1905, and 84.5 at the corresponding date in 1904.

The amount of wheat remaining in

the hands of farmers on July 1 is estimated at about 46,053,000 bushels, equivalent to about 6.6 per cent of the crop of last year.

The average condition of the oat-crop on July 1 was 84, as compared with 86 last month, 92.1 on July 1, 1905, 89.8 at the corresponding date in 1904, and a ten-year average of 89.4.

The average condition of barley on July 1 was 92.5, against 93.5 one month ago, 91.5 on July 1, 1905, 88.5 at the corresponding date in 1904, and a ten-year average of 88.2.

The average condition of winter rye on July 1 was 91.3, as compared with 92.7 on July 1, 1905, 88 at the corresponding date in 1904, and a ten-year average of 90.1.

The acreage of potatoes, excluding sweet potatoes, is less than that of last year by about 38,000 acres, or 1.3 per cent. The average condition on July 1 was 91.5, as compared with 91.2 on July 1, 1905, 93.9 at the corresponding date in 1904, and a ten-year average of 92.1.

The acreage of tobacco is less than that of last year by about 40,000 acres, or 5.2 per cent. The average condition on July 1 was 86.7, against 87.4 one year ago.



President O. H. Longwell, who has been at the head of Highland Park College, Des Moines, Iowa, since it was opened sixteen years ago, has built up that splendid institution into the largest college in the country without a church or millionaire behind it. Highland Park College closed its most successful year this July, the attendance aggregating 2,148, and the graduating class numbering 305, representing fourteen States: Iowa, Missouri, Illinois, Minnesota, Nebraska, South Dakota, Colorado, Wyoming, Montana, Washington, North Dakota, Kansas, Tennessee, and Louisiana. During its lifetime, Highland Park College has had 23,427 students enter, has graduated 2,577, and has become one of the leading educational institutions in the Middle West. Being open forty-eight weeks in the year and the student being allowed to enter at any time, Highland Park College has appealed particularly to the boys and girls of the farm and country town. The students may secure both room and board at the college, and thus a pleasant and congenial home life is assured them. President Longwell is devoting his life to the cause of education in the Middle West, and is now in the very prime of his powers.

Preparing for the Kansas Semi-Centennial.

J. E. Junkin, chairman of the publicity committee of the Kansas Semi-Centennial, has issued a little book giving the names of the men who have in charge the preliminary work of the proposed Exposition. These gentlemen have all given their consent to act. Their work will be largely on account of State pride, and inspired by a desire to give the Exposition a good send-off. The planning and preliminary work have already begun, and will be pushed vigorously until the Exposition, in the full glory of its completeness, will attract the world to our doors.

Mr. Junkin says: "The newspapers of Kansas have never yet failed to do the right thing by any proposition which promised substantial results to the State. So far they have treated the Exposition very fairly. Some have done a little kicking, but a certain amount of criticism is to be expected. That is an essential part of the newspaper business. It does good if made in the right spirit and with a desire

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to improve conditions. But now, with the Exposition almost an assured fact, let us get down to business and give it our heartiest support.

"The State Editorial Association passed unanimously the following resolution at its recent meeting at Junction City:

"Resolved, That the State Editorial Association heartily indorses the proposed Kansas Semi-Centennial Exposition in 1911, and pledges its earnest support to this proposition, which means so much to the material prosperity of the State, as well as spreading abroad the fame of our commonwealth. The admission of Kansas into the Union in 1861 was an event of so much importance that we are justified in inviting the whole country to help us celebrate."

"The Semi-Centennial needs the en-

couragement that the State press can give, and the committee on publicity trusts it will have your cordial cooperation. If you have any suggestions to make, print them in your paper and send us marked copies, or fire them in direct to any member of the committee."

Write Mr. Junkin at Sterling for a copy of the booklet.

Polliteness His Strong Point.

A teacher in language puts this sentence on the board for correction: "The horse and the cow is in the lot," and asked what was wrong. At first no one answered; finally a small boy raised his hand. "What is it, Johnny?" asked the teacher. "You should put the lady first," corrected Johnny.

Dairy Interests

Information Concerning Milking-Machines.

I understand you have at the experiment station a milking-machine. Have you hand-power machines, and if so what is the price and where are they manufactured? Do you think they will be a success? JOHN DAME, Elk County.

We have used two patented milking-machines for the past few months, the Kline, manufactured at Roanoke, Va., and the Burrell, Lawrence & Kennedy, manufactured at Little Falls, N. Y.

From our limited experience, we believe that they will be a practical success. The barn should be equipped with stanchions and an air-tight iron, one-inch pipe which is conducted along the manger with a valve connection at every second stall. A steam- or gasoline-engine is placed in one corner of the barn, partitioned off by itself, so that the noise will not disturb the cows. A vacuum-pump is also placed in the same room. The engine operates the vacuum-pump, which, being connected to the pipe, produces a suction by drawing the air from the pipe. Rubber tubes are placed on the connections at every second stall and connected to a 5-gallon pail, which is equipped with a trip valve and two connections. Rubber tubes are placed on these connections with four teat-cups on each tube. These are fitted to two cows so that the milk from the two cows is conducted into the same pail. After the connections are made and the valves open, the suction operates the trip valve of the pail which checks the suction every two or three seconds, producing a pulsation similar to that of natural hand-milking. The cows soon become accustomed to the machines and take kindly to this method of milking.

The gasoline- or steam-engine costs about \$150, vacuum-pump \$100, each pail and equipment \$75, and the cost of pipe and labor about \$25, making a total cost of \$350 for equipment, including one pail.

The sanitary condition of the milk thus produced is far better than that of hand-milking, for the milk is not exposed to the air of the barn, the milker's hands, or the dust from the cow's side and udder. If there is any further information we can give you at any time, we will be glad to hear from you. C. W. MELICK.

New Assistant Professor of Dairy Husbandry at Missouri.

Professor R. H. Shaw, until recently of the University of Nebraska, has been chosen to take charge of the extensive milk investigations which are being started at the Missouri Experiment Station under the direction of Prof. C. H. Eckles. This new work is being done with the cooperation of the Dairy Division, at Washington. Professor Shaw represents the Dairy Division and at the same time holds the position of assistant professor of dairy husbandry in the university.

Professor Shaw is a graduate of the New Hampshire Agricultural College and later spent two years in Zurich, Switzerland, studying chemistry. He has since held experiment station positions in New Hampshire, Wisconsin, Kansas, and Nebraska with marked success.

The investigations which are just now beginning will deal with questions concerning the effect of feed, breed, and individuality of the cow on the chemical composition and other properties of milk and its products.

What Kind of Cow?

To the discussion of the question, What kind of cow? E. K. Slater contributes the following in the North-western Agriculturist:

If a man aspires to be a dairyman in every sense of the word, he must keep only well-bred dairy-cows, and care for them as such cows should be cared for. This is a fact conceded by every dairy expert in the country, and every dairyman who has gone into the business in the right way has received handsome returns.

This fact has led our dairy schools, our farmers' institutes, and dairy authorities in general, to go out, in the past, and preach the highly bred dairy-cow to our farmers. They have evidently overlooked the fact that our farmers, as a class, are not dairymen and not likely to become such in one year or ten years. They are divers-

fied farmers, carrying on the business of milking cows as a side issue.

While I fully appreciate the profits to be derived from carrying on the dairy business wholly as a business, I am not ready to claim that our farmers would be wise to all turn right over to exclusive dairying; I think they would make a mistake by doing so. More of them would fall than would succeed.

If the average farmer is to become a good dairyman, he must learn the business by degrees. Let him take the common cows he has on his farm, and by careful breeding and selecting let him build his herd and his knowledge of the business up to a point where he can make success of real dairying. Many of our dairy schools and authorities are beginning to see that this is the true course, and are turning the switches which will bring them out on the main track, where they can make better time in carrying the real, live, practical gospel to our farmers.

Let us urge our farmers to take a little better care of the cows they now have, feed them a little more regularly and better feed, sell off a scrub cow occasionally, and let some good heifer take her place. If we can get the farmer to make a 10-per-cent improvement in his herd and in his methods this year, we can hope for a 25-per-cent improvement next year. As he begins to make these gradual improvements, he will see for himself that there is something in it, and he will go on making still greater improvements.

Let us show the farmer that we are practical. Don't get the studies too far ahead of the pupil.

Afraid of the Milking-Machine.

A writer in the Country Gentleman suggests as follows:

"The whole 'yeomanry' of the world, and the United States in particular, should pray that by some dispensation of the Ruler above, this Buffalonian, virtually worse than a revolutionist or anarchist, be taken where we will not any more have to torment ourselves about milk, certified or not, milk-powder, or milking-machines. According to Mr. C., every city and town will have its grand barns, each with 200 to 300 cows, all milked by machine.

"In the absence of more powerful authority, the Grange ought to appoint days of prayer, that no such deviltry come upon us. A milking-machine! That is the thing our Rockefeller type of men are waiting for. Tremendous barns will then rise all over the country, besides the city plants, and the tens of thousands independent dairymen will be half enslaved, just as instead of about 2,000 free oil-refiners we now have one despot and a few hundred sycophantic undermen. What are the men to do all over the country with dairies of from 5 to 50 cows, when everywhere grand barns with 500 or more cows apiece will rise like mushrooms? Then we will need only rebating and the private car to put on the last touch."

Cost of Can of Milk.

E. Landwer, a Barrington, Ill., dairyman, figures the cost of producing a can of milk as follows:

Thirty-two cows produce 2,884 cans a year, or a little over six cans daily. Average price per can, 85 cents, making a total of \$2,451.40 for milk. Sale of thirty-two calves at \$3 each, \$96. Estimated value of fertilizer is about \$5 per ton, and five tons per year to each animal makes \$7.50 per year for each animal, or a total of \$240 for fertilizer. The sum total can then be summed into receipts: Sale of milk, \$2,451.40; calves, \$96; fertilizer, \$240; making a total of \$2,787.40; expenses, bran, \$246; corn, \$55; fodder, \$125; hay, \$400; pasture, \$100 for care (\$1

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There's a chance for you to get 2 cents a pound more for your cream—\$4 to \$6 a year more from each cow. Creameries are commencing to grade cream—to pay 2 cents more a pound for No. 1 cream than for No. 2. As No. 1 cream must be thick—must contain at least 30 per cent butter-fat—you can see how necessary it is, when buying a cream-separator, to get one that will be certain to skim a thick cream, for you surely intend to get the extra profit No. 1 cream brings. If your creamery is not already grading cream, it probably will within a year or two. Isn't it wise to think of that, and get the right separator, when you buy? This is a sure guide when buying a separator—the simpler the separator bowl, the easier to skim thick cream. The Sharples Dairy Tubular Bowl is the simplest made, nothing inside to clog.

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The Sharples Dairy Tubular Separator can skim cream as thick as 60 per cent—puts you on the safe side. Gentlemen:—I purchased a Tubular Separator. My cream has tested as high as 60—the richest and best that has ever been brought to the store. MYRTLE E. AUSTIN. (Address on request.)

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per head per month), \$284; interest on investment, \$192; making a total of \$1,681.

The expenses from receipts leaves a balance of \$1,106.40.

Thus it will be seen that it costs as near as can be figured just 58.6 cents a can to produce a can of milk.

I hope you will think about it, and realize that some farmers are doing business; and one more thing I wish to say, that there is more room for improvement in dairying than in any

other line of business, and we should study out these improvements, publish them, and not keep our wisdom under a bushel basket.

A pound of butter can be produced about as cheap as any kind of meat, it is freer from disease and is always more healthful. When placed upon the market the butter is worth 20 to 25 cents, while the live stock on foot is worth 4 to 6 cents.

Save all your Cream

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Apple-Trees Dying.—Borers in Peach-Trees.

(Continued from page 773.)

year-old trees will be found affected at digging time, their unfitness for sale bringing considerable loss to the nurseryman who is too conscientious to sell them to the unwary.

As there is practically no cure for the tree once it is badly affected, it should be the care of the planter to reject and burn every tree with a gall, however small this may appear.

While the young gall operates on one side, and does not at first greatly check the growth of the tree, the trouble generally extends each year over a greater part of the collar, and recovery of the dead place through a healing extension of the bark is scarcely ever accomplished. Trees will be found with a large gall on one side, the roots below dead, yet the tree apparently thrifty. But the extension of the gall to other spaces is practically certain, and the consequent failure of the tree is finally to be expected. From personal knowledge of conditions in orchards not far from you, I think it quite possible that the crown gall may be partly responsible for the trouble you report.

With regard to the agency of the blight in completely killing trees, while it is frequently the cause of rapid failure in most sorts of the pear, it is only with occasional sorts of the apple that its attacks are finally fatal, and these susceptible sorts are not the ones usually grown in Kansas orchards. However, it is not uncommon to find trees of even our standard sorts to give way as individuals to the progressive attack of blight. In bad cases it is of no use to try to cure the tree, but is better to cut it out at the end of its productive growth.

The peach is subject everywhere to the attacks of the peach-borer, and exemption from this insect is to be obtained only at the expense of constant vigilance exercised in digging out the worms, spring and fall. Mounding the tree at base, or wrapping the trunk serves to change the place of the attack, but worming the tree is the finally successful method.
 E. A. POPENOE, Entomologist.

Blister-Beetle in Alfalfa-Field.

The spring of 1905 I sowed one acre of alfalfa which I cut three times. I pastured the fourth crop very close. This spring I cut the alfalfa on May 28, about one-tenth of the blossoms being out. It was good, ranging in length from one to three feet. It started again very vigorously and has grown quite well, but there are a million bugs in the one-acre field, like the one I enclose, and they are eating the alfalfa leaves very fast. Will you please tell me what can be done to get rid of the bugs, or will they die when they have eaten all the alfalfa? I sowed three and one-half acres more this spring adjoining this one-acre patch. I sowed oats for a nurse-crop. Do you think that is all right?
 F. L. ADAM.

McLean County, Illinois.

The long, slender, grey beetle that you send with the statement that it is eating your alfalfa is a specimen of the ash-colored blister-beetle, well known over the entire Middle West as a foe to the potato, alfalfa, and some garden-crops. It is related to several other beetles of similar shape, in color black, brown, or grey, that go by the same name of blister-beetle, from the fact that portions of the skin of the insect, placed on the tender skin of man, with moisture, will raise a blister. An European species of this family of beetles is known as the Spanish fly, and has a use in medicine. Our native species are of similar value, if it were desired so to employ them. Most of these seem to be spu-

cially fond of the foliage of the various plants of the potato family, and any year they may be expected to attack suddenly and in great swarms the potato-field, especially in the West, where the native species are large and numerous. From their wandering habit, and their partiality for the company of their fellows, their advent in the potato-field is always somewhat alarming, but they frequently go as unexpectedly as they come, though I am bound to add that they usually go only after they have done the maximum of damage. In their earlier stages, these beetles are curiously rather a benefit than otherwise, as they are semi-parasitic on underground insects, and are known to destroy many eggs of the grasshoppers. However, in case of their attacks on garden- and field-crops, we are warranted in forgetting the good they may have done, and in endeavoring to keep them from destroying the plants. Practically, the question resolves itself in killing the beetles by poison, or driving them out by some means. The former method has the greater value, and may be done in the way in which the Colorado potato-beetle is combated, i. e., by the direct application to the plants to be protected of some arsenical poison, such as Paris green or arsenate of lead. In the potato-field the poison is applied either by spraying with water, or dusting on dry, the former mode of application being the most economical and convenient after the requisite apparatus is once provided. The blister-beetles are more tenacious of life, and it will seem sometimes that they are not dying fast enough, but they will finally succumb to the poison or forsake the field.

The habit of the blister-beetles of running rapidly from a place where they are disturbed in their feeding, as by a man handling a brush or beater, striking the foliage on which they are feeding, has been taken advantage of in some instances to drive the insects into a windrow of straw, in which they will hide, and which can then be burned to kill them. In my opinion, even in an alfalfa-field, where the attack is concentrated locally, the simplest plan is to give the beetles a good dose of poison on their food. Where they are generally distributed, this will not be a feasible plan, probably, unless the attack occur on the first short growth after mowing, when the application of poison need not endanger the use of the hay of the following cutting.

As to time and mode of seeding alfalfa, the experience of the writer favors August seeding without a nurse-crop, in ground reasonably free from weeds, and put into condition early. A crop of millet affords a very good state of the soil to be followed the same summer by alfalfa, the ground to be broken at once, well harrowed till seeding time to keep down weed growth, but otherwise not to be disturbed.
 E. A. POPENOE,
 Entomologist Kansas Exp. Station.

Fall Web-Worm.

I have a young orchard ten years old. For the last two years a web-worm or caterpillar has stripped one-third of my orchard of leaves and fruit. I wish to know how to destroy this pest and take care of my orchard. If you can give me any information, I will be thankful. I have 900 apple-trees, 500 Gaño and Ben Davis, balance Missouri Pippin and Winesap. Most of them are healthy trees. Hereafter, I wish to take care of them. R. J. WOODWORTH.
 Anderson County.

The insect you describe is probably the fall web-worm, which has already begun its work and which will be in evidence until fall. The insect is certainly two-brooded with us, and the second generation of this season will continue the work irregularly until frost. This species attack also many sorts of shade- and forest-trees, and becomes a pest in park and street. It is attacked by several species of parasites which, however, are not always able to keep it in check. As the eggs are laid on the tips of the branches in clusters, it is easier to fight them at their first appearance, when they may be killed by the use of a coal-oil torch or swab on a pole, which, if properly handled, will scorch the worms without injuring the foliage materially. Where they are more abundant, especially in the orchard, it will be found a simple matter to kill them by spraying with an arsenite, as is done with other leaf-feeding caterpillars in fruit-trees. Press Bulletin No. 145, of the Kansas Experiment Station, gives a full account of the insect and the means to employ in its destruction, and a copy of this will be sent to any applicant free of cost.
 E. A. POPENOE, Entomologist.

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White \$2, Black \$2, \$1 and \$5 per 100; Buff Leghorns, Orpingtons, Cochins, S. & D. C. B. and White Leghorns, B. and W. Rocks, W. and S. L. Wyandottes, L. Brahmans, \$1.50 to \$2.00 per 15. Toulouse Geese eggs 30c each. M. B. turkeys, \$1.25 and \$2 per 9. Imported and native high-scoring blood in our yards. Mention Kansas Farmer when writing. America's Central Poultry Plant, J. A. Lovette Mullinville, Kans.

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ONE DOLLAR buys 15 eggs of either Rose Comb R. I. Reds or Barred Rocks from prize-winning stock at the college show. Mrs. A. J. Nicholson, Manhattan, Kans.

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The Poultry Yard

Conducted by Thomas Owen.

Information on Rhode Island Reds.

Will you please tell me the good and bad qualities of Rhode Island Reds?

What kind of sitters and mothers do they make? Do they lay a white or dark egg? How large are they, and do they make as good farm chickens as some of the more common breeds? Which is the better, the rose-comb or single-somb? A SUBSCRIBER.

Cowley County.

Answer.-We will tell you some of the good qualities of the Rhode Island Reds; we are not supposed to know any of their bad qualities. Indeed, we do not know that they have any of the latter, for in a good many talks with breeders of the Reds, we never heard them mention any bad qualities. They are extra good layers, especially winter layers, beating all other breeds at the Experiment Station, at Manhattan, for winter laying. They are nice, plump fowls, and dress nicely, without any dark pin-feathers. The cock weighs 8 1/2 pounds, the cockerel 7 1/2 pounds, the hen 6 1/2 pounds, and the pullet 5 pounds. They make extra good mothers and sit similar to Wyandottes. They lay a brown egg. They make an extra good farm chicken, being good foragers and excellent layers, and have a fine carcass when ready to market. As to rose or single comb, the rose-comb is supposed to be an improvement over the single-comb in all varieties, but the single-comb of the Rhode Island Reds is not large anyway, and is no detriment to them. It is very much like the comb of a Plymouth Rock. The Reds are getting to be very popular, and more of them are exhibited at our shows from year to year.

Food for Chicks With Bowel Trouble.

EDITOR KANSAS FARMER:-I see in last week's KANSAS FARMER that Mrs. M. E. M. complains of her chicks dying. The rolled oats and millet are the cause of the trouble. They are both very loosening for the bowels. If she had fed a mixture like I do, I don't think she would have lost any chicks from bowel trouble. I feed wheat, corn-chop, Kafir-corn, oat-flake, crackers, coarse sand, oyster shell, charcoal, a little millet, and alfalfa leaves. Use more of the first three than any of the others. Grind all in a large coffee-mill. I have had the best of luck raising incubator chicks. S. M. MCHARG, Grant County, Oklahoma.

An Australian Duck Farm.

The success of the Australian export trade, in meat, poultry, and other food produce, has led to another development, and it will not be very long before Australian ducks are found plentiful in the British market. Already several consignments from Sydney have reached Liverpool, and the readiness with which they passed into consumption indicated that they had fully met all market requirements; an important fact, for in New South Wales the facilities for duck farming are unsurpassed.

What can be done in the way of duck farming in the colony has been illustrated at Botany, a Sydney suburb, where, within the past three years, a duck farm on an extensive scale has been established. The farm is situated on a sandy flat, covered with scrub, which affords ample shelter for the birds; and water, obtained by means of tube wells, is plentiful. The annual output of ducks is from 10,000 to 12,000.

For export purposes, the Aylesbury kinds are preferred, British consumers not caring for Muscovy or dark, yellow-billed ducks. In one yard, with plenty of scrub and water, are hundreds of ducks without drakes. These are kept simply for laying eggs for the market. In another yard of the same character are Muscovy ducks and drakes for breeding, and in a third yards are the breeding Aylesburies.

The Muscovys are excellent incubators. As soon as the young ducks are hatched they are removed, and fresh eggs placed under the birds, which keep on sitting. Sometimes a third change is effected. A number of hens are also kept sitting on ducks' eggs, a small yard for food, water, and exercise being provided for each half-dozen birds. The nests are made in the sand, and lined with straw. Hatching is mostly performed, however, with the assistance of incubators.

The eggs intended for market are

taken into a shed, where they are cleaned, dried on shelves of wire netting, and packed in cases of the requisite shape and size. Over 600 dozen eggs are sent away each week to the local market. The fertile eggs are taken into another shed, where there are ten incubators, holding 100 eggs each, another holding 139 eggs, and four holding 200 each. The "mothers," to which the ducklings are removed after leaving the shell, are in another shed, each "mother" accommodating 400 ducklings.

When the young ducks are sufficiently large, they are let out into small yards, reached by slanting platforms. None of the ducks are handled from the time of leaving the incubator until required for market. When they are driven about, a flag attached to a pole is used. Each yard has one or two large iron trays, in which the ducklings drink and paddle about, but care has to be taken that they are not exposed to rain, which, strangely enough, is apt to make them sicken and die unless they have reached a certain age or size.

The business of successional rearings goes on all the year round, slackening in the winter and increasing in the summer. The full-grown ducks have a yard to themselves, containing a portion of a wide creek and plenty of scrub. Here large numbers of beautiful, plump, happy-looking birds are to be seen enjoying themselves to the full, sporting around in the water, or comfortably squatting about on the sand or under the shade of the scrub.

The young ducklings are fed with bran and pollard in the morning, and with wheat at night. As they grow older, lettuces and cabbages, several cart-loads a week, are used, also boiled sheeps' livers and lights. The local demand for ducks is large, but the duck farmers are naturally anxious to secure an export trade, as well as enabling them to further extend their operations, which have from the first proved of an exceedingly remunerative character.-Poultry, England.

Poultry Notes.

N. J. SHEPHERD, ELDON, MO.

The one decided advantage with the incubator is that the time of hatching can be more certainly controlled. With hens, one must to a great extent await their pleasure, and sometimes in the spring this makes hatching late. With the incubator the hatching can be done as early as desired.

In no case can one make good, mature fowls of poorly fed and badly managed chickens. It is good economy first and last to feed well, for the fowls will then thrive and always be in good condition to ship to customers, to show to visitors, or for table use.

The poultry business either as a fancy or for commercial purposes is a delicate art, requiring patience, care, and skill, and the chances for success depend more upon the operator than on his stock, and in nearly every case of failure the cause can be charged to the man and not to his fowls.

Selections should be made annually to keep up the stamina and vigor of the fowls, and to supply the places of such birds as have become too old or for other causes unprofitable to breed from. Careful selection of the best each year will aid materially in building up the flock. With the average flock, at least, it rarely pays to sell the best.

There are certain conditions in the care of young chicks which are more favorable in a general way than others. When chicks have perfect freedom, they find what the system craves and what instinct teaches them they need to a certain extent. When in close confinement this is, of course, impossible and more care is necessary in feeding and supplying their wants.

After the fowls begin to molt, they should be given all of the ground bone they will eat, keeping a supply where they can help themselves. If confined, they should have a meal of meat once a week. The shedding of feathers is a severe tax on them and they should receive good treatment. If the hens are well cared for during molting, they will begin to lay by winter. It is the early-hatched pullets and the early-molting hens that make the best winter layers.

While turkeys at this time, if given the run of the average farm, will usually be able to pick up the better part of their living, yet when a thrifty growth is desired, it will nearly always pay to feed at least once a day with good sound grain. The better growth and thrift maintained will make this feeding profitable. In addition, feeding regularly in this way will be a great incentive to keep them coming

BROWN CHINA GEESSE, Indian Runner Ducks, also Barred Rock cockerels. Prize winners at State Poultry Show. O. C. Sechrist, Meriden, Kansas.

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More than your money's worth in incubators during the summer. We have them all built 40, 50 or 90 days to prove it. 5 year Guarantee. Now is the time to write to M. M. JOHNSON, The Incubator Man, Clay Center, Neb.

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One of the remarkable things about Eastern Arkansas and Northern Louisiana is the fact that cleared land rents for \$5 per acre cash, and can be bought for \$7.50 to \$15 per acre. It costs from \$6 to \$10 an acre to clear it. Other improvements necessary are slight and inexpensive.

The soil is rich alluvial, or made. It produces a bale of cotton per acre, worth \$45 to \$60. This accounts for its high rental value. Other crops, such as corn, small grains, grasses, vegetables and fruits thrive as well.

Alfalfa yields 4 to 6 cuttings, a ton to a cutting, and brings \$10 to \$15 per ton.

In other sections of these States, and in Texas as well, the rolling or hilly land is especially adapted to stock-raising and fruit-growing. Land is very cheap, \$5 to \$10 per acre; improved farms \$10, \$15, to \$25 per acre.

The new White River country offers many opportunities for settlers. High, rolling, fine water-it is naturally adapted to stock- and fruit-raising. Can be bought as low as \$3 per acre.

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Address all orders to
The Kansas Farmer Company
Stock Printing Department
Topeka Kansas

home regularly at night. Turkeys are prone to wander off, and feeding regularly will aid materially in preventing this.

Poultry Pointers.

Lice and overfeeding are the main troubles with fowls in summer. Hens, when they cease laying, fatten very easily, and a fat hen is a thrifty candidate for all kinds of poultry disease. The remedy, of course, is to get rid of the lice and to give less feed, especially of the fattening kind.

Provide plenty of shade for your fowls during the heat of the day, and see that they have plenty of pure water. Give them the run of the place if possible, as that will tend to keep them healthier than when confined to short yards.

It is a good time now to be culling all the cockerels from the flock that you do not absolutely need for next year's breeding or selling. All that are off-color or off in shape or comb should be taken to the butcher's. You will get more money for them now as broilers than you will get after they are fully matured, besides saving the expense of feeding and caring for them for several months.

It is the flock that receives careful attention in the summer that does well in the fall and winter, when eggs command high prices.

If there is any season when neglect is more costly than at other times it is in hot weather. It is at this season of the year when the "little things" timely observed and promptly looked after forge the chain of success in poultry-keeping. By providing shade, exercise, and pure water, your fowls will not get debilitated and worn-out.

Never in the history of the West has poultry paid so well as the present time. This should induce every farmer to pay more attention to his fowls. Poultry is fast becoming as big a source of revenue to the farmer as his hogs and cattle, only the farmer is more neglectful of his fowls than any other thing he raises on the farm.

A mess of carrots or cabbage chopped fine should be given frequently to fowls, both young and old, for scarcely anything else conduces as much to their general healthfulness. All through the year vegetables are relished. Chop the vegetables fine and mix them with scalded or moistened meal or feed, raw or cooked, without grain. The fowls highly relish such a meal, and soon clean up every scrap.

Great productiveness in our hens is a trait which can be easily fixed by breeding. The principles governing our breeding are the same as those which apply to all other classes of animal breeding; it is only the application that differs. With the fancier it is feathers; with farmers it is eggs; both can be developed to perfection by the same principles of breeding. The pullets that lay first and longest are the ones from which to establish a prolific strain; and a careful watch should be kept for the earliest laying pullets, which should be marked and an account kept of the number of eggs they lay. Keep all such pullets and breed from them exclusively next season. Keep the strongest and best chicks and when they have reached maturity, remember that the males as well as females come from a laying strain. In mating them during the following year, cull out all the poor layers, and in a few years you will have a strain of heavy layers that will be a source of pleasure and profit to you.

See that the weaned broods have roomy coops now. They are now becoming too large to continue remaining at night in the small brood-coops, for crowding in hot weather invites trouble. A good, deep shed, open side facing the south, with the roosts back from the front, makes an excellent chicken-weaning place. The open side should be inclosed with fine, strong wire-netting. It is also a good plan to have a muslin curtain inside, that can be let down windy nights, if desired. A foot-wide board should be across the bottom of the open side, to which the wire-netting should be fastened.

The poultry industry is more evenly distributed than any other. There is no limit to the demand for poultry, not only for that which comes from the farms but of pure-breds. The packing-house scandals have disgusted thousands of housekeepers with canned and preserved meat, and fine, plump chickens are more in demand than ever before. Within the last twenty years there has been more attention given the breeding of poultry than during the previous fifty years, and the more the people become familiar with the value of poultry as a source of profit,

the greater the demand, the larger the profits, and the wider the field of operations. There is not a city, town, village, or hamlet that does not possess some specimens of the feathered tribes, and the breeders have done much to increase the interest. It costs but little to begin with a small flock of pure-breds, and they multiply rapidly.

If a bird is noticed to be moping around and breathes with difficulty, such are signs of indigestion and will soon be noticed. It is caused simply by feeding them on too rich food, and if continued, the disease, which appears trifling at first, will develop into something more serious and death will result. As soon as a bird shows the faintest symptoms of indigestion, it should be put on a plain diet, reduced in quantity. Administer rhubarb pills to the birds, which can be bought at any drug-store; and only about one-third of an ordinary-sized pill should be given each bird. Do not allow the fowls to become sick from such a disease as indigestion, but see that it is checked at once.

The Veterinarian

We cordially invite our readers to consult us when they desire information in regard to sick or lame animals, and thus assist us in making this Department one of the most interesting features of The Kansas Farmer. Kindly give the age, color, and sex of the animals, stating symptoms accurately, and 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 full name and should be addressed to the Veterinary Department of The Kansas Farmer, Topeka, Kans., or to Dr. O. L. Barnes, Veterinary Department, Kansas State Agricultural College, Manhattan, Kans.

If in addition to having the letter answered in The Kansas Farmer, an immediate answer is desired by mail, kindly enclose a 2-cent stamp. Write across top of letter: "To be answered in Kansas Farmer."

Lame Mule.—I have a mule that is lame in his right hind leg. The first notice I had of this was a sudden lameness the latter part of last March. This lasted about a week when he seemed to get "all right." On May 1, he got lame again, but has gradually become worse until now his pastern joint is hot and swollen and also has soft swellings on both hind legs at the hock joints, inside and out. The left front knee has a lump, as large around as a silver dollar, which is of a hard nature. He is a dark bay, 5-year-old mule, large and well built.

Mt. Home, Ark. M. T.
Answer.—I would advise you to have the following liniment put up at your drug-store: Tincture belladonna 4 ounces, tincture fluid extract phyto-lacca De Candra 2 ounces, tincture iodine 2 ounces, tincture cantharides 2 ounces, sufficient compound soap liniment to make a quart.

Cow Dry in One Teat.—I have a cow that was a heavy milker, and I made 10 pounds of butter a week when she was all right. One teat has become entirely dry, and it is a little fleshier than the others. It is not caked a bit and is perfectly natural in appearance. We know no cause for this, but think she has been neglected in milking.

Bethel, Kans. T. B. F.
Answer.—If you have a calf that you can turn with this cow, I think that the treat which is becoming dry will soon begin giving its normal flow.

Cows Give Bloody Milk.—Some time ago I wrote you concerning a cow that gave bloody milk and you prescribed rubbing vaseline and lard in the udder, which I have done; for a week or more the milk will be nice and clear, then again it will be clear blood with some small clots. I also have heifer that calved this fall that gives bloody milk from all four teats just as I finish milking; fore part of the milk is nice and clear. Can you tell me the cause and send me a prescription that I can get filled at the drug-store? I have been advised to give poke root; do you think it would be beneficial? If so, what is a dose?

Answer.—Probably this bloody milk has come from injury to the udder, and would advise using poke root on the udder once daily, rubbing thoroughly into the affected part. Then use camphorated lard, melting together four ounces of gum camphor in about six ounces of lard, stirring until cold. Rub this ointment into the udder after milking.

Sore Shoulders, Backs, Tails, Etc.—Sore shoulders, necks, backs, and tails usually occur from the harness not fitting properly, particularly during the warm weather when the animals sweat freely; the perspiration accumulates on the harness and the trouble is further aggravated by the settling of dust on the wet harness, the dust works into the skin and thus causes a sore which is hard to heal.

Many harnesses never see oil from the time they are purchased until they are worn out. It is a mistaken idea that it takes too much time to care for the harness; but it is not only money in the owner's pocket to keep the harness soft and thus prevent its wearing out, but it is also more comfortable for the horse that wears it, to have it soft and pliable. In addition to the hard harness that is so often the cause of sores might be mentioned the accumulation of sweat, dust, and dirt that becomes hardened on the harness during the time that the horse is at work, also improperly fitting harness. It might be better to have the collar good and tight than to have it so large that it rolls around the shoulder and not remaining in its proper place. It is generally understood that a collar should be sufficiently large to allow the arm to be passed between the lower part of the neck and the collar, giving plenty of room for the animal to breathe, but should fit down tight on the top of the neck. It is from an ill-fitting collar that sore necks and shoulders are caused, and if the sore is not properly treated, it may go for months before it is healed and then when healed there so often remains a hard, calloused lump that will start a fresh sore. The same general principles apply to the back; the saddle of the harness should be protected by a pad of some kind, known as a "housing;" the belly-band should be sufficiently tight to keep from slipping from one side to the other. The tail, too, often becomes sore from the crouper-strap being too short, as the tail generally gets sore after the back, because the saddle-pad is so often placed behind the sore on the back, thus making the crouper-strap too short. The tail more often becomes sore during fly time, when the tail is being switched constantly to knock off flies. The progress of these sores is generally rather rapid, and large, ugly wounds form that are oftentimes difficult to heal. When freshly formed, if the wound is washed freely with a common disinfectant, in order to remove the dirt that has been ground into the sore, and then the sore covered with an astringent powder, such as two ounces each of iodoform, tannic and boric acid, the sore generally heals very rapidly; but too often the wound continues to grow worse, with the formation of proud flesh, and a large callous is formed, being devoid of hair and tender to the touch. The proper treatment is to give the animal absolute rest for a time, the length of which will depend upon the rapidity with which the wound will heal after the calloused tissue has been removed. The callous growth should be removed with a sharp knife; the bleeding can be readily stopped by the use of a hot iron, and the wound then healed by the use of disinfectants and astringent powders. An alum astringent healing powder that is extremely valuable in healing these wounds can be procured at a drug-store.

As stated at the outset, preventive treatment is, of course, the best. Keep the harness oiled so that it will be soft and pliable and it will last much longer, as it will not crack and break; also keep the dirt washed off the collar-pad; in fact, keep the harness clean wherever it rubs on the horse.

From practical experience on the farm, I found that it was not until a special place was provided for cleaning harnesses that they were properly taken care of. None of us, during the cold weather, care to wash and oil a harness in a cold building, and also we might add the oil will not readily soak in unless the room is at least summer heat.

Cows Out of Condition.—I have two pure-bred Shorthorn cows that had trouble with retention of afterbirth this spring. I took the calf from one of them as she seemed in such bad condition. She has done fairly well since but pants upon being exercised to any extent. She still has a slight discharge, but is laying on flesh and eats well. The other cow is suckling a calf and is very thin, has a very offensive discharge, and appetite is not very good. I am feeding her about 1 quart of shelled corn. Her calf, a fine one at birth, is not doing well; he looks thin, and his coat is rough, but he seems to be getting plenty of milk from his mother, who is a strong milker. The calf had ulcerated navel cord for a few weeks after birth. I treated with an antiseptic called "Creolin Pearson," which healed it up, but am not sure it is entirely healthy. I passed my fingers over the part diseased lately. It seemed dried up and smooth, but noticed an offensive odor on my fingers afterwards. Both of the

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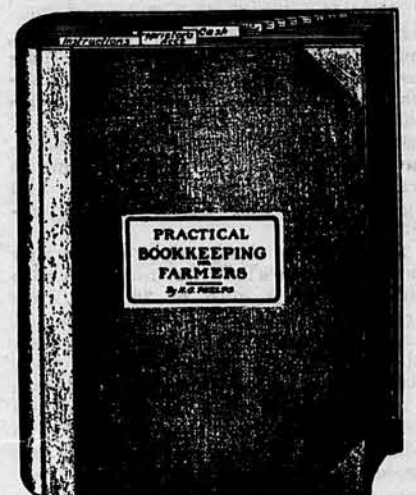
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cows are old ones, about 12 years, but are good ones and have been regular breeders and hope to get them in good health again by fall, at least, so as to breed them again. Would be glad to have you tell me what to do for them.

Alma, Kans. A. M. J.
Answer.—I think you had better use the creolin solution, will say a teaspoonful to a gallon of water and wash out the affected parts on your cow from which the discharge comes, and I think you will find your cows will immediately improve.

Horses With Distemper.—My horses are having the distemper and I would be very glad if you would send me a remedy for this disease by mail.

Burdett, Kans. J. C. B.
Answer.—I would suggest that you have the following prescription filled at your drug-store, and give all of your horses that have the distemper: 1 ounce pulverized nux vomica, 2 ounces pulverized iron sulfate, 1 ounce pulverized gentian, 3 ounces pulverized fenugreek, 4 ounces fennel, ½ pound sulfur, 8 ounces pulverized glycyrrhiza root Mix with 15 pounds of oil-meal. Give a heaping teaspoonful three times daily in ground feed if any of the horses have a swelling on the throat, apply a poultice of linseed-meal, changing the poultice several times daily until the enlargements break or are ready to open.

Pigs Afflicted With Mange and Thumps.—Please answer in your next paper what will cure mange on pigs and what is the cause of it, and what will cure the thumps in pigs.

Osage, Kans. A. F.
Answer.—We are sending you our press bulletin on lime and sulfur dip, and would advise your using it for your pigs having the mange. You had better dip them three times at intervals of ten days. Thumps in pigs is usually brought about as a result of a digestive disorder. If you will attend to the digestion of your pigs and see that their food agrees with them, I think you will have no further trouble from the thumps. C. L. BARNES.

BLOCKS OF TWO.

The regular subscription price of THE KANSAS FARMER is one dollar a year. That it is worth the money is attested by the fact that thousands have for many years been paying the price and found it profitable. But the publishers have determined to make it possible to secure the paper at half price. While the subscription price will remain at one dollar a year, every old subscriber is authorized to send his own renewal for one year, and one new subscription for one year, and one dollar to pay for both. In like manner two new subscribers will be entered, both for one year, for one dollar. Address, The Kansas Farmer Company, Topeka, Kans.

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This trip is absolutely free to any Kansas farmer's son or daughter who will send us a club of 20 new subscribers to THE KANSAS FARMER at \$1 each. Remember that we pay your railroad fare both ways and your board bill for nine days in Manhattan. You have nearly six months in which to get these subscriptions. Send the names in as fast as you get them. Ask for sample copies. Get busy.

THE KANSAS FARMER COMPANY,
Topeka, Kansas.

Literal.

A Brooklyn public school teacher says that she once required a pupil to compose a sentence with the word "dogma" as the subject. The pupil, a lad of ten, after some deliberation, submitted his effort. It read as follows: "The dogma has five pups."

Send to A. L. Sponsler, secretary, Hutchinson, Kans., for a copy of the Kansas State Fair Premium Catalogue.

When writing advertisers please mention this paper.

Prevention of Disease as an Investment.

Probably no investment made by the stockman will bring him better returns than the money he expends for the prevention of disease among his stock. The old but true saying that "an ounce of prevention is better than a pound of cure" appeals to no other class more forcibly than it does to the stockman. The presence of disease of any nature works greatly to his disadvantage. To take certain precautions against the inroads of disease is better than an insurance policy against fire. Animals poor in health from any cause are in condition to give only poor results. This having been found to be true by progressive, up-to-date stockmen, we only voice the sentiment of those who know, when we say, prevent disease among your stock.

First and foremost, when purchasing animals, do not add them to your stock until you have satisfied yourself that they are free from disease, especially of a parasitic nature, as parasitic diseases readily infect entire herds. It is always easy to prevent the spread of such diseases by isolating the animal for a short time, dipping it in a proper stock-dip or hand-dressing it, then waiting a sufficient length of time to allow any disease to make itself manifest before allowing the suspect to run freely with the other animals.

Disease is propagated more quickly when animals are housed closely together for any purpose. Therefore, when such conditions prevail, ample room should be provided in barns, caravans, and sheds for the number of animals enclosed. They should not be huddled closely together, but should have plenty of air, light, and room to move about. Before going into such quarters, and especially if disease has been prevalent during the preceding season, the enclosures should be thoroughly cleaned and disinfected. Kresol Dip will render such places clean and free from disease, if used in quantities of one part of the Kresol Dip to 100 parts of water, the premises being thoroughly sprinkled and the walls sprayed with the solution. If such care be taken, disease will hardly ever present itself. These precautions will cost a great deal less than the treatment of the disease after it has made its appearance, for disease is sure to be followed by more or less loss both in stock, time, labor, and money expended for curative medicine. By the proper and intelligent use of disinfectants, and a reasonable attention to the comfort of the animals, disease may be practically kept away from any locality and money saved thereby. Kresol Dip, when used one part of Dip to 100 parts of water, is a powerful, practically non-poisonous, and effective disinfectant.

Shrieking and Shooting.

It is a comfort to realize when we hear people talking about "the good old times that used to be," that in some respects, at least, we show more common sense to-day. One instance is in our attitude toward women. There was a time when a woman was expected to shriek and faint in almost any emergency. It was even considered an attractive exhibition of dependence. To-day, we pardon lack of nerve and self-possession in a woman almost as little as in a man. The girl who rides and shoots has taken the place of the girl who used to shriek and faint. No small factor in bringing this welcome change about has been the campaign carried on by the J. Stevens Arms and Tool Company, Chicopee Falls, Mass., makers of the famous Stevens firearms, who have introduced our girls to the healthy, up-building sport of outdoor shooting. The company have issued a catalogue illustrating many varieties of light-weight rifles, shot-guns, and pistols, which girls all over the country are using to-day. It contains much useful and interesting information on such points as the selection, care, and testing of firearms, besides notes on ammunition, targets, etc. We understand this book of reference will be sent free to any one sending four cents in stamps, to cover postage.

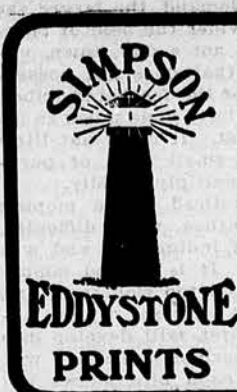
One of the best well-equipped colleges for students who wish to attend the college of law is the Creighton University of Law at Omaha, Neb. For special information look up their advertisement in this issue and write to E. F. McCartney, Registrar, Omaha, Neb.

Hull Brothers is the name of a new real estate firm at Hope, Kans. These gentlemen are well known young business men, having lived near Hope for many years. They have many farms for sale that are bargains, and any one contemplating the purchase of a home will do well to write them and get a full description of the lands they have for sale.

Grain in Kansas City.

Receipts of wheat in Kansas City yesterday were 630 cars. Saturday's inspections were 353 cars. Prices were ½¢ lower for hard and ¼¢ lower for soft wheat. The sales were: Hard wheat—No. 1 hard, 1 car 71¢, 1 car 70½¢; No. 2 hard, 1 car 71½¢, 1 car 71¢, 116 cars 70¢, 1 car 69½¢; No. 3 hard, 22 cars 69¢, 3 cars 68¾¢, 9 cars 68¢, 1 car 69½¢; No. 4 hard, 1 car 68¢, 2 cars 67½¢, 2 cars 67¢, 9 cars 66¢, 1 car 65¢; rejected hard, 1 car 66¢, 2 cars 65¢, 1 car 64½¢. Soft wheat—No. 2 red, 11 cars 71¢, 8 cars 70½¢; No. 3 red, 1 car 70½¢, 6 cars 70¢, 2 cars 69½¢, 7 cars 69¢, 1 car 69¼¢; No. 4 red, 1 car 68¢, 2 cars 67¢, 1 car 66¢, 2 cars 65¢; rejected red, 1 car 65¢; no grade red, 1 car 64¢; white spring No. 2, 1 car 69¼¢; No. 2 mixed, 2 cars 70½¢, 8 cars 70¢; No. 3 mixed, 5 cars 69¢; No. 4 mixed, 1 car 67½¢, 1 car 67¢, 1 car 66¢.

Receipts of corn were 43 cars. Saturday's inspections were 38 cars. Prices were unchanged to ¼¢ higher for white and unchanged to ¼¢ lower for mixed. The sales were: No. 2



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FOR SALE—Scotch Collie pups, from trained stock. Prices reasonable. Wm. Killough, Ottawa, Kas

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JOHN C. HARMON, Topeka, Kansas

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I accept your trial offer to new subscribers to send me THE KANSAS FARMER three months free. At the end of the three months I will either send \$1.00 for a full year from that date or write you to stop the paper, and you are to make no charge for the three months' trial.

Name.....

F. O.

cheap beef trade at this point. A few Western grass steers are now on the market, but not enough of them to establish a price criterion. The market for native butcher stock was very slow but without change in prices. There were hardly enough stock cattle of any kind here to establish a market. There is some demand for good class of weedy feeders but no reliable call for thin stock steers.

Receipts of hogs to-day were somewhat lighter than a week ago, but the falling off at all points is not sufficient to stimulate any marked strength to the trade. A few good light weights sold a shade stronger but everything in the heavy line and on packing order met rather slow demand with prices a shade lower. It would look as though curtailed receipts would cause a reaction in the market tone, but the weather at present is in favor of the packers, being entirely too warm for free consumption of meats, and this they are able to use as a bear leverage. Should these lighter receipts continue and the weather tamper down to a moderate condition, a stronger market might follow. The bulk of hogs sold at \$6.62½@6.67½ with tops making \$6.62½.

About 3,400 sheep arrived to-day, nearly all of which came direct from the Idaho ranges, the bulk were a class of stuff that has not been here lately and the trade could only compare them with the trade of about ten days ago. The market is in a slumpy condition at all points, and figures at which yearlings and wethers sold to-day were considered 25@300 lower than ten days ago. WARRICK.

\$10.50 to St. Paul and Minneapolis and Return

From Kansas City via Chicago Great Western Railway, account G. A. R. National Encampment at Minneapolis August 13 to 18. Tickets on sale August 11 to 13. Return limit August 31, with extension privilege. For further information apply to Geo. W. Lincoln, T. P. A., 7 West 9th St., Kansas City, Mo.

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Tickets on sale daily, good returning as late as October 31, liberal stop-over privileges allowed. Fast Colorado Flyer from Topeka 10.35 p. m., arrives Colorado early next morning. Rook ballast track and Harvey eating house. T. L. KING, C. P. & T. A., Topeka, Kans.

Kansas City Live-Stock Market.

Kansas City, Mo., July 23, 1906. There was considerable improvement in the cattle market last week, although the top on car loads was only \$6.10. This price was paid for fed Colorado, branded steers, and it was conceded that choice natives would have sold at \$6.25. Not as many fed cattle arrived as in recent weeks, sales 10@15¢ higher, top yearlings \$5.70, heifers \$5.60. Grass cattle sold 15@25¢ higher, top Kansas grass steers, \$5.30, bulk at \$4.25@5, grass cows also shade higher, \$2.50@3.75, grass heifers \$4.25. Veals were higher first of the week, but eased off a little, best ones \$5.75@6.25. The general cattle market was dull Friday, but this did not obscure the fact that it was a good week for sellers. The run to-day is 12,000 head, moderate for the season, and prices steady on good cattle, four loads at \$6.10, fed Colorados at \$5.75, Westerns and grass cattle steady to 10¢ lower to-day. Veals are 25¢ lower to-day. The bad influence of a heavy run and lower prices at Chicago had to be overcome to-day. The stocker and feeder trade is reviving a little, although supplies of this class are small. A few good, heavy feeders, at \$4.10@4.60, are being taken out for a short feed. Prices are a little stronger than a week ago. As yet, Kansas wintered cattle comprise the bulk of the grass offerings and these, of course, are all absorbed by the killers. We will soon have Panhandle stock, including the usual share of stockers and feeders, and a few shipments of Colorados will be here first week of August.

Fairly liberal hog receipts last week sold 10@15¢ lower by the end of the week. Run to-day is 6,000, market steady to shade higher, top \$6.62½, bulk \$6.50@6.60. Weights below 200 pounds now head the list, others 2½@5¢ below the top, account of the excellent shipping demand for weights around 190 pounds. General belief is that present depression is temporary, as conditions insure a large demand, while the supply is likely to diminish the next few weeks, along with reduced runs of fed cattle.

The packers' contention that mutton prices were too high was carried into visible effect last week, prices closing 40@60¢ off. Run is 4,000 to-day, market weak on sheep, lambs 25¢ lower, in sympathy with lower advices from the East. The berry and fruit season always has a bad influence on meats unless overshadowed by favorable conditions. Mutton prices are still remunerative, however, and the trade is not yet in what could be called a bad way. Some traders believe prices will gradually work upwards again. Best spring lambs sell at \$6.75@7.25, native wethers and yearlings \$5.25@6, ewes \$4.75@5.25. Thin Western stuff for the country last week, sold at \$4.25@4.75. J. A. RICKART.

South St. Joseph Live-Stock Market.

South St. Joseph, Mo., July 23, 1906. Very moderate receipts of cattle were about one-third Texans. The extremely hot weather has been a factor against the beef trade but with the very moderate receipts here there was an outlet at about steady prices although the trade movement was slow. The best of the offerings in the native steer line were some thoroughly fat beaves weighing under 1,300 pounds that sold at \$5.60, other good dressed beef steers in the handy weight line sold at \$5.20@5.55, while light weights of a good, fat kind went at \$4.90@5.25. Green native steers to sell below \$4.75 met very slow demand, as buyers preferred to wait and see what late trains brought to the Texan division. Texas cattle sold at about steady prices and are proving quite attractive to the

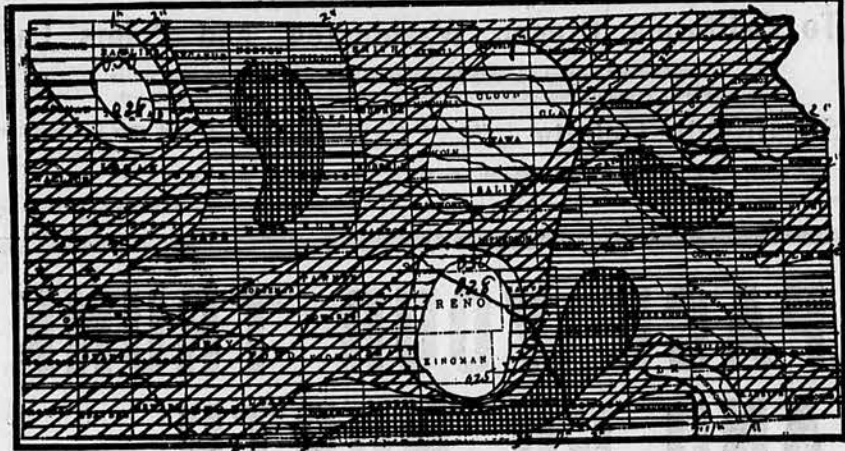
Weather Bulletin.

Following is the weekly weather bulletin for the Kansas Weather Service for the week ending July 24, 1906, prepared by T. B. Jennings, station director:

CLIMATOLOGICAL DATA FOR THE WEEK.

Table with columns for Temperature (Maximum, Minimum, Mean, Departure from normal) and Precipitation (Total, Departure from normal) for various locations in Western, Middle, and Eastern Divisions.

RAINFALL FOR WEEK ENDING JULY 21, 1906.



SCALE IN INCHES: Less than .50, .50 to 1, 1 to 2, 2 to 3, Over 3, T, trace.

GENERAL CONDITIONS. The close of this week completes the third week with the temperature continuously below normal. The highest recorded temperature was 93° at Ellsworth on the 21st and the lowest was 49° at Macksville on the 16th.

and 5° respectively below normal but the rest of the week was warmer. Only one day was clear, four were partly cloudy, and one cloudy. The rainfall was 0.78 of an inch. Cowley.—This was a fine week for growing crops but too wet for outdoor work. Rain on two days amounted to 1.77 inches. Six days were clear and two cloudy.

KANSAS FARMER.

Established in 1868. Published every Thursday by the Kansas Farmer Co., Topeka, Kansas. SUBSCRIPTION PRICE: \$1.00 A YEAR.

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Special Want Column

"Wanted," "For Sale," "For Exchange," and small want or special advertisements for short time will be inserted in this column without display for 10 cents per line of seven words or less per week.

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FOR SALE—Registered Jersey cattle. Two yearling bulls. Sires—A son of Bessie Lewis, 32 lbs. butter 7 days, and "Financial Count" (imported); granddam held Island butter record 3 years.

FOR SALE—The pure Cruickshank bull, Violet Prince No. 145647. Has been at the head of our herd as long as we could use him. An extra animal. H. W. McAfee, Topeka, Kans.

REGISTERED GUERNSEY BULLS—Ready for service. Also pure-bred Scotch Collie puppies. Dr. J. W. Perkins, 422 Altman Bldg., Kansas City, Mo.

GALLOWAY BULLS—4 head, 16 to 18 months old, suitable for service. All registered. Address C. A. Kline, R. F. D., Tecumseh, Kans.

ABERDEEN-ANGUS CATTLE and Percheron horses. Stock for sale. Garret Hurst, breeder, Peck, Sedgwick County, Kans.

A BUTTER-BRED Holstein bull calf—The best purchase for grade dairy herd. See report Santa Fe Dairy Educational Special. Start right in your breeding. Sixty-five head to choose from. Geo. C. Mosher, Hillcrest Farm, Greenwood, Neb.

FOR SALE—30 head of registered Hereford cattle, \$75 per head. Have quit farming. Would trade for Percheron horses or land. Hooper Monroe, Route 5, Lyons, Kans.

PEDIGREED SHORTHORN BULL 3 years old; sire Magenta, who cost \$1,000 at 8 months. Cheap. S. J. Rentz, Leavenworth, Kans.

light winds and only 0.28 of an inch of rain. Republic.—Uniformly moderate temperatures prevailed with three days clear, and four partly cloudy. The rainfall was 1.03 inches.

Saline.—The week, as a whole, was seasonable, the extremes of temperature being 67° and 96° and the rainfall 0.95 of an inch. Sedgwick.—Although the temperature during the week has been below the normal, the last five days have been hot and sultry and showers have been of almost daily occurrence, the rainfall amounting to 2.11 inches.

Smth.—This was a warm week with good rains and southerly winds. Stafford.—Pleasant weather, generally, was enjoyed this week. The rainfall was 1.28 inches.

Washington.—The week began cool and ended hot. The rainfall amounted to 1.25 inches. WESTERN DIVISION.

Decatur.—The days were of moderate temperature and the nights were warm. Five days were clear, one partly cloudy, and one cloudy. There were some very welcome rains received making the weekly total 2.25 inches.

Finney.—The week opened with good rains and these were followed with good rains Thursday night, giving about two and a half inches for the week. Temperatures were mild to warm and the wind was light.

Ford.—The week began with the temperature 15° below normal but by the last of the week it was 6° above normal. The rainfall amounted to 1.13 inches.

Gray.—The highest temperature was 90° on the 20th, the lowest 55° on the 14th, and the rainfall 1.28 inches.

Hamilton.—Temperatures rose gradually as the week progressed till the maximum reached 93° on Saturday, the 21st. Five days were clear and two partly cloudy and the rainfall was 1.23 inches which occurred mostly on the 18th.

REAL ESTATE.

FOR SALE—50 acre farm, 7 miles south of Oha-ha, 3 miles southeast of Belview, Nebraska. All good river bottom land suitable for gardening, fair improvements. Will sell or trade for Kansas land. L. F. Baumgard, North Cedar, Kans.

FOR TRADE—A \$12,000 Stock General Merchandise for a well improved farm, good land, prefer local in Eastern Kansas, west or north Missouri or Iowa land. Will pay no commission to agent, trade direct with owner. Address H. H. Stewart, General Merchant, Rich Hill, Mo. Farm must be clear of encumbrance.

HORSES AND MULES. FOR SALE—At reasonable prices, Black Imp'd Percheron stallions. E. N. Woodbury, Cawker City, Kans.

FOR SALE—One black team, 6 and 7 years old, weight 2,600 pounds. Mr. & Mrs. Henry Schrader, Wauweta, Kans.

LOST OR STRAYED—Brown mare, weight 1,100 pounds, white spot in forehead, barb wire cut on side, somewhat awaybacked. Suitable reward for return. J. W. Gillard, 536 Highland Ave., Topeka, Kans.

AGENTS WANTED. Wanted—Gentleman or lady with good reference, to travel by rail or with a rig, for a firm of \$250,000 capital. Salary \$1,072 per year and expenses; salary paid weekly and expenses advanced. Address with stamp, Jos. A. Alexander, Topeka, Kans.

HELP WANTED. FARM and ranch hands furnished free. Western Employ Agency, 704 Kansas Ave., Topeka, Kans.

SEEDS AND PLANTS. ONE DOLLAR will buy enough of McCauley's white seed corn to plant seven acres if you send to A. J. Nicholson, Manhattan, Kans.

SWINE. FOR SALE—20 good strong spring and yearling Berkshire boars that are just what the farmers want. Prices right. Address E. W. Melville, Eudora, Kansas.

MISCELLANEOUS. WANTED—100,000 subscribers for The American Farm Library, the great 96-page magazine of information for progressive farmers and stockmen.

HONEY—New crop. Write A. S. Parson, 408 S. 7th St., Rocky Ford, Colo.

ORDER A FERRET and get rid of your rats. Cope Bros, Topeka, Kans.

6,000 FERRETS—Some yearlings, especially trained for rats. Book and circular free. Levi Farnsworth, New London, Ohio.

7,500 SHARES of Uncle Sam Oil Stock for sale at a bargain. Address R. F., care of Kansas Farmer, Topeka, Kans.

WANTED—Non-uniform molders. Call or write Topeka Foundry, 318 Jackson, Topeka, Kans.

DOGS AND BIRDS—For sale dogs, hogs, pigeons ferrets, Belgium-hares, all kinds; \$40-page illustrated catalogue. C. G. Lloyd, Sayre, Pa.

WANTED—A good second-hand grain separator. Dr. Barker, Chanute, Kansas.

WANTED—At once sound young men for firemen and brakemen on railways; high wages; promotion; experience unnecessary; instructions by mail at your home; hundreds of good positions now open. Write National Railway Training Association, 620 Paxton Block, Omaha, Neb.

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State Grain-Inspection Department. Under the provision of an act to establish grades by the Governor of Kansas, passed and approved by the session of the Legislature of 1903, the commission will meet at the office of the Governor of Kansas at the State Capitol on the 6th day of July, 1906 at 10 o'clock A. M. for the purpose of fixing and establishing the grades and character of grain in the state of Kansas for the year subsequent to the first day of August, 1906, and for doing or performing any other acts that may be incumbent on said Board of Grain Inspection Commission. All persons interested in the buying, selling or handling of grain in the State of Kansas are invited to be present and make suggestions or objections to matters pending then before said Grain Inspection Commission. G. W. GLICK, JOHN T. WHITE, J. M. COREY, Grain Inspection Commission.

Stray List

Week Ending July 12. Anderson County—M. J. Keeton, Clerk. HEIFERS—Taken up by Frank Wuckowitsch in Union tp., one dark red heifer 1-year-old, with tip of left ear cropped; also one light red heifer; valued at \$8 each.

Week Ending July 26. Bourbon County—Chas E. Holstein, Clerk. MARE—Taken up by Wm. Alcorn in Scott tp., (P. O. Ft. Scott, Kans.), one bay mare, 15 hands high, 12 to 15 years old, wire cut on breast and badly cut on left hind leg; valued at \$50.

Meade County—D. P. Wylson, Clerk. MARE—Taken up by J. R. Gillick in Mertella tp. July 21, 1906, one black 4-year-old mare, weight 1,000 pounds, star in forehead, white hind feet; valued at \$50.

peratures and plenty of rain, the weekly amount being 1.58 inches. Thomas.—The highest temperature was 95° on the 20th, the lowest 51° on the 16th and 17th, and the rainfall 0.28 of an inch. Trego.—Moderate to warm temperatures prevailed. Good rains fell on four days, the total being 2.73 inches. Wallace.—This was a fine growing weather. There was 1.87 inches of rainfall, which was sufficient, and one electrical storm. The extremes of temperature were 93° and 52°.

Kansas Fairs in 1906.

Following is a list of fairs to be held in Kansas in 1906, their dates, locations, and secretaries, as reported to the State Board of Agriculture and compiled by Secretary F. D. Coburn. Allen County Agricultural Society—Frank E. Smith, secretary, Iola; September 25-28. Barton County Fair Association—W. P. Feder, secretary, Great Bend; August 28-31. Brown County—The Hiawatha Fair Association—Elliott Irvin, secretary; Hiawatha. Butler County Fair Association—W. F. Benson, secretary, Eldorado; October 1-6. Chautauqua County—Hewins Park and Fair Association—W. M. Jones, secretary, Cedar Vale; September 11-13. Clay County Fair Association—Walter Puckey, secretary, Clay Center; September 4-7. Clay County—Wakefield Agricultural Society—Eugene Elkins, secretary, Wakefield; first week in October. Cloud County Fair Association—F. W. Daugherty, secretary, Concordia; September 25-28. Coffey County Agricultural Association—S. D. Weaver, secretary, Burlington; September 18-21. Cowley County—Eastern Cowley County Fair—J. M. Henderson, secretary, Burden; September 26-28. Cowley County Agricultural and Live-Stock Association—W. J. Wilson, secretary, Winfield; October 9-12. Dickinson County Fair Association: H. C. Wann, secretary, Abilene; October 2-5. Elk County Agricultural Fair Association—E. M. Place, secretary, Grenola; September 19-21. Finney County Agricultural Society—A. H. Warner, secretary, Garden City. Franklin County Agricultural Society—Carey M. Porter, secretary, Ottawa; September 4-8. Greenwood County Fair Association—C. H. Weiser, secretary, Eureka; August 14-17. Harper County—Anthony Fair Association—L. G. Jennings, secretary, Anthony; August 7-10. Harvey County Agricultural Society—J. T. Axtell, secretary, Newton; September 25-29. Jefferson County Fair Association—G. A. Patterson, secretary, Oskaloosa; September 4-8. Jewell County Agricultural Fair Association—Henry R. Honey, secretary, Mankato; September 18-21. Linn County Fair Association—O. E. Haley, secretary, Mound City; September 11-14. Marshall County Fair Association—R. W. Hemphill, secretary, Marysville; September 11-14. McPherson County Agricultural Fair Association—E. S. Guymon, secretary, McPherson; September 4-9. Miami County Agricultural and Mechanical Fair Association—W. H. Bradbury, secretary, Paola; August 22-25. Mitchell County Agricultural Association—J. E. Tice, secretary, Beloit; last week in September. Montgomery County—Coffeyville Fair and Park Association—R. Y. Kennedy, secretary, Coffeyville; August 7-10. Nemaha County Fair Association—V. B. Fisher, secretary, Seneca; August 29-31. Neosho County—Chanute Fair and Improvement Association—A. E. Timpane, secretary, Chanute; August 28-31. Ness County Agricultural Association—R. D. McKinley, secretary, Ness City; September 5-7. Ness County—Utica Fair and Agricultural Association—R. C. Webster, Jr., secretary, Utica; August 30-September 1. Norton County Agricultural Association—M. F. Garrity, secretary, Norton; August 28-31. Osage County Fair Association—M. Carnaveaux, secretary, Burlingame; September 18-21. Reno County—Central Kansas Fair Association—A. L. Sponsler, secretary, Hutchinson; September 17-23. Republic County Agricultural Association—W. R. Wells, secretary, Belleville; September 11-14. Rice County Agricultural and Live-Stock Association—F. L. Goodson, secretary, Sterling; August 1-3. Riley County Agricultural Society—W. B. Craig, secretary, Riley; August 28-31. Rooks County Fair Association—E. L. Williams, secretary, Stockton; September 18-21. Shawnee County—Kansas Exposition Company—R. T. Kreipe, secretary, Topeka; September 10-15. Sheridan County Agricultural Association—L. G. Taylor, secretary, Hoxie; September 11-14. Smith County Fair Association—M. A. Diamond, secretary, Smith Center; August 21-24. Stafford County Fair Association—P. O. Gray, secretary, St. John; August 22-24. Sumner County—Mulvane Agricultural Association—Robt. P. Seyfer, secretary, Mulvane. Wilson County—Fredonia Agricultural Association—V. L. Polson, secretary, Fredonia; August 21-24.

Leading Western Fairs and Live-Stock Shows for 1906.

August 24-31, Iowa State Fair, Des Moines. August 30-September 7, Michigan State Fair, Detroit. August 31-September 7, Nebraska State Fair, Lincoln. September 3-7, Ohio State Fair, Columbus. September 3-8, Minnesota State Fair, Hamline. September 10-14, Colorado State Fair, Pueblo. September 10-14, South Dakota State Fair, Huron. September 10-14, West Michigan Fair, Grand Rapids. September 10-14, Wisconsin State Fair, Milwaukee. September 10-15, Interstate Fair, Sioux City, Iowa. September 10-16, Kansas State Exposition, Topeka. September 17-21, Kansas State Fair, Hutchinson.

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First published in The Kansas Farmer July 19, 1906. Sheriff's Sale.

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

William Prothrow, Plaintiff vs. Eugene F. Campbell, Mrs. Eugene F. Campbell, his wife, William Andrew Campbell, Mrs. William Andrew Campbell, his wife, John Campbell, Mrs. John Campbell, his wife, Albertus Campbell, Mrs. Albertus Campbell, his wife, Ida McGinniss, J. J. McGinniss, her husband, Josie Walker, A. E. Walker, her husband, Cora Henderson, Henderson, her husband, Josie Davis, Davis, her husband, and Margaret Campbell, a minor under fourteen years of age, defendants. Case No. 23403.

By virtue of an order of sale issued to me, out of said District Court, in the above-entitled action, I will, on Wednesday, the 22d day of August, 1906, at 10 o'clock a. m., of said day, at the east front door of the court house in the city of Topeka, in the County of Shawnee, in the State of Kansas, offer at public sale, and sell to the highest and best bidder, for cash in hand, all the following described real estate, to wit: lots numbered seven hundred and thirteen (713) and seven hundred and fifteen (715) on Buchanan Street in block eighteen (18) in Martin and Dennis addition to the City of Topeka, lying and situate in the County of Shawnee, in the State of Kansas. Said real estate has been appraised at \$544.00 and must be sold for not less than two-thirds of said appraised valuation.

The above described real estate under a judgment of partition in the above action is directed by said order of sale to be sold, and will be sold to satisfy said order of sale. A. T. LUCAS, Sheriff of Shawnee County, Kansas.

By J. A. Ostrand, Deputy. Whitcomb & Hamilton, Attorneys.

- September 17-22, Kentucky State Fair, Louisville. September 24-29, Interstate Live Stock and Horse Show, St. Joseph, Mo. September 28-October 5, Illinois State Fair, Springfield. September 29-October 5, Missouri State Fair, Sedalia. October 6-13, American Royal Live-Stock Show, Kansas City. October 20-November 4, Texas State Fair, Dallas. December 1-8, International Live-Stock Exposition, Chicago.

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