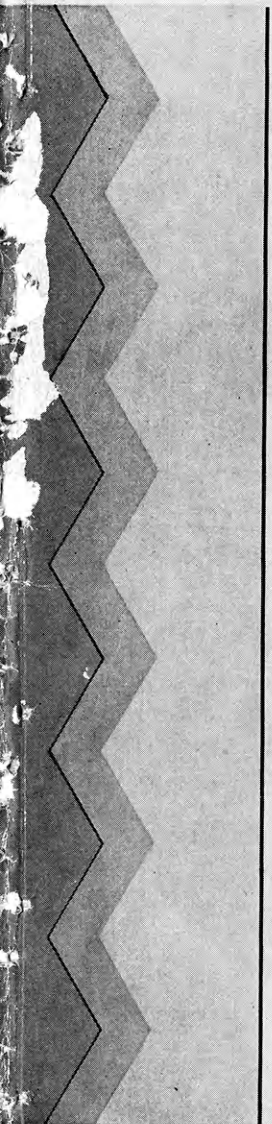




The Kansas Agricultural Student



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Published by the Agricultural Association of Kansas College of Agriculture, Manhattan, Kansas, on or before the Twentieth Day of the months of October, December, March, and May.

Entered as Second Class Matter, May 21, 1925, at the Post Office at Manhattan, Kansas, under the Act of Congress of March 3, 1879. Accepted for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized May 21, 1925.



HELEN SMERCHEK, GODDESS OF AGRICULTURE, 1932

The Kansas Agricultural Student

VOL. XI

Manhattan, Kansas, May, 1932

No. 4

Future Farmers of America

Lewis S. Evans, '35

During the period of readjustment following the World War, many young potential farmers were looking toward the city for employment. It was just such a condition that prompted Henry C. Groseclose, an instructor in the Department of Agricultural Education in the Virginia Polytechnic Institute, to endeavor to organize these potential farmers and keep them on the farm. Such an organization was instituted and later perfected until it has become a national organization in its scope and is supervised by the Federal Government through its Department of Vocational Education.

The Kansas Association of Future Farmers of America has been organized four years. During this period 35 members of local Kansas chapters, outstanding in scholarship, leadership, and project activities, have been raised to the third degree, that of "State Farmer," which is the highest honor that can be bestowed upon its members by the Kansas association. The highest degree, that of the "American Farmer," has been reached by four Kansas boys since the organization of the Kansas association. The American Farmer degree represents the highest degree of excellency as judged by outstanding achievement in scholarship, leadership, and supervised practice. Those receiving this award are elected at the National Congress held annually in connection with the American Royal Live Stock Show. The four Kansas boys who have received the American Farmer degree since the organization of the Kansas association are: Boyd Waite, Winfield; Lewis S. Evans, Washington; Francis Grillot, Parsons; and Kenneth Waite, Winfield.

The State Farmers are elected each year at the annual meeting of the House of Delegates. Each state is allowed to elect 2 per cent of its membership to the State Farmer degree. To be a qualified candidate for election to the degree of State Farmer, a boy must have at least two years of systematic training in vocational agriculture, have an outstanding supervised practice program, have earned \$200 and have it in the bank or otherwise productively invested. In addition, he must possess outstanding leadership abilities and a high scholarship record. It is evident that promotion is largely based on cooperation and achievement—both qualities much in need in the field of agriculture at present.

The following is a list of the 10 newly elected State Farmers and a brief summary statement of their accomplishments:

Waldo Cox.....	Mound City High School
Elmer Dawdy....	Washington High School
Vincent Fuller
.....	Miltonvale Rural High School
Gene Hager
.....	Norton Community High School
Harold Heilman.....	Chanute High School
Everette Miller.....	Ottawa High School
Allen Nottorf.....	Abilene High School
Earl Parsons.....	Winfield High School
Frank M. Sawyer.....
.....	Atwood Community High School
Harry Smith.....	Ottawa High School

These new "State Farmers" have excellent high school scholarship records. Many of them are on honor rolls—some ranking first or second in their classes. Each has some worth-while activity record. They have been on judging and debate teams. Most of them have been members of state high school judging teams. Several are high

school athletic letter men. They have held various offices of responsibility in their high schools and especially in their local F. F. A. chapter. Several are winners of Union Pacific scholarships in vocational agriculture.

On the vocational side their records are an inspiration to the practical farmer. They have carried splendid crop and live stock projects, making unusual financial showings in many cases. Their home practice records in-

field, is held each year in connection with the annual meeting held at Manhattan. Winners of local and district contests compete to determine the state winner, who in turn enters one of the regional contests, the winners of which compete in the finals held in connection with the American Royal Live Stock Show. Prizes to the amount of \$1,000 are offered annually by Senator Arthur Capper to be awarded winners of the National contest.



NINE OF THE ELEVEN NEW MEMBERS OF THE KANSAS ASSOCIATION OF FUTURE FARMERS OF AMERICA WITH THEIR STATE ADVISER

Front row, left to right: Gene Hager, Everette Miller, Allen Nottorf, Frank M. Sawyer, and Harry Smith.

Back row: Prof. L. F. Hall (elected to honorary membership), Harold Heilman, Earl Parsons, Waldo Cox, Lester B. Pollom, state adviser.

clude marked improvements in many phases of Kansas farming. They have culled home poultry flocks, pruned orchards and vineyards, terraced fields, fattened poultry for market, introduced improved practices in live stock feeding and management, remodeled buildings, landscaped the home grounds, improved crop rotations, etc.

The state officers for the coming year are:

President	Waldo Cox
Vice president	Everette Miller
Secretary	Allen Nottorf
Treasurer	Frank M. Sawyer
Reporter	Vincent Fuller
Advisor, L. B. Pollom, State Supervisor of Vocational Agriculture	

A state-wide public speaking contest, won this year by Fred Muret of Win-

Machinery Costs on Wheat Farms in Southwestern Kansas

W. G. Nicholson, M. S., '32

Machinery costs in wheat production on the farms in southwestern Kansas are being given much more attention at present than was the case before the recent decline in the price of wheat. Much of the farm machinery was purchased, but not fully paid for, before the drop in wheat price, and the difficulty now is to pay for the machinery with the present low price of wheat. Many wheat farmers are confronted

with the question of whether or not they can afford to use their machinery in wheat production.

Just how important are machinery costs in wheat production? Records kept on 81 farms in southwestern Kansas during 1930 show that machinery costs are the largest single factor in the cost of wheat production. The machinery costs include cash operating expenses and depreciation on tractors, combines, trucks, automobiles, and other farm machinery.

The machinery inventory value per crop acre in six different counties January 1, 1930, ranged from \$5.23 to \$7.12, the average being \$6.21. The cash operating expense for machinery varied from \$1,801 to \$2,690 per farm. On the average of the 81 farms the cost of power machinery was \$2,222, or approximately one-half of all farm expenses. This included both cash expenses and depreciation. Some farms had only 42.4 per cent of their total expenses for machinery, while others had as high as 56.5 per cent.

From an analysis of the machinery costs on these farms it appears that the costs are about equally divided between operating and replacement expenses. The costs were tabulated for the truck, tractor, combine, and other power machinery used in wheat production, separately from the auto expense. The cost of repairs, fuel, and lubricants for machinery, not including autos, averaged \$935 per farm. The charge for depreciation amounted to practically as much, making a total annual charge per farm of \$1,862.

The annual charge for operating and replacing autos averaged \$360 on these farms and the combined auto and machinery costs totaled \$2,222.

The charge for machinery averaged \$3.02 for each crop acre. Except for a few farms on which the operating expense was very low or very high, the cost of fuel, oil, and repairs fell between \$1 and \$2 per acre. Depreciation was about the same which made

the total machinery charge for most of the farms range from \$2 to \$4.50 per crop acre.

Depreciation on farm machinery is charged against the farm business in the year in which it occurs. Since the cash cost of farm machinery is not charged against the business when the machine is purchased, the cost must be charged through depreciation over the years the machine is used.

Summary of Machinery Costs on 81 Farms in Southwestern Kansas

Machinery inventory per crop acre, Jan. 1, 1930.....	\$ 6.21
Machinery cash expense per farm.....	1,126.00
Total cash operating expense per farm	3,147.00
Percentage machinery cash expense is of total cash expense.....	25.90
Depreciation on machinery per farm	1,098.00
Total depreciation per farm.....	1,198.00
Total machinery expense and depreciation	2,222.00
Total farm expense.....	4,345.00
Percentage machinery costs are of total costs (a)	51.10

(a) Total costs include total cash operating and depreciation costs.

