The Kansas Industrialist

The official KSAC newspaper in 1914 was a 12 x 17 inch tabloid-sized weekly produced in the college print shop and named “The Kansas Industrialist”. It contained articles on a wide mixture of topics, including social notices, humor, alumni notes, information on the various departments in the college, and served as an outlet to distribute research and extension information to a wider audience in the state.

The issue of Saturday, May 30, 1914, was particularly relevant to this department. Excerpts from that Volume 40, Number 33, have been reproduced below. The editor owes a debt of gratitude to Dr. Dale Eustace for calling it to his attention. No original copies remain, but they are available on microfilm in the Archives and Special Collections Department of KSU’s Hale Library. The four pages were printed from the film to a photocopier then scanned with OCR (optical character recognition) software to convert it to editable text. Owing to the rather poor condition of some sections, considerable correcting had to be done. If any faults have slipped through, blame this on the editor, not the original writers or printers.

Selections from:
“Milling Number”
The Kansas Industrialist
Volume 40, Number 33
Saturday, May 30, 1914

STANDS ALONE IN WEST

MILLING INDUSTRY DEPARTMENT IS UNIQUE IN THIS REGION

Pennsylvania State College the Only Other Institution to Give Definite Work
In Subject-Local Equipment and Faculty

The department of milling industry at the Kansas State Agricultural College is one of two such departments in the United States attempting to teach students practical milling, and the only one in
the West. The other institution which gives definite work in milling industry is Pennsylvania State College.

Students in the department of milling industry are chiefly from the divisions of agriculture and general science. What amounts to a flour mill engineering course is comprised in option three in the course in agricultural engineering.

STUDENTS ENTER PRACTICAL WORK

The work of students after graduation from the course is in actual mill work or else in seed-testing and milling laboratories belonging to colleges or to large commercial concerns.

Excellent equipment is available at the college for presenting milling industry. There is a small mill which will mill out completely six or eight samples of wheat of five pounds each in a day. Upon this the students are regularly started.

DETAILS OF MODEL MILL

The model mill, which is the feature of the equipment, has a capacity of approximately seventy-five barrels to twenty-four hours. The machinery was bought in the open market, bids having been submitted by various concerns on specifications prepared by the department.

The equipment of the large mill consists of six double-stand, seven by fourteen, ball bearing rolls, two six-section sifters, a centrifugal reel, two double purifiers, a bran duster, a receiving separator, a milling separator, a vertical scourer, two Perfection dust collectors, a Cyclone dust collector, a Kirk water regulator, a heater, twelve tempering tanks, a fifteen-horsepower motor, two ten-horsepower motors, one five-horsepower motor, four 1,000 bushel storage tanks for wheat - each tank subdivided into four bins - the necessary elevators, conveyors, and other equipment for the manufacture of flour.

VALUABLE IN SEVERAL LINES

This mill will be of special value, working out milling problems.

The flour manufactured will be sold, and L. A. Fitz, head of the department, believes that top
prices can be obtained for it. The best patent flour will be known as “Aggie's Best”, the straight flour as “K Brand”, and clear flour as “K. S. A. C. Clear”.

The department also has an excellent laboratory for wheat and flour testing. Mill products may be analyzed and the flour baked into bread in the laboratory.

KANSAS GRADUATES TEACH SUBJECT
L. A. Fitz, professor of milling industry, is a graduate of the Kansas State Agricultural College. After receiving his degree in 1902, he entered upon work in the United States Department of Agriculture. His duties consisted in grain inspection and in work in the office of grain standardization. He took charge of the department of milling industry upon its organization in 1910.

Miss Leila Dunton, who performs the laboratory work in the department, is likewise an alumnus of the college. She holds the degree of Bachelor of Science, obtained in 1910, and that of Master of Science, conferred in 1912.

The head miller is L. L. Leeper, who was born and brought up in Nebraska and is consequently familiar with agricultural conditions in the Middle West. For fifteen years he has been in milling work in Nebraska, Minnesota, Texas, West Virginia, and Kansas. In addition to being a practical miller, he has also had experience in milling laboratory work.

DEPARTMENT FOUR YEARS OLD
The department of milling industry was organized in the summer of 1910, the millers of the state and others subscribing more than $2,000 toward its support at the start. The work of the department began with study and instruction along the line of seed wheat, and with an effort to check the damage wrought by insects injurious to stored grain and to mill products. Fields were inspected, and a list of farmers having good seed wheat for sale was published, resulting in large sales and in a new interest in the problems involved. Mill fumigation was practiced by the department of entomology. Similar work has been carried on since.

Since March 1, 1912, the department has had
charge of the enforcement of the state law regarding the manufacture and sale of concentrated feeding stuffs.

Experimental work has been carried on largely in co-operation with the department of chemistry. It has consisted principally of milling and baking tests and chemical analysis of wheat and flours.

MILLERS OF FOUR STATES
LARGE TERRITORY IS REPRESENTED IN ANNUAL SHORT COURSE

Men Came from Kansas, Oklahoma, Missouri, and Nebraska, to Study Special Work - Two Organizations Hold Joint Session at College

Millers from four states--Kansas, Oklahoma, Missouri, and Nebraska have been attending the second annual short course in wheat and flour testing at the Kansas State Agricultural College. The course closes today with a visit of inspection to the agronomy farm, where particular attention will be given to the experimental wheat plots.

The course has covered two weeks; and practically all the millers enrolled have been present for the entire period. The course has been under the general supervision of L. A. Fitz, professor of milling industry, who has also been in direct charge of some of the laboratory work. Most of the laboratory and baking work has been given, however, by Miss Leila Dunton, assistant in the department. The milling work proper has been in charge of L. L. Leeper, head miller. Lecture work on the problem of milling insects and their eradication has been given by George A. Dean, professor of entomology.

The work given in the short course includes lectures and discussions, demonstrations, and laboratory practice. Among the chief matters taken up are the methods used in experimental milling and baking tests, and in determining absorption, gluten, total protein, gliadin, moisture, ash, and acidity.
A special feature of the course this year was a joint meeting of the Southern Millers' Club and the Southwestern Hard Wheat Millers' League, held on Friday of last week. The meeting was an informal one, serving as the formal opening of the department model mill. The equipment of the department was inspected by the visitors and a baking demonstration was given for their benefit.

VISITORS ARE WELCOME
Acting President J. T. Willard welcomed the visitors on behalf of the college and Dean W. M. Jardine on behalf of the experiment station. George A. Dean, professor of entomology spoke on the insect problems found in connection with milling work. L. E. Call, professor of agronomy, and Miss Leila Dunton, of the department of milling industry, gave the results of the wheat experiments; Professor Call from the field standpoint, Miss Dunton from the standpoint of laboratory investigation. Prof. L. A. Fitz introduced the speakers. Millers were present at this meeting from Hays, Junction City, Newton, Wichita, Topeka, Pleasanton, Kansas City, Ellsworth, Council Grove, Marion, Atchison, Cunningham, Downs, Lyons, Moundridge, and McPherson, Kan.; El Reno and Guthrie, Okla.; Monett and Kansas City, Mo.; Fairbury and Superior, Nebr.

MILLERS IN COURSE

MILLING OLD IN STATE
PROFESSOR FITZ TELLS HISTORY OF INDUSTRY IN KANSAS

Interesting Incidents of Pioneer Days in the Territory - Conditions Revolutionized by Introduction of Turkey Wheat from Russia.

The milling industry in Kansas has developed naturally as the wheat industry of the state has developed. L. A. Fitz, professor of milling industry in the Kansas State Agricultural College, has made a study of the growth of the industry in the state and has discovered many interesting facts, especially concerning milling in the days of the early settlers.

"Historians have attempted," says Mr. Fitz, "to connect a set of buhrs found near Troy, Doniphan County, with the time of Coronado and his explorations of the Missouri river territory in 1540, but there is no evidence to show that these were ever used in a Kansas mill. Possibly they may have been abandoned by early settlers who came up the Missouri river.

SETTLERS NEEDED MILLS

"One of the first needs of the early settlers was a mill of some sort upon which to grind the grain produced, into suitable form for home consumption. Consequently the first mills were established as a necessity to society rather than as a manufacturing enterprise for profit.

"These early mills were usually built in connection with sawmills and located on small streams which could furnish the necessary water power. They were usually equipped with one or two run of stone buhrs and a hexagon reel. The earliest of these custom, or grist, mills ground more corn than wheat. In some cases a toll of from one-eighth to one-twelfth of the grain was taken, in
others the settler's 'grist' was ground and a fee of from twenty-five cents to thirty-five cents a bushel was charged.

**EXCHANGE METHOD USED**

"The 'exchange' mill, named for its custom of exchanging wheat for flour, was of later origin. In this case the farmer received a given amount of patent flour (usually thirty-two to thirty-five pounds) for each bushel of wheat, while the miller retained the lower grades and the by-products. The 'merchant' mill, where the grain is bought and the flour and the by-products are sold outright, belongs to present day methods.

“The earliest grist-and-sawmill of which we have any record was built in Wyandotte by Matthias Splitlogs, an Indian, in 1852. This mill was run by water power and was indeed a very primitive affair. In 1858, John McAlpine and James Washington erected the first steam flour and sawmill in Wyandotte County.

**LONG TRIP FOR FLOUR**

"Even ten years later, although conditions had improved wonderfully, they were still far from satisfactory, as an incident related by Mr. C. Hoffman, one of the pioneer millers in western Kansas, will show. In 1865, Mr. Hoffman went to Council Grove with a load of wheat to have it ground into flour. On arriving at Council Grove, he found the mill closed, and he had to drive to Burlingame, making a total distance of about 200 miles to secure flour for family use.”

According to Professor Fitz, the first bolted flour made in Kansas was manufactured in a mill at Blue Mound, seven miles southeast of Lawrence, in 1857. John W. Willey and his son, John W. Willey, Jr., built the mill. The combination institution was used for a sawmill in which materials were made for the houses of the early settlers, as well as for a grist mill.

**FIRST SHIPMENT FROM KANSAS**

The first shipment of flour out of Kansas territory was made in September, 1859, from Palermo, Doniphan County, to St. Joseph, Mo. The shipment was carried on the steamer Minnehaha. Probably the first shipment of
flour from Kansas to a foreign country was made by C. Hoffman of Enterprise in 1882. The shipment was consigned to a firm in Antwerp, Belgium.

"The greatest influence affecting the development of the milling industry in Kansas," says Mr. Fitz, "is no doubt the marked growth in the wheat industry. However, the milling industry of Kansas has developed primarily because of the quality rather than because of the large quantity of Kansas wheat.

MENNONITE SETTLERS COME

"Nearly forty years ago the Mennonite settlers coming into Marion County brought with them from Russia, a small amount of seed wheat. This was a hard red winter wheat called Turkey. It proved to be so well adapted to soil and climatic conditions that it multiplied rapidly and soon spread to adjoining counties. Thus began the first steps in revolutionizing the whole wheat industry of Kansas. The early settlers had located chiefly in the valleys along the streams in the eastern portions of the state. As little or nothing was then known of hard winter wheat, practically all wheat farmers grew the soft varieties. Big May, Little May, Fultz, Mediterranean, Canada Club, and other common varieties made up the grists which the pioneer mills ground upon the old stone buhrs. The mills were equipped to grind this kind of wheat and the housewives were accustomed to flour made from it.

DIFFICULTY IS EXPERIENCED

"When the millers attempted to grind the hard Turkey wheat upon the stone buhrs then in use, they experienced considerable difficulty, and when the housewives tried to make bread from this flour, they had even greater difficulty. Consequently most millers rejected this Turkey wheat as unfit for milling purposes, but here and there a miller persisted in his efforts to solve the problem of making a satisfactory flour from it.

"There were at least two prominent reasons for the millers wishing to grind Turkey wheat: it could be bought much cheaper at that time than the soft wheat; chemical analyses indicated that it would make a flour of high gluten content. The latter quality caused a great demand for Kansas flour for export. Thus the introduction of hard wheat gave an impetus to our wheat industry which resulted in a surplus for our mills and also supplied the character of flour in demand."
THE VALUE OF GOOD SEED

No matter how well the ground is prepared, or how favorable the season, a first-class crop of wheat cannot be grown without good seed. The first point in securing good seed is to obtain a good variety - one that is adapted to the soil and the climate where it is to be grown. This varies with different localities. In central and western Kansas, Turkey and Kharkof are usually best. In eastern Kansas, Fultz, Harvest Queen, and Currell are among the leading varieties.

Another point of importance is to obtain a good variety - one that is adapted to the soil and the climate where it is to be grown. This varies with different localities. In central and western Kansas, Turkey and Kharkof are usually best. In eastern Kansas, Fultz, Harvest Queen, and Currell are among the leading varieties.

Another point of importance is to keep the seed pure. Most of the wheat grown in Kansas is a mixture of many varieties. Some of these are good, but many of them are poor. The poor ones probably use as much moisture and plant food as the good varieties but they will not produce as much grain.

It is important that seed wheat be free from weed seeds, chaff, straw, and small, shrunken kernels. Weeds will use up water and plant food and consequently reduce the yield of wheat. Some of the worst weed pests in Kansas were probably distributed in seed wheat.

Wheat, as it comes from the threshing machine, contains chaff, straw, and many small, shrunken kernels. Such wheat should be cleaned before seeding. The chaff and the seed are likely to clog the drill, or at least, will cause uneven seeding. The small and shrunken kernels may germinate, but they will not produce as vigorous plants as will plump ones. In a favorable season, such plants may yield almost as much as strong plants, but in an unfavorable season, as a severe winter, many of them are likely to die and thus reduce the yield.

Kansas loses about $2,000,000 every year because of wheat smut, all of which can be entirely
prevented at very little expense. Smut is caused by a very small plant which grows inside the wheat plant and produces its own seed in the place of the wheat kernel. The seeds, or spores, as they are called, germinate with the wheat seed and produce more smut the next year. In addition to greatly reducing the yield, smut injures the quality of wheat.

There are two kinds of smut, the more common of which is the stinking smut, or bunt. This can be easily prevented by treating the wheat with a solution of one pound of formalin to forty-five gallons of water. The solution, if properly applied, will kill the spores, but will not injure the wheat. One of the best methods is to remove the smut balls with a fanning mill and then sprinkle the wheat with the formalin solution, shoveling it over at the same time until all is moistened. The wheat should then be covered with a canvas for about two hours, when it is ready to be sown or to be dried and stored as long as it is desired.

Sometimes smut is so bad that all the smut balls cannot be removed with a fanning mill. In that case, it is advisable to use a smut machine or else dip the wheat in the solution and remove the smut balls as they come to the top. The expense is so slight that no one can afford to use seed wheat without treating it if there is any smut present.

A Bumper Wheat Crop for Kansas in 1915 Requires Early Preparation
W. M. Jardine, Dean of Agriculture

In the neighborhood of 8,000,000 acres of wheat will be harvested in Kansas this year. The present prospects are that the yield to the acre will exceed that of the past few years by several bushels. With the present large acreage and the prospects of substantial yields, the total output promises to be upwards of 130,000,000 bushels.

While we of the state are rejoicing generally over these wonderful wheat prospects, we should not forget that the time is almost upon us when preparation for a 1915 wheat crop should begin. All evidence from investigative work, general
observations, and experience clearly indicates that the time to put land into shape for wheat is as soon after harvest time as practicable. In other words, the land that is to produce wheat in 1915 should be disked, plowed, or listed, as the case may be, as soon after this year's harvest as possible. The more land that is deeply plowed in July, the more favorable will be the prospects for a maximum crop another year.

SOIL WILL NEED TIME

After the land has produced a maximum crop, as will be the case this year, it will have exhausted itself of all the available supply of plant food and water, and before the soil is ready to produce another crop it must be given time to develop more available plant food, and to absorb water. Plowing and early seedbed help to do this. The longer the soil can be plowed and tilled before planting wheat, the more plant food and water it will be able to accumulate for the production of another crop.

The 130,000,000 bushels of wheat and the 5,000,000 tons of straw which will be produced this year will take from the Kansas soils 3,184,000 pounds of nitrogen, 662,000 pounds of phosphorus, and 1,189,000 pounds of potassium. This would cost the farmers of Kansas $706,130 if it should be necessary for them to buy it as commercial fertilizer. This means that the soil of Kansas will have just so much less plant food than it contained last year.

FOOD IS IN SOLID FORM

The soils of Kansas are still rich in plant food, but most of it is in a solid form. That is, it is in a form in which plants cannot use it until after it has been acted upon by weather conditions and by the bacteria of the soil. This is the reason the ground should be loosened up and put into condition to absorb large quantities of water and to transform a sufficient supply of plant food to an available form to meet the needs of the ensuing crop.

All the straw - and as just stated there will be over 5,000,000 tons of it produced this year - should be returned to the soil. Either the straw should be spread upon the wheat this fall, or worked into the
land for other crops, or else it should be fed to animals and the manure made there-from returned to the soil.

LANDS SHORT IN HUMUS
The wheat lands of the state are short-in-humus, and humus is the material of the soil which enables it to hold plenty of water, and keeps the soil from drifting and blowing, or from baking and running together. Straw will help keep up the humus content of the soil if spread over the land and there allowed to decay. Too many farmers of the state burn their straw. In this, as in previous years, hundreds of thousands of tons of straw will be consumed by fire. The money value of this year's straw as fertilizer would amount to $137,900 if it were necessary for us to buy an equivalent amount of nitrogen, phosphorus, and potassium in commercial fertilizers.

FOR GOOD AVERAGE CROPS
Let us not forget that it is a good average crop of wheat every year that produces the most profit to the farmer and to the state, rather than a bumper crop every four or five years. In order to produce a good average crop of wheat in Kansas regularly it will be necessary to make early preparation for each succeeding crop. The preparation for the 1915 wheat crop should begin not later than July 15 of the present year.

Eight million acres in Kansas will be left bare by the middle of July. Most of this ground will be put back to wheat another year. If every acre that is to be put to wheat could be plowed, disked, or listed, and put into seedbed condition before the middle of August, there would be little doubt that the 1915 crop would rival the one that is about to be harvested. Let us get ready for the 1915 wheat crop now.

THE WEATHER
The weather is composed of 19 per cent wind, 6 per cent humidity, 27 per cent heat, and 52 per cent cussedness. It is found in all parts of the earth, but the distribution is not uniform. In certain localities it
is spread on much thicker than it is in others. During the winter it is manufactured in Nome; during the summer, in Hades. So far the weather has been neither absorbed by the steel corporation nor regulated by the Sherman Act. The weather bureau is the only organization that has been in any way successful in guessing what the weather is not going to be tomorrow.

A PRACTICAL DEPARTMENT
The Department of Milling Industry is one of the most practical and beneficial departments in the college, none the less so because it is unique in the West and almost so in the United States.
Particularly appropriate is it that such a department should be in existence in the wheat-growing state of Kansas. It represents not only public service on the part of the college as an institution but also public service on the part of the students who are prepared by the department to do efficient work for the benefit of Kansas and her people.

GROWS TOO MUCH WHEAT
AVERAGE FARMER RAISES MORE THAN HE CAN WELL HANDLE

Cecil Salmon Calls Attention to Importance of Early and Thorough Preparation of the Ground and to Value of Crop Rotation

The principal reason the average wheat yield in Kansas is less than fourteen bushels an acre is that Kansas farmers grow more wheat than they can care for to the best advantage. Such is the comment of Cecil Salmon, assistant professor of farm crops in the Kansas State Agricultural College.
The result is, says Mr. Salmon, that part of the land must be plowed too late for good results and that some of the wheat must be sown too early in order to get all the wheat sown early enough.

HIRED MAN GETS MORE
Professor Salmon believes that the average
Kansas wheat grower pays his hired man more than he himself receives after paying the cost of growing the crop and the interest on the investment, and after deducting the value of the fertility removed from the land. Nebraska, with no better soil and a climate not so favorable, produces more than seventeen bushels an acre, and Washington more than twenty-one bushels.

"One of the most important points in growing a good crop of wheat," says Professor Salmon, "is the preparation of the ground. This is true because the storage of water in the soil and the amount of plant food that is made available depend upon it to a great extent. Food and water are as necessary for plants as for animals. If plants do not have the right amount of food or enough of it at the right time, they become stunted and will not make so good a yield as they otherwise would.

**PLOWING PREVENTS RUN-OFF**

"Ground that is left in stubble after harvest will not absorb water readily. Also, the stubble continues to carry water up from the soil and allows it to evaporate into the air. Much of the rain, instead of soaking into the soil, runs off into the streams. But if the ground is plowed, run-off is prevented, and the water that falls in heavy rains is more readily absorbed. This water gradually soaks down into the subsoil where it remains for the use of the following crop.

"The necessity of having plenty of water stored in the soil is shown by the fact that a twenty-bushel crop of wheat requires about 600 tons of water to the acre. If this amount is not stored in the soil or is not supplied by rain when the crop needs it, less than a twenty-bushel yield will be produced. On the other hand, a good crop of wheat can be grown without any rain at all during the growing season, if sufficient water is stored in the soil before the wheat is sown.

**BACTERIA DEVELOP PLANT FOOD**

"When a crop of wheat is harvested, it takes from the soil most of the available plant food. Consequently, before another crop can be grown, more plant food must be developed. This is done,
to a large extent, by bacteria which work on the vegetable matter stored in the soil. As bacteria require both moisture and air, very little plant food is developed in a soil that is dry and hard, as is unplowed ground. For this reason, ground that is plowed late does not contain so much plant food as that which is plowed early."

Professor Salmon calls attention to the fact that the importance of early and thorough preparation of the soil is shown by experiments conducted at Manhattan for three years. In these experiments, ground has been prepared for wheat in eleven different ways. In 1913, which was a very dry season, the yields were as follows:

Plot 1 was disked at planting time without previous preparation. The yield was 9.4 bushels an acre, worth at prevailing prices $7.51; the cost of preparing the land was $2, leaving $5.51 for paying other expenses.

Plot 2 was plowed three inches deep September 15, a common practice among Kansas farmers. The yield was 16.67 bushels an acre, worth $13.11; the cost of preparing the ground was $2.40 per acre, leaving $10.71.

Plot 3 was plowed seven inches deep in September, at a cost of $2.90 for preparing the land. This plot made a yield of 17.5 bushels an acre and gave a return of $11.14 after the cost of preparation.

EARLY DISKING VALUABLE

Plot 4 was double-disked July 15 and plowed three inches deep September 15. The cost of preparation for this plot was $3.60 per acre, the yield 27.5 bushels per acre, and the value of the crop, less the cost of preparing the land, $18.42. In other words, the early disking by killing weeds and stopping evaporation of moisture was worth $8.19, as is seen upon comparing the yield of this plot with that of plot 2.

Plot 5 was plowed seven inches deep August 15. The cost of preparing the land was $3.55, the yield to the acre 32.75 bushels, and the value of the crop $26.26, leaving $22.71 to pay other expenses.

Plot 6 was prepared in the same manner as plot 5, except that it was not worked after plowing until September 15. The cost of preparing the ground
was 65 cents an acre less than in plot 5, and the yield was four bushels less.

Plot 7 was double-disked July 15 and plowed seven inches deep August 15. The yield was 29.75 bushels, worth $23.87. The cost of preparing the ground was $4.75 an acre, leaving $19.12 after paying for preparing the land.

Plot 8 was plowed three inches deep July 15 and produced 21.5 bushels of wheat an acre, leaving $12.90 above the cost of preparation of the ground.

VALUE OF CROP DOUBLED

Plot 9 was prepared in the same way as plot 8, except that it was plowed seven inches deep instead of three inches. This plot produced 35 bushels an acre, or 13.5 bushels more than plot 8. The value of the wheat less the cost of production was almost double that in plot 8.

Plot 10 was listed July 15 and worked down level soon after to prevent the loss of moisture. The yield was 27.75 bushels an acre, worth $22.24, leaving $18.89 after paying for the cost of listing and working the ground.

Plot 11 was listed July 15, and the ridges were split August 15. The yield was 29.5 bushels an acre or 1.75 bushels more than in plot 10.

"The principal points brought out in these experiments," comments Mr. Salmon, "is that early and thorough preparation of the ground pays. Of course, a farmer who plows early and deep can not grow so many acres as the man who prepares his ground carelessly, but he will raise more wheat and if he rotates his crops, the wheat will be produced at less expense. This is shown by another experiment at Manhattan in 1913.

ANOTHER EXPERIMENT DISCUSSED

"Land which had just produced a crop of oats and had grown a crop of corn in 1911 was prepared for wheat in five different ways. The first plot was plowed three inches deep September 15, the second seven inches deep August 15, the third three inches deep July 15, the fourth seven inches deep July 15, and the fifth twelve inches deep July 15.

"The plot plowed three inches deep September 15, produced 25.5 bushels an acre; the one plowed
seven inches deep August 15, produced 41 bushels per acre. The yields of the other three plots were practically alike, being 44, 44.67, and 44 bushels per acre, respectively. This is nine bushels more than from ground which had been prepared in the same way but which had grown wheat continuously for several years.

"The experiment also shows that where wheat is grown in rotation with other crops, it is not necessary to plow so deep as where the wheat is grown continuously, since the plot plowed three inches deep in July produced practically as much as those plowed seven inches and twelve inches deep. This is explained by the fact that the ground was plowed six inches deep for oats the previous year, and about eight inches deep for corn the year before that."

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THE POOR MAN’S INSTITUTION

A recent official publication of a large and well known university denies the circulated statement that it is “a poor man’s university.” While one cannot but respect the authorities of the institution for their frankness of statement, one cannot, at the same time, help feeling happy that there are institutions which are poor men’s colleges and universities. These institutions, moreover, send out as strong and able men as do the colleges in which a large income is necessary for the student.

It must be admitted that a certain amount of leisure does make for sound and well-ripened scholarship provided the leisure is properly used. In a western institution, however, relatively small means assure sufficient leisure for good work. For this fact the West should be grateful.

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ANNUAL ALUMNI PICNIC

The annual Kansas State Agricultural College alumni picnic will be held in Lovers’ Lane Saturday, May 30, at 4 o’clock p.m. Every Manhattan alumnus should plan to attend. If you are married, bring your family. A tempting picnic dinner will be served. Professor Dickens will distribute copies of the Alumni Register at that time.

C. W. McCampbell, Secretary
LIST OF FIGURES:

Fig. 1  Prof. L. A. Fitz

Fig. 2  Millers at work in laboratory

Fig. 3  L. L. Leeper

Fig. 4  Roll floor in college mill

Fig. 5  Miss Leila Dunton

Fig. 6  Sifter floor in college mill

Unfortunately, permission could not be obtained to scan the microfilms with high resolution equipment, so the quality of these figures is extremely poor.