Students on the Staff, 1932-'33

The following students have been selected for work as indicated on the editorial staff of The Kansas Agricultural Student for 1932-'33:

Gaylord R. Munson, Editor
 Pius H. Hostetler, Associate Editor
 John E. Hester, Business Manager
 Frank S. Burson, Jr., Assistant Business Manager
 Kenneth S. Davis, College Notes
 Marion W. Pearce, Alumni Notes
 Luke M. Schruben, Farm Notes
 Orville F. Denton, Agricultural Economics
 Andrew B. Erhart, Agronomy
 John I. Miller, Animal Husbandry
 Francis W. Castello, Dairy Husbandry
 Erwin Abmeyer, Horticulture
 Raymond T. Harper, Poultry Husbandry

C. O. Dirks, '24, assistant professor of entomology in the University of Maine, has been on leave the past year pursuing work toward his doctor's degree in Cornell University.

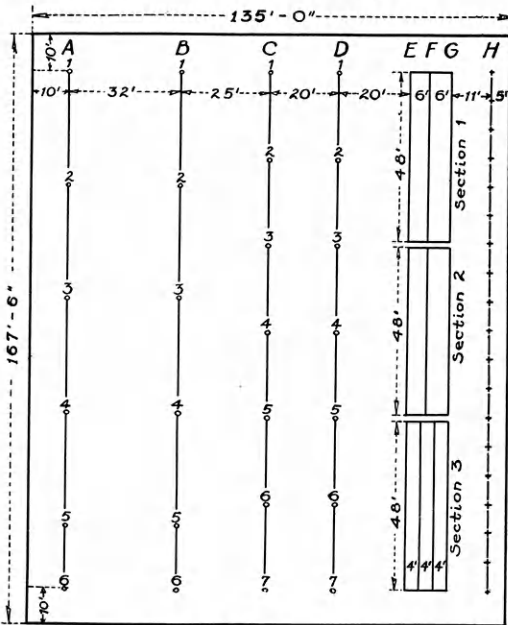
Growing Fruit for Home Use

C. R. Bradley, '27

The problems of the commercial fruit grower and of the grower who raises fruit for home use are considerably different. The commercial fruit grower's success is affected principally by the financial outcome of his work while the one who grows fruit for home use measures his success by the regularity and quality of the supply that comes to his table, fresh and tree ripened, and

Apples, peaches, sour cherries, grapes, strawberries, blackberries, and raspberries include the fruits that are adapted to Kansas conditions.

The accompanying diagram may be helpful to the prospective amateur fruit grower in planning the arrangement of his fruit plantation. This diagram represents a half acre of land showing planting distances of the fruits mentioned above. The fruits provided for in the diagram and their varieties are as follows:



PLANTING DISTANCE AND ARRANGEMENT FOR A HALF-ACRE KANSAS HOME ORCHARD

Row	Kind of Fruit	Variety and Number
A.....	Apples.....	Yellow Transparent (2) Jonathan (4)
B.....	Apples	Winesap (6)
C.....	Peaches	Greensboro (3) Champion (4)
D.....	Sour cherries.....	Montmorency (5) Early Richmond (2)
E, F, G, Sec. 1.....	Raspberries	Black Pearl
E, F, G, Sec. 2.....	Blackberries	Snyder
E, F, G, Sec. 3.....	Strawberries	Senator Dunlap Progressive
H.....	Grapes	Concord Brighton

It is not assumed that this plan will fit the exact conditions on every Kansas farm, but it shows the possibilities of obtaining a large variety of fruits from a small area of land. In many parts of the state, especially on the drier sites, peaches, raspberries, and blackberries should be omitted.

As mentioned above, care was not taken in the past in the selection of sites for the Kansas home orchards and as a result the trees did not grow or produce as they should. Many orchards were planted on a very shallow, poorly drained soil. The home orchard must have a deep, fertile, well-drained soil. Another important item that should not be neglected in the selection of a site is air drainage. The orchard should be planted on a slope, preferably a north or east slope, in Kansas. This is for the purpose of reducing frost injury, which is most likely to occur on low level ground, and to protect the trees from winds and drouths.

Good nursery stock of suitable kinds

(Continued on page 114)

the satisfaction of its being a product of his own efforts.

The home orchard should be planned very carefully. The selection of suitable varieties and a desirable site are important. Many Kansas home orchards have failed because the persons who planted them had not planned their layouts carefully. Poor nursery stock was used, unadapted varieties were planted, a poor site was selected, and as a result, the orchard could not hold the interest of the farmer.

Officers of Agricultural Activities, 1932-'33

The last meeting of the Agricultural Seminar for the year was devoted to election of officers for 1932-'33. Those selected for leadership in the various activities of the division are as follows:

AGRICULTURAL ASSOCIATION

President, John I. Miller, Prescott
 Vice-President, Wayne Burbank, Benton
 Secretary, C. Dean McNeal, Boyle
 Treasurer, Wilfred H. Pine, Lawrence

AG BARNWARMER

Manager, Edward S. Sullivan, Mercier
 Assistant Manager, Robert R. Teagarden, LaCygne
 Treasurer, Marion W. Pearce, Miltonvale

AG FAIR

Manager, Virgil A. Unruh, Pawnee Rock
 Assistant Manager, Harry W. Coberly, Gove
 Treasurer, Frank R. Brandenburg, Riley
 Fourth Member of the Board, Val W. Silkett, Downs

THE KANSAS AGRICULTURAL STUDENT

Editor, Gaylord R. Munson, Junction City
 Business Manager, John E. Hester, Hoisington

Tax Study Clubs

Edna M. Socolofsky, G. S., '32

An interesting experiment in the study of taxation is being undertaken by the Kansas Chamber of Commerce, with the cooperation of the three major state farm organizations, the University of Kansas, and Kansas State College.

Tax study clubs were organized for the purpose of giving the people an opportunity to learn more about the fundamental principles of taxation—to promulgate a better understanding of the basic facts, the knowledge of which should make for wise legislation. In other words, an attempt is being made

to create informed public opinion on the complex problem of taxation. It is not the purpose of this study to try to dictate a tax program.

These clubs which were created last winter are now actively functioning in towns, cities, and country communities throughout the state. Membership is not restricted—it is open to men and women who have a genuine willingness to study all sides of the question of taxation—but an attempt is made to limit the membership of each club to approximately twenty members. A club has been formed wherever the need was felt. Each club has a leader who is required to assume an unbiased attitude in his attempts to further open-minded, comprehensive discussions.

In this school of taxation a regular course of study, prepared by Prof. Harold Howe of the Department of Agricultural Economics of Kansas State College and Prof. Jens P. Jensen of the University of Kansas, is being used. The lesson topics for the 13 lessons in the course are as follows:

- Why Taxes? (Introductory)
- Government Expenditures
- Governmental Revenues
- General Property Tax
- Property Tax Administration
- Classification of Property for Taxation
- State Income Taxes
- Consumption, Production, and Business Taxes
- Highway Taxation
- Other Revenue Sources
- Methods of Controlling Public Expenditures
- Plan of Model System of State and Local Taxation
- Some Kansas Tax Problems

It is evident that these topics cover not only local but state and federal taxation as well.

Those who have been responsible for the formulation of this tax study system realize that the tax system is a complicated structure which needs revision, but which cannot be intelligently revised until the people at large have a better understanding of the underlying principles.

THE KANSAS AGRICULTURAL STUDENT

KANSAS COLLEGE OF AGRICULTURE
MANHATTAN—KANSAS

VOL. XI

MAY, 1932

No. 4

Published quarterly during the school year by the Agricultural Association of Kansas College of Agriculture. Subscription rate: One year, 75 cents; four years, in advance, \$2.00; single copies, 20 cents. Advertising rates sent on application. Address all communications to The Kansas Agricultural Student, Manhattan, Kansas.

Entered as second-class matter, May 21, 1925, at the post office at Manhattan, Kansas, under the Act of Congress of March 3, 1879.

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COLLEGE OPPORTUNITIES A CHALLENGE TO HIGH-SCHOOL GRADUATES

Advantages of Agricultural Curricula for Farm-reared Young Men

High-school graduates confronting the difficulties of going to college and seriously considering whether or not a college education is worth the effort and the sacrifices it costs, will do well to read carefully the "Questions and Answers" section of this magazine beginning on page 106. Four members of the faculty committee on publicity of the Division of Agriculture and seven members of the class of 1932 have briefly discussed in this section in no uncertain way and with no little authority some of the points you are considering. You are invited to read their signed statements.

AN ORGANIZATION OF GREAT PROMISE FOR THE FUTURE

Certainly the tendency today is to have too many organizations, many of which will render little or no service. There is one young honor society, how-

ever, to which our hat is off. It is the Future Farmers of America.

This organization is based on safe and sound principles. It appeals to the best in capable farm boys at an opportune time in their lives. Efficiency in scholarship and in the vocation of farming, a character that rings true and capable leadership, is a broad enough platform to enlist the enthusiasm of students and sponsors. We look on the Future Farmers of America as high-school Alpha Zetas and believe that each year for many years in the future they will mean more and more to the progress of agriculture.

The Ag Student is glad to present a group picture showing eight of the ten young men elected to membership in the Kansas Association of Future Farmers of America this spring. A brief report of their state meeting is also included in this issue.

W. O. McCarty, '23, is teaching vocational agriculture in Vest Rural High School, Vest, Ky.

College Training in Agriculture for Purposeful Living

L. E. Call, Dean, Division of Agriculture

EVERYONE desires to live purposefully. Through such living comes happiness. Purposeful living is dependent in a large measure upon the completeness with which life is adjusted to the environment in which it is lived. Training for such living consists in acquiring the information and skill that enables one to do useful work and to adjust life to its environment.

More than 12,000 Kansas boys and girls have completed their high school education this spring. These young people have taken the first and most essential step in the training needed for useful and purposeful living. They have laid the foundation upon which to place the training acquired through further study and experience that will enable them to adjust their lives to their environment. A high school education, however, lays the foundation only. It must be followed by additional knowledge and training if life is to be lived most abundantly and purposefully. This additional training may be secured best through additional formal education. It is for this reason that society has provided colleges.

Regardless of how additional training is acquired, whether through formal college training or otherwise, it should enable one to acquire three distinct kinds of knowledge.

1. A knowledge of physical and biological laws. This knowledge is helpful in adjusting one's life to its physical environment. A knowledge of such laws is best obtained by the study of those natural sciences that deal with these laws such as physics, chemistry, botany, zoology, physiology, entomology, etc. Their application to life is more clearly understood when applied in such practical studies as animal husbandry, agronomy, and horticulture.

2. A knowledge of economic and social laws. Such knowledge is needed to better adjust life to its social environment. This type of knowledge is obtained by a study of such subjects as history, literature, economics, sociology, and the humanities. The application of these laws to every-day living is best understood when a practical application of them is undertaken through the study of such subjects as agricultural economics, marketing, land use, farmer movements, etc.

3. An appreciation of spiritual values. This appreciation of the spiritual values of life is best developed through abundant living made possible by a comprehensive knowledge of physical, biological, and social laws.

The curricula in agriculture as offered by the Kansas State College of Agriculture and Applied Science afford an opportunity to acquire a well-rounded training in the physical, biological, and social sciences, together with an application of these sciences to every-day life through applied courses of study. These curricula afford, therefore, an opportunity to secure the type of training needed for abundant purposeful living.

QUESTIONS & ANSWERS

FARM & COLLEGE

Q. Why should I go to College?

A. College training offers an opportunity for better equipping one's self to meet economic conditions, to appreciate nature more fully, and to work to better advantage with nature. College training also offers an opportunity for better citizenship and for community leadership. —R. I. Throckmorton, Professor of Agronomy.

Q. Why waste four years in college?

A. Don't do it. Don't waste four years out of college, either. Waste means to use unproductively. College is a mind trainer. Can you name a better piece of capital for a man to possess than a good mind, properly trained? Then if by four years of honest college work one can gain this piece of capital, we certainly can't say those years were spent unproductively. The man who wastes four years in college would, in most cases, waste the same four years out of college.

—W. Loy McMullen, '32.

Q. Why should a farmer boy select K. S. C. for his college?

A. A farm-reared young man should select K. S. C. for his college because it offers a wide range of training in agriculture and the related sciences—a training which is unsurpassed by other institutions. K. S. C. also gives the farmer boy an atmosphere in which he can readily adapt himself to his environment and curricula in which he can utilize his early experience to the best advantage. Finally, the necessary cost of attending K. S. C. is no higher than the cost of attendance at many inferior institutions.

—Charles W. Nauheim, '32.

Q. What can a college education do?

A. A college education should mean much more than the acquiring of technical training and information. A college education should enable the graduate to live a fuller and more useful life in the broadest sense. It should develop those qualities of character which make a man broad-minded, sympathetic, and conscientious. It should give the graduate a strong desire to cooperate with others for the common good, to deal fairly with everyone, to understand the problems of society, and to face duty fairly as he sees it.—F. W. Bell, Professor of Animal Husbandry.

Q. Why study agriculture and learn how to produce more when too much of most farm products is being produced?

A. Efficient production does not consist of producing a larger total supply. It means securing whatever quantity is produced at lower costs. In other words, a greater return is secured for the time and material used. This is of benefit to those who produce as well as to those who consume.

Agriculture and most other lines of industry must undergo readjustment during the next few years. In this readjustment process the more efficient will survive. There is no industry or occupation in which one can engage to avoid the elimination of the inefficient and the unfit. The person who is trained and knows how to produce efficiently will not only survive in the years to come but will find many outstanding opportunities and advantages.

College training in the business of agriculture will be at a premium in the

years following the present depression. The student who begins his college training this coming September will be through college and ready to take up his life work at a time when opportunities for men with such training will be many and attractive.—W. E. Grimes, Professor of Agricultural Economics.

Q. How does the depression affect the quality of college work?

A. The question presupposes that the depression will affect the quality of college work. I believe that this is the general belief and quite true. When a student has money for only the essentials it usually follows that he studies and sleeps more and runs around less. When you stack five meals up as the equivalent of one dance, the size of a dollar grows by leaps and bounds.

In another way the depression affects the quality of college work. Just before school was out a junior was heard to remark, "Well, I won't be back next year unless I can borrow enough money to live at the frat house." That type of student is being weeded out. The attitude of "college first" is being more firmly established so that not only the quality of college work but the type and quality of college students are being raised.

—L. Albert Wilhelm, '32.

Q. Do many students come to K. S. C. to loaf?

A. No. They do not. During my four years at K. S. C. I have not known of more than two or three students who did not seem to have a definite purpose. Records show that during recent years about two-thirds of our students have been largely, and many of that number wholly, self-supporting. These students in one way or another are earning all or a large portion of the money necessary for a college education. The student body is one of the most democratic to be found anywhere and has no place for a loafer.

—Carl Williams, '32.

Q. Where should a young man who has grown up on a Kansas farm go for his college education?

A. A Kansas farm boy has had many experiences and lessons which have tended to make him observant, persistent, inventive, and self-reliant. These characteristics will prove of value to him in any business or profession he may later undertake, but their complete value can be realized only when they aid in the use of the vast store of agricultural knowledge which he gained by boyhood experiences. If, in addition, this young man is privileged to attend Kansas State College where as a student in the Division of Agriculture he gains both an understanding of the sciences on which his agricultural lore is based and an introduction to the liberal arts, he will then be able to face his economic future without fear and to take his place among the educated group of his home community. Without in any way decrying the "learned" professions, engineering, business, or commerce, I can think of no more worthy or appropriate occupation for a farm-reared Kansas boy than professional agriculture in one of its many forms or leadership in the ranks of American farmers. —R. J. Barnett, Professor of Horticulture.

Q. Are college honors worth while?

A. Yes. College honors act as stimuli to do a better quality of work in college and succeeding years. The student who possesses real ability and receives the proper amount of encouragement in college is better equipped for his life work than the student of equal ability who receives no encouragement through college honors.

Too many students, however, think of college honors as a final goal instead of a recognition of achievement and capacity for greater achievements. The most probable reason for failures after graduation of students having received honors while in college is not the lack of ability to succeed, but the

attitude of the individual to rest on his laurels and watch himself prosper. College honors are exceedingly worth while, provided the student accepts them as mere road markers along life's highway pointing in the direction of success. —Oliver W. Shoup, '32.

Q. Why go to college when many college graduates are unable to secure employment?

A. If one went to college solely for the benefits to be secured in the first few years out of college, then a college education would not be worth while. But a college education is not for use in just these few years, but for one's entire life. Furthermore, as we emerge from the present period of depression, the men and women who are trained to think will have many advantages over those who lack such training. In the years to come, well-trained capable leadership will be keenly in demand and a college education lays the foundation for the development of such leadership. It has been so in the years following all major depressions of the past. The arguments are more in favor of college training for the young men and women of today than ever before. —W. E. Grimes, Professor of Agricultural Economics.

Q. Will my college work in agriculture make me a better farmer?

A. Yes. It certainly will. A college education is a time saver. It puts at least 20 years of undirected experience into four short years (a total of 144 weeks) of directed experience. The agricultural curricula are planned especially to give this intensive training in modern agriculture. Each member of the faculty handling agricultural subjects is a specialist in some phase of the farming industry. With agricultural specialists for teachers and adequate agricultural equipment with which to work, the student gathers reliable information and develops ability to see and solve the complex problems

of the farmer that cannot help but make him a better farmer if he has any capacity for improvement.

Finally my technical information and positive inspiration give me the attitude of an open-minded student prepared for growth, especially along agricultural lines. Agricultural problems have changed with marvelous rapidity during the past decade. Who can tell now what they will be two decades in the future? I am satisfied, however, that my college training in agriculture will prove a time saver in handling these problems.

—W. J. Conover, '32.

Q. If a college diploma won't get me a job why should I work for one?

A. No college graduate should expect to get a job merely because he has finished his college course. College training cannot make ability in a man, it can only improve what ability he has. It is not the purpose of a college to act as an employment agency. If a man has the ability to get and hold a job, the training he gets in college will be a real help in making him a success, but the college cannot give this ability to anyone. —Dallas D. Alsup, '32.

Louis A. Zimmerman, '17, is engaged in home mission work under the auspices of the Presbyterian Home Mission Board. His address is Belva, N. Car. Louis was in Manhattan the latter part of May on a vacation trip.

E. Lynn Watson, B. S. A., '30, D. V. M., '30, 2d lieutenant in the veterinary corps of the United States army, spent some days on the campus the latter part of April. He is located at Fort Myer, Va.

H. P. Gaston, '23, has been on the research staff of the Michigan Agricultural Experiment Station since graduation. His most recent project is in flower marketing concerned especially with retail flower management.

State High School Vocational Agriculture Judging Contest

Leonard E. Croy, '32

On May 2 and 3, 1932, the twelfth annual State High School Vocational Agriculture Judging contest was held. Only 67 teams were present, 45 of which participated in all four divisions of the contest. The number of contestants present totaled 203, due to the fact that one school entered two indi-

viduals, swine, and sheep and giving oral reasons on one class of each kind of animals. Section III, crops judging, consisted of the identification of grain and forage crops, weeds, weed seeds, and plant diseases; commercial grading of wheat, grain sorghums, shelled corn, and alfalfa; and judging the seed and



OTTAWA HIGH SCHOOL WINNING TEAM IN STATE HIGH SCHOOL
JUDGING CONTEST

Front row, left to right: C. O. Banta, coach; Lynn Gambrell, third high individual in the entire contest; and Frank Burgess, second high individual in the entire contest. Standing: Harry Smith.

viduals. Last year 74 teams competed in the contest and the total number of contestants was 225 as one school entered but two contestants and another only one.

The contest was divided into four sections. Section I, dairy judging, consisted of placing four classes of dairy cows and giving oral reasons on all classes. Section II, animal husbandry judging, consisted of placing two classes each of horses, beef cattle,

market value of alfalfa seed, ear corn, and wheat. Section IV, poultry judging, consisted of placing four classes of hens for past production and a written examination on the American Standard of Perfection.

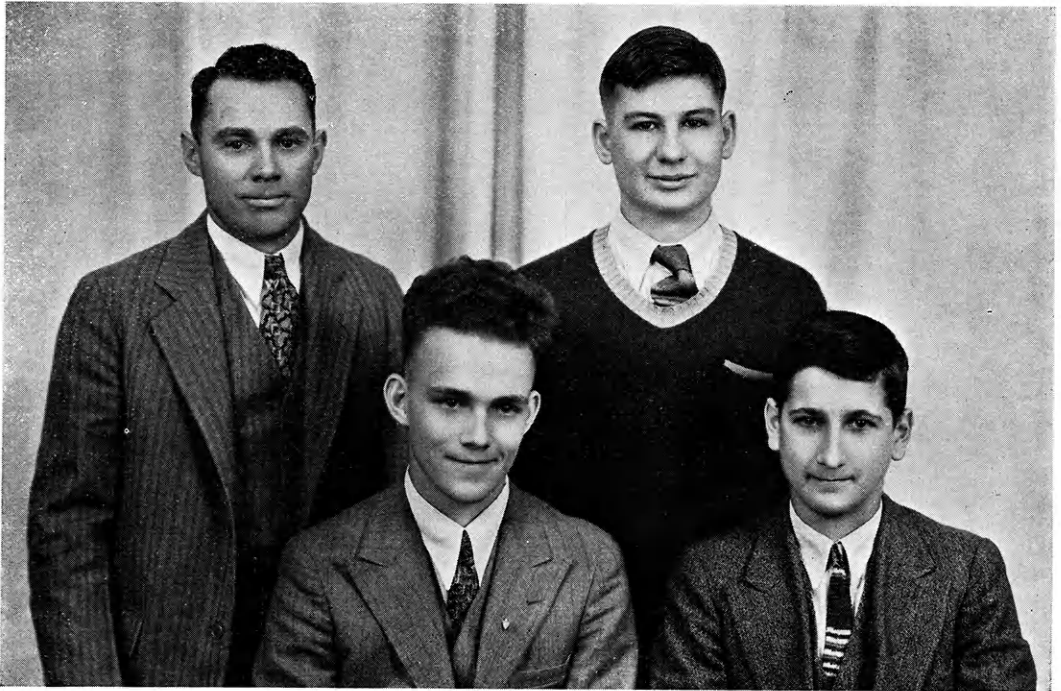
In Sections I and II, 50 points were allowed for reasons and 50 points for placings, making a total of 400 points in Section I and 600 in Section II. In Section III there were eight classes, each given an allowance of 100 points,

making a total of 800 points. In Section IV, 75 points were allowed for placing each class and 100 points for the examination, making a total of 400 points. The total of all four sections made a possible individual score of 2,200 points and a possible team total of 6,600 points.

The President's prize—a parchment certificate—awarded the team making

the entire contest was won by Kenneth A. Fisher of Newton High School, competing against 134 individuals throughout the entire contest.

Ribbons were awarded the first five teams and the first five individuals in both the entire contest and each section of the contest. Therefore, each team and each individual showing outstanding ability in the entire contest



SECOND HIGH TEAM IN THE STATE HIGH SCHOOL JUDGING CONTEST WITH THEIR COACH FROM NEWTON HIGH SCHOOL

Front row, left to right: H. Frederick Dudte and Earl F. Horst. Back row: R. M. Karns, coach, and Kenneth A. Fisher, high individual in the entire contest.

the highest score in the entire contest was won by Ottawa High School, competing against 44 teams throughout the entire contest. The team from Ottawa High School placed first in last year's contest. Two consecutive first placings in the entire contest speaks very highly for the Ottawa boys and their coach. The Dean's prize—a parchment certificate—awarded to the individual making the highest score in

or in any section received proper recognition. Team and individual scores up to tenth place in the entire contest are given in the accompanying tables.

The team ranking highest in each section of the contest received a parchment certificate from the department sponsoring that section of the contest. The college departmental clubs presented medals to the highest-scoring individuals in each section of the con-

HIGH TEAMS IN THE ENTIRE CONTEST

High School	Score				Total	Coach
	I	II	III	IV		
Ottawa H. S.	901	1,271	1,917	1,070	5,159	C. O. Banta
Newton H. S.	900	1,158	1,900	994	4,952	R. M. Karns
Hill City R. H. S.	857	1,246	1,815	1,031	4,949	S. S. Bergsma
Lawrence H. S.	771	1,309	1,753	1,006	4,839	W. R. Essick
Manhattan H. S.	907	1,375	1,679	869	4,830	H. W. Schmitz
Wamego H. S.	779	1,294	1,722	1,031	4,826	H. A. Myers
Concordia H. S.	770	1,365	1,709	846	4,690	A. G. Jensen
Carbondale R. H. S.	746	1,388	1,554	975	4,663	E. I. Chilcott
Harveyville R. H. S.	811	1,433	1,543	862	4,649	H. R. Bradley
Howard H. S.	776	1,363	1,505	984	4,628	J. A. Watson

HIGH INDIVIDUALS IN THE ENTIRE CONTEST

Contestant	Score					High School	Coach
	I	II	III	IV	Total		
Kenneth A. Fisher	334	453	663	344	1,794	Newton H. S.	R. M. Karns
Frank Burgess	309	454	666	355	1,784	Ottawa H. S.	C. O. Banta
Lynn Gambrell	322	423	633	354	1,732	Ottawa H. S.	C. O. Banta
Laverne Bird	266	435	652	348	1,701	Hill City R. H. S.	S. S. Bergsma
Albert Smith	270	515	616	273	1,674	Manhattan H. S.	H. W. Schmitz
James Hoferer	297	434	596	347	1,674	Wamego H. S.	H. A. Myers
H. Frederick Dudte	324	390	604	346	1,664	Newton H. S.	R. M. Karns
Clifford Blount	308	466	581	306	1,661	Coldwater H. S.	L. E. Melia
Hollis King	301	435	575	349	1,660	Hill City R. H. S.	S. S. Bergsma
Donald McMillan	293	489	533	344	1,659	Garden City H. S.	J. D. Adams

HIGH TEAMS IN EACH SECTION OF THE CONTEST

High School	Sec.	Score	Coach
Clay C. Com. H. S.	I	948	Edwin Hedstrom
Decatur Co. Com. H. S.	I	908	S. H. Howard
Manhattan H. S.	I	907	H. W. Schmitz
Ottawa H. S.	I	901	C. O. Banta
Newton H. S.	I	900	R. M. Karns
Harveyville R. H. S.	II	1,433	H. R. Bradley
Carbondale R. H. S.	II	1,388	E. I. Chilcott
Manhattan H. S.	II	1,375	H. W. Schmitz
Concordia H. S.	II	1,365	A. G. Jensen
Howard H. S.	II	1,363	J. A. Watson
Ottawa H. S.	III	1,917	C. O. Banta
Newton H. S.	III	1,900	R. M. Karns
Hill City R. H. S.	III	1,815	S. S. Bergsma
Lawrence H. S.	III	1,753	W. R. Essick
Wamego H. S.	III	1,722	H. A. Myers
Shawnee Miss on R. H. S.	IV	1,081	H. D. Garver
Lebanon H. S.	IV	1,074	F. A. Blauer
Ottawa H. S.	IV	1,070	C. O. Banta
Kiowa H. S.	IV	1,063	J. A. Johnson
Wamego H. S.	IV	1,031	H. A. Myers
Hill City R. H. S.	IV	1,031	S. S. Bergsma

HIGH INDIVIDUALS IN EACH SECTION OF THE CONTEST

Contestant	Sec.	Score	High School
Francis Patton	I	344	Burlington H. S.
Kenneth A. Fisher	I	334	Newton H. S.
David McWilliams	I	328	Quinter R. H. S.
Paul Bargren	I	326	Manhattan H. S.
H. Frederick Dudte	I	324	Newton H. S.
Wilmer Kruse	II	529	Marysville H. S.
Dallas LaClef	II	519	Concordia H. S.
Albert Smith	II	515	Manhattan H. S.
Lawrence Calkins	II	494	Harveyville R. H. S.
Donald McMillan	II	489	Garden City H. S.
Frank Burgess	III	666	Ottawa H. S.
Kenneth A. Fisher	III	663	Newton H. S.
Laverne Bird	III	652	Hill City R. H. S.
Clyde Bibb	III	639	Coldwater H. S.
Lynn Gambrell	III	633	Ottawa H. S.
Earl Horst	III	633	Newton H. S.
Maynard Barnes	IV	377	Howard H. S.
Donald Cover	IV	372	Shawnee Mission R. H. S.
Rex Dawe	IV	367	Wamego H. S.
Francis Green	IV	364	Shawnee Mission R. H. S.
Joy Mayhew	IV	362	Trousdale R. H. S.
Austin Frazier	IV	362	Lebanon H. S.

test. The teams winning these certificates and the individuals winning the departmental club medals may be noted in the accompanying tables, one of which gives the five highest teams in each section of the contest and another the five highest individuals in each section of the contest.

On Wednesday morning, May 4, the awards of the contest were announced and, according to Dr. C. W. McCampbell, this year was the first time in the history of these state contests that all winners of awards were present at the time of the announcement of awards. This shows that a keener interest was shown in this year's contest than has ever been shown before.

Students' Crops Judging Contest

W. M. Myers, '32

The tenth annual student crops judging contest, Saturday, May 7, 1932, became almost a family affair as the Dicken brothers of Winfield carried away high honors in their respective divisions. Tom D. Dicken, who was alternate on the crops team last fall, won the silver loving cup and \$5 cash prize

for first place in the senior division with a total score of 686. His younger brother, Raymond, won the cup for first in the freshman division in the contest with a score of 569.

In the spring of 1931, the Kansas City Board of Trade offered a scholarship of \$50 to the high man in the freshman division of the crops judging contest. This scholarship award was moved up to the junior division for 1932, and in this division Wilfred H. Pine, Lawrence, placed first with 641 points. However, since Mr. Pine won the Board of Trade award in the freshman division the previous year, he was ineligible by the rules of the contest to win it this year, and the award of \$50 was therefore presented to the contestant placing second, John O. Miller, Meriden, with a score of 603 points.

The freshman division was limited to those who had not had any college work in farm crops, the junior division to those who had had the course in Farm Crops, and the senior division to those who had taken advanced work in grain judging.

Work in the contest consisted of the identification of 120 samples; commercial grading of wheat, corn, and grain sorghums; and comparative placing of ear corn, Blackhull kafir heads, and hard red winter wheat for seed and show.

Other prize winners in the senior division were L. R. Chilson, Oberlin, second; A. E. Lowe, Argonia, third; F. R. Freeman, Kirwin, fourth; A. B. Erhart, Timken, fifth; and G. S. Fox, Rozel, sixth.

In the junior division H. T. Niles, Olivet, placed third; J. W. Mather, Grinnell, fourth; W. W. Rufener, Strong, fifth; and H. W. Coberly, Gove, sixth.

In the freshman division D. R. Cornelius, Wheaton, placed second; L. S. Evans, Washington, third; F. G. Parsons, Winfield, fourth; and E. W. Hollingsworth, Manhattan, fifth.

More than \$125 worth of prizes were

contributed by the Kansas City Board of Trade, Kansas Crop Improvement Association, and other commercial firms.

The contest, under the management of E. S. Fry, was sponsored by Tri-K, student agronomy organization, and by the faculty of the Department of Agronomy.

State High School Agricultural Engineering and Farm Shop Contests

Irving E. Peterson, '32

On May 2 and 3, 1932, the state high school agricultural engineering and farm shop contests were held as a part of the twelfth annual State High School Judging Contest. Teams from 25 schools participated. Last year teams from 16 schools participated in these contests.

The agricultural engineering contest was divided into three sections: Section I, Farm Machinery; Section II, Concrete Work; Section III, Plow Hitch. There also were three sections in the farm shop contest: Section I, Rafter Framing; Section II, Identification of Hardware; Section III, Welding. In each of the three sections of both contests there was a possible individual score of 1,000 points, making a possible team score of 12,000 points in all contests.

A certificate awarded the team making the highest general average was won by McDonald Rural High School, C. K. Fisher, coach. A certificate awarded the high individual was won by Howard Birkbeck, Burlington High School, Carl Heinrich, coach. A certificate awarded the team making the highest general average in agricultural engineering was won by Colby Community High School, R. W. Fort, coach. Certificates awarded the highest individual in each section of the agricul-

tural engineering contest were won as follows:

- Section I, Harold Jones, Concordia High School
- Section II, Oliver Laurie, Mulvane High School
- Section III, Donald Levering, Burlington High School

The individuals placing first, second, and third in each section of the agricultural engineering contest are indicated in the following tabulation:

Contestant	Sec.	Score	High School
Harold Jones	I	940	Concordia H. S.
W. Paul Jones	I	900	Frankfort H. S.
Andrew Norton	I	890	Gasco R. H. S.
Oliver Laurie	II	1,000	Mulvane H. S.
Leon Morland	II	932	McDonald R. H. S.
Richard Pincomb	II	926	Shawnee Mission R. H. S.
Donald Levering	III	880	Burlington H. S.
Howard Birkbeck	III	875	Burlington H. S.
Milton Bryon	III	854	Colby Com. H. S.

In each of the three sections in the farm shop contest, useful tools were awarded to the three high-ranking individuals. A list of the winners and prizes follows:

Contestant	High School	Prize
SECTION I		
1. Charles Cooper, Carbondale R. H. S.		Saw
2. Dwight Metzler, Carbondale R. H. S.		Screwdriver
3. Evald Hanson, Decatur Co. Com. H. S.		Screwdriver
4. Oliver Laurie, Mulvane H. S.		Pocket Screwdriver
SECTION II		
1. Andrew Norton, Gasco R. H. S.		Pliers
2. Wyndon Hurlock, St. Francis Com. H. S.		Screwdriver
3. Dwight Metzler, Carbondale R. H. S.		Steel Rule
SECTION III		
1. Evald Hanson, Decatur Co. Com. H. S.		Hammer
2. Ralph Paralicek, Decatur Co. Com. H. S.		Screwdriver
3. Howard Birkbeck, Burlington H. S.		Screwdriver

HIGH TEAMS IN THE ENTIRE CONTEST

High School	Score	Coach
McDonald R. H. S.	8,518	C. K. Fisher
Decatur Co. Com. H. S.	7,977	S. H. Howard
Manhattan H. S.	7,593	H. W. Schmitz

Students' Dairy Cattle Judging Contest

Earl C. Coulter, '33

As the scores will indicate, competition in the 1932 annual students' dairy cattle judging contest was as keen as ever. Of the total of 46 entries, 32 were in the junior division and 14 in the senior division. As in the past, eight classes were judged, four cow

classes, on which reasons were given, and four classes of heifers.

Wayne W. Jacobs, Harper, winner of the senior division, had the unique distinction of having been the winner of the junior division in last year's contest. He was presented with a pen and desk set. Will M. Myers, Bancroft, second-ranking individual, received a silver medal; and Raymond J. Cohorst, third high individual, received a bronze medal. Scores of the eight high contestants in the senior division are as follows:

1. Wayne W. Jacobs, Harper.....1,058
2. Will M. Myers, Bancroft.....1,040
3. Raymond J. Cohorst, Marysville....1,031
4. Carl C. Conger, Iola.....1,027
5. Orville F. Denton, Denton.....1,027
6. Harold L. Kugler, Abilene.....1,023
7. Carmy G. Page, Norton.....1,020
8. Dallas D. Alsop, Pittsburg.....1,018

Highest individual rankings on breeds in the senior division are as follows:

- Guernsey.....Will M. Myers
- Ayrshire.....Will M. Myers
- Jersey.....Orville F. Denton
- Holstein.....Arvid T. Johnson

In the junior division, Russell C. Nelson, Falun, was high-ranking individual for which he received a 15-jewel watch. William H. Juzi, Florence, placed second, receiving a silver medal, and Walter M. Lewis, Larned, third, receiving a bronze medal.

Scores of the 10 high-ranking individuals in the junior division are:

1. Russell C. Nelson, Falun.....1,002
2. William H. Juzi, Florence..... 961
3. Walter M. Lewis, Larned..... 959
4. J. Warren Mather, Grinnell..... 954
5. Lester A. Zerbe, Salina..... 953
6. Paul L. Fickel, Chanute..... 951
7. Lewis S. Evans, Washington..... 946
8. Frank S. Burson, Jr., Monument... 945
9. Charles E. Murphey, Leoti..... 943
10. Marvin E. Vautravers, Centralia.... 942

Highest individual rankings on breeds in the junior division are:

- Guernsey.....Robert F. McNitt
- Ayrshire.....J. Warren Mather
- Jersey.....Nevlyn R. Nelson
- Holstein.....Frank S. Burson, Jr.

High-ranking individuals on the breeds for the entire contest will receive a year's subscription to the breed paper given by the respective breed associations. They were as follows:

	Score
Guernsey.....Will M. Myers.....	285
Ayrshire.....Will M. Myers.....	287
Jersey.....Orville F. Denton.....	284
Holstein.....Frank S. Burson, Jr.....	265

This year, for the first time, a young lady, Miss Olive E. Schroeder of Frederick, matched her skill with the other contestants. She made a very creditable showing, surpassing several contestants.

Managers of this year's contest were the members of the 1931 dairy cattle judging team: F. Dean McCammon, Manhattan; Arthur C. Thomson, McCune; and Earl C. Coulter, Willis.

HOME FRUIT GROWING

(Continued from page 102)

and varieties is fundamental to success in fruit growing. The average small planter is not in direct touch with the nurseryman. His only relation to the nursery is through the salesman. The inexperienced grower, unless he has given careful thought to the fruits suited to his conditions and needs, is not in a position to order intelligently. In buying of an agent the buyer should make sure that the agent is an authorized representative of a reliable nursery. The Agricultural Experiment Station of the College of Agriculture of his own state is the best place to get the necessary information for ordering good nursery stock.

During the growing of a young orchard, from the time it is planted until the time it comes into bearing, there are necessary things to be done in order for the young trees to grow into a productive orchard. The trees must be properly pruned and sprayed, and the soil must be properly cared for. This is usually where the home fruit grower fails. He forgets that the trees during these seven or eight years require

more care than at any other time during their lives. Proper care of the small orchard is just as necessary as it is of the commercial orchard, if the desired results are to be obtained. No general farmer in Kansas should attempt to grow a home orchard if he is not both willing and equipped to give it the proper care including soil management, spraying, and pruning.

Thirtieth Annual Student Live-stock Judging Contest

The thirtieth student live-stock judging contest, sponsored by the Block and Bridle Club, student animal husbandry organization, was held Saturday, May 14, 1932. Earl C. Coulter, Willis, placed first in the senior division with a score of 546, and Lewis S. Evans, Washington, won high honors in the junior division with a score of 537 points out of a possible 600.

The 10 high men in each division of the contest and their scores were as follows:

SENIOR DIVISION

Contestant	Score
Earl C. Coulter, Willis.....	546
Arthur C. Thomson, McCune.....	538
Laurence R. Daniels, St. Francis.....	536
John I. Miller, Prescott.....	536
Carly G. Page, Norton.....	533
Carl Williams, Dodge City.....	531
Raymond B. Wagner, Richmond.....	506
John B. Roberts, Manhattan.....	504
Harold A. Daily, Waverly.....	499
Boyd R. Cathcart, Winchester.....	494

JUNIOR DIVISION

Contestant	Score
Lewis S. Evans, Washington.....	537
Howard A. Moreen, Salina.....	532
Harold H. Hersh, Manhattan.....	529
Arthur A. Boeka, Colby.....	527
Wilbur R. Crowley, Burden.....	525
Edward F. Moody, Greeley.....	525
Harold P. Walker, Bucklin.....	509
Russell C. Nelson, Falun.....	508
Lester A. Zerbe, Salina.....	498
William H. Juzi, Florence.....	495
Edward W. Pitman, Scott City.....	495

The junior division was limited to students who had not taken more than the elementary course in animal hus-

bandry and the senior division was open to those who had taken advanced work in live-stock judging. In the junior division the contestants placed eight classes consisting of three animals each and gave written reasons on four of the classes. In the senior division the contestants were required to place eight classes consisting of four animals each and give oral reasons on four classes.

The prize for high man in the senior division, won by Mr. Coulter, was a gold medal awarded by the National Block and Bridle Club. The first prize in the junior division, won by Mr. Evans, was a silver trophy awarded by the American Royal Live Stock Show. Medals were also awarded those placing second and third in each division. In the senior division there were 20 contestants; in the junior division, 69.

The high man in each of the four kinds of live stock in each division of the contest was awarded a fountain pen. The winners were: Senior division: Beef cattle—Earl C. Coulter; hogs—Carmy G. Page (1); sheep—John I. Miller; horses—Laurence R. Daniels. Junior division: Beef cattle—Harold P. Walker; hogs—J. Warren Mather; sheep—Howard A. Moreen; horses—Emory L. Morgan.

The contest was managed by John I. Miller, president of the Block and Bridle Club.

1. Earl C. Coulter, who was high man in the beef cattle classes, also placed first in the hog classes. Since but one fountain pen was awarded a contestant, the award in the hog classes was made to Carmy G. Page who placed second in those classes.

A. G. Philips, '07, is general sales manager of the Allied Mills, with headquarters in Chicago. This organization was formed in 1930 by the consolidation of a number of feed companies. Mr. Philips has charge of the sales force of approximately 150. He also has charge of the advertising, the educational work, and the preparation of formulas for the company.



PRIDE IN ACHIEVEMENT AND A RIGID STANDARD OF QUALITY IS RESPONSIBLE FOR THE REPUTATION OF THE CAPPER ENGRAVING COMPANY AS BEING SYNONYMOUS WITH THE BEST IN CREATIVE ART AND PHOTO-ENGRAVING

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The Pine Pole Fence

Earl H. Regnier, '32

The first semester of the college year, 1931-'32, reopened the course of silviculture, with Prof. E. W. Johnson, state forester and nurseryman, as instructor. One of the major problems of the class was the thinning of the pine grove which was planted on the Horticulture Farm some twenty-five years ago.

The disposal of the poles of the discarded trees was another problem, but not for the silviculture class or anyone else excepting perhaps the Department of Horticulture. It happened that this silvicultural activity was mentioned at a meeting of the Horticulture Club early in November. Many suggestions were made concerning the use of the poles in the form of a memorial to the Hort Club. These included a log cabin, a log shelter, and other rustic acces-

sories that seem to be necessary at the average picnic grounds.

After much consideration it was decided to erect a pole fence, such as students of Kansas, and especially western Kansas, read about but seldom see. From the landscape point of view this would add greatly to the aesthetic value of the pine grove and create a general interest to the visitors of the farm.

The work was started on the first

bitious, secured a gallon of cider from the cold-storage room, climbed in his truck, gathered up some seven or eight other members, with necessary axes, saws, etc., proceeded to the Hort Farm on that never-to-be-forgotten, snappy Sunday morning and by high noon of the same day 350 feet of the fence, stretching the entire length of the pine grove, was completed.

It should be fitting and proper to



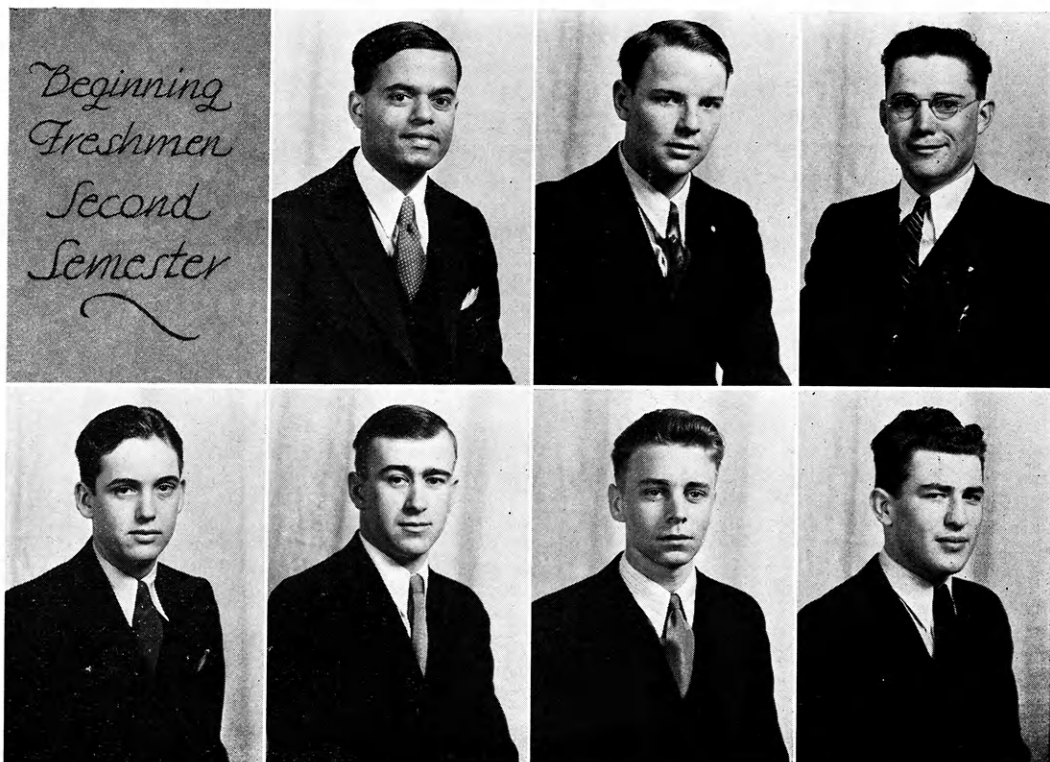
THE PINE POLE FENCE RECENTLY CONSTRUCTED ALONG THE OLD HORT PINE GROVE

Saturday of December by members of the silviculture class, with suggestions by Mr. W. P. Blaine, the farm foreman. The purpose the class had in mind was to instigate an interest in the members of the club and arouse the free will (working will) of that group. But some way the experiment seemed to fail. Professor Johnson left for Hays, Kan., at the end of the semester and seemed to be rather disgusted with the project. We can't help sympathizing with his feelings, because it did look like a flop.

But something broke loose during the semester vacation and a certain member of the Hort Club, feeling am-

mention the men whose ambition on that said day, completed the memorial to the Hort Club. They are: Wilber and Lloyd Copenhafer, Ralph D. Barnhart, Joseph S. Adams, Erwin Abmeyer, Kenneth R. Hougland, Andrew C. Elson, and Earl H. Regnier.

Recent results obtained by the Agricultural Experiment Station in cattle-feeding experiments emphasize the value of quality cattle, wintering well, grazing to August 1, and full feeding in the dry lot for 100 days in carrying calves through the winter and marketing them the following autumn.



Freshmen, 1931-'32

In the October issue of the Ag Student the names and pictures of the freshmen of the division were given. Freshmen enrolling for the first time the second semester of a college year are comparatively few. The second semester of this year there are seven, as follows:

TOP ROW

STEPHEN P. DAS
Bangalore, S. India
GEORGE W. GERBER
Oneida

JOHN M. GRISWOLD
Marysville

BOTTOM ROW

HOWARD A. MOREEN
R. 1, Salina

ROLAND A. MUNSELL
Sedgwick

HAROLD G. RICHARDSON
Belleville

LESTER A. ZERBE
R. 1, Salina

To Boyd R. Cathcart of Winchester, first-semester senior, went the honor of receiving the Senator Arthur Capper award in agricultural journalism for 1931-'32. His name will be engraved on the large shield in Kedzie Hall. The outstanding journalist in the Division of Agriculture is named each spring for this honor. Previous winners of the award are:

Tudor J. Charles, Jr., Republic.....1928
Theodore F. Guthrie, Jr., Saffordville, 1929
Kenneth M. Gapen, Madison, Wis.....1930
George D. Oberle, Carbondale.....1931

Lot F. Taylor, '31, is manager of an extensive cattle ranch near Ashland.

C. E. Kielhorn, '25, Cambridge, is another K. S. C. graduate who is engaged in the cattle business. He makes a specialty of prime yearling beef on an extensive basis.

Eighth Annual Agronomy Field Week

Luther A. Jacobson, '32

The eighth annual Agronomy Field week was May 16 to 21, 1932. Each day farmers from certain counties in eastern Kansas attended the field day programs chiefly for the purpose of studying the experimental work of the Department of Agronomy of the Agricultural Experiment Station. The Departments of Dairy Husbandry, Poultry Husbandry, and Horticulture, however, cooperated in a helpful way in making the days profitable to the visitors.

From 10 to 11 a. m. the visitors studied the problems of farm dairying with the members of the Department of Dairy Husbandry. Following this an hour was spent on the Poultry Farm. In the afternoon a program designed especially for farm women was sponsored by the Department of Horticulture, with Prof. L. R. Quinlan and Prof. W. B. Balch in charge, assisted by Prof. J. W. Zahnley of the Department of Agronomy. The use of shrubs and flowering plants for landscaping Kansas homes and the seeding and care of lawns were the chief problems discussed.

The afternoon program for men was given in a tour of the Agronomy Farm. Prof. R. I. Throckmorton, head of the Department of Agronomy, was in charge, assisted by other members of the agronomy research staff. The most important function of the Agronomy Farm is to afford an opportunity for conducting experiments under field conditions. Approximately 100 acres, involving about 2,000 plots sown to various varieties of field crops and treated in various ways, are used for this purpose. In the cereal and forage crop nurseries there are about 10,000 rows of varieties, strains, and hybrids of crops from all parts of the world and selections from all the important varieties of the state.

Results of experiments in soil fer-

tility and cropping systems were among the important things discussed. In the soil fertility work, Prof. F. L. Duley explained the effects of different cropping systems and soil treatments on the yields of crops.

Rotations including alfalfa have been superior to other systems. Among the important things mentioned was the fact that the effect of alfalfa on other crops continues for several years after the alfalfa sod has been plowed. The average yield of wheat the first year after breaking alfalfa, for a period of nine years, was 29 bushels per acre. In the same nine years, ground which had not been in alfalfa yielded an average of only 21.8 bushels of wheat per acre. The average percentage of protein in the wheat following alfalfa was 15.1 per cent, and in wheat from land continuously cropped to wheat, 12.3 per cent. A plot which grew alfalfa for a period of only one year, eight years ago, continues to have a larger amount of available nitrogen than plots which have not grown alfalfa. As yet neither lodging nor burning has occurred after alfalfa which was broken in August for the late seeding of wheat.

It was pointed out that the intelligent use of barnyard manure is one of the means of increasing the productivity of the average eastern Kansas farm and will return a good profit. The use of commercial fertilizers for field crops in this part of Kansas should be confined chiefly to the use of superphosphate on alfalfa and perhaps a small amount of phosphate or high-grade mixed fertilizer on wheat where the land is medium to low in fertility.

Prof. H. E. Myers, who is in charge of the nitrogen fixation project, explained that it was not necessary to inoculate soil with azotobacter. The small number of azotobacter that could be added by this method are in-

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Eleventh Annual Ag Fair

Earl H. Regnier, '32

No doubt both students and faculty had a questionable attitude toward the early proposed plans of the Ag Fair Board. But something had to be done. The Ag Fairs of the past few years were successful spiritually but not financially. And someone had to take a chance; the Ag Fair had been dormant for one season. This dormancy made a mark on the Ag students visible to the upper classmen and faculty. When elections to agricultural societies and organizations were held, new students and other prospectives had not displayed their potential ability outside of the class room.

With these things to consider, the will of the 1932 Ag Fair Board and faculty advisory committee favored a revival of the Ag Fair as a spring function this year.

Plans for this fair, which was held Saturday, April 30, 1932, at the stadium, were radically different from previous fairs, but still enough of the usual features were retained to bring about a "fair" atmosphere. These plans were discussed in a previous issue of the Ag Student.

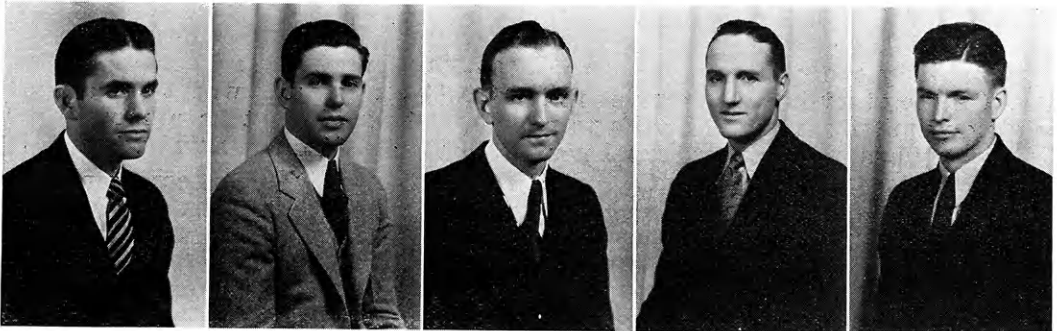
Financially the 1932 Ag Fair practically "broke even." Yes, we will prob-

ably send this statement to the Ripley "Believe it or not" column. But in actual figures, Bob Blair, treasurer of the 1932 Ag Fair, reports that expenditures exceeded the receipts by less than \$10. The new location, the saving on housing and dance facilities, and the economy measures practiced by all in charge—not forgetting that it failed to rain this year on the "fair" date—are responsible for the outcome of the fair, which was as good as could have been expected. The hearty cooperation of Ag students and faculty in their efforts to make the fair a success has the appreciation of the Fair Board and those concerned with responsibility.

The educational exhibits, the most interesting and educational that have competed at Ag Fairs for years, were given all the room they wanted for display. Eleven departments and organizations competed for the silver loving cup awarded to first place by the Ag Fair Board. The dairy exhibit won first place, the 4-H Club, second, and the agronomy, third.

The Ag follies, the most popular side-show on the pike, entertained a "full house" at all its shows. The minstrels,

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AGS ELECTED TO PHI KAPPA PHI SECOND SEMESTER, 1931-'32

From left to right: Franklin L. Parsons, Ruleton; Charles W. Nauheim, Hoyt; Irving E. Peterson, Haddam; Duane H. Daly, Armington, Ill.; Thomas D. Dicken, Winfield.

AgS elected to Phi Kappa Phi the first semester representing the top 5 per cent of the class of 1932 are, Will M. Myers, Bancroft; W. Loy McMullen, Oberlin; Jay R. Bentley, Ford. Their pictures were given in the December issue.

Wheat in a Cattle-fattening Ration

G. Raymond Kent, '32

Chemical analyses of wheat and corn indicate they should have approximately the same feeding value. Practical cattle feeders, however, have obtained conflicting results on the comparative feeding value of these two grains. The results obtained in feeding eight lots of yearling steers at the Kansas Agricultural Experiment Station during the past winter throw light on this feeding problem.

Even if the price of wheat should be higher than corn, the use of low-grade wheat as a feed for live stock should prove profitable both to the wheat farmer and to the live-stock feeder.

The eight lots of cattle were divided into two series. One series received silage in conjunction with grain, cottonseed meal, and alfalfa hay. The second series was fed the same feeds as the first series except that no silage was used.

Each lot of the first series received two pounds of alfalfa per steer daily and sufficient silage to satisfy the steers' roughage requirements. The second series was fed liberal amounts of alfalfa hay at first, but the amount was gradually reduced as grain was increased.

The series receiving liberal amounts of alfalfa hay did not need so much protein supplement. Accordingly they were fed only one pound per head per day. On the other hand, the series receiving a limited amount of alfalfa was fed two pounds of cottonseed meal per head per day.

The grain portions of the rations were fed according to appetites, thus determining directly the palatability of ground corn and ground wheat or of mixtures of the two since the other components of the rations were fed at approximately the same levels. Up to 12 pounds per steer per day, however, increases in grain were made at the same rate in all lots.

Considerable care was exercised in getting the cattle on feed because they were to be fed 180 days. It took approximately sixty days to increase the grain to 12 pounds. After this, however, the amount of wheat was less than the amount of corn taken by the steers, yet at no time were any of the lots off feed.

Results with the silage series will be discussed first. The average daily gains were as follows: Ground corn, 2.34 pounds; ground corn $\frac{2}{3}$, ground wheat $\frac{1}{3}$, 2.40 pounds; ground corn $\frac{1}{3}$, ground wheat $\frac{2}{3}$, 2.42 pounds; and ground wheat 2.16 pounds. The differences among the first three lots are not significant, but the ground-wheat lot gained 8 per cent less than the ground-corn lot, which approximates results secured at other stations. This failure of the ground-wheat lot to gain as well as the other lots was due to a smaller consumption of wheat than of corn or a mixture of corn and wheat. Mixing ground wheat with ground corn increased the palatability of the wheat.

While feed consumption and gains indicate in a general way the value of a feed, the real test is the amount of feed consumed per 100 pounds of gain. On this basis ground corn was 86 per cent as efficient as ground wheat. On this same basis ground corn was 88 per cent as efficient as a mixture of ground corn $\frac{1}{3}$ and ground wheat $\frac{2}{3}$; and 89 per cent as efficient as a mixture of ground corn $\frac{2}{3}$ and ground wheat $\frac{1}{3}$.

The four lots of steers were appraised on the basis of the value per hundredweight at Kansas City. The ground-corn lot and the ground corn $\frac{1}{3}$, ground wheat $\frac{2}{3}$ lots were appraised at equal values. The ground-wheat lot was appraised slightly lower because the steers in this lot did not gain so much as the other lots. Due to plainness which developed in some of the steers in the lot fed ground corn

$\frac{2}{3}$ and ground wheat $\frac{1}{3}$, this lot received the lowest appraisal.

Summarizing the results from these four lots it can be said that when fed with a ration of silage, cottonseed meal, and alfalfa hay, wheat will give the most satisfactory results if ground and mixed with ground corn. The proportions to feed will depend upon the amounts of these grains available.

In the second series the same comparisons of wheat and corn were made. Alfalfa hay, however, was the only roughage fed.

The average daily gains were as follows: Ground corn 2.46 pounds; ground corn $\frac{2}{3}$, ground wheat $\frac{1}{3}$, 2.51 pounds; ground corn $\frac{1}{3}$, ground wheat $\frac{2}{3}$, 2.65 pounds; and ground wheat, 2.55 pounds. These differences in gains are probably not significant. The gains made by the cattle in this series are unusually large.

The steers in this series consumed on the average $5\frac{2}{3}$ pounds of alfalfa per head daily. Wheat was again less palatable than corn.

In feed required per 100 pounds of gain, ground corn alone was 90 per cent as efficient as ground wheat alone; 93 per cent as efficient as the mixture of ground corn $\frac{1}{3}$, ground wheat $\frac{2}{3}$; and equal to the mixture of ground corn $\frac{2}{3}$, ground wheat $\frac{1}{3}$.

The appraised values in this series indicated definitely that ground wheat made satisfactory beef. These results suggest that when wheat is as cheap or cheaper than corn, wheat alone could be used satisfactorily for fattening cattle. Ground wheat caused no digestive disturbances, and no difficulty was experienced in keeping the cattle on a full feed of wheat.

When viewed in its entirety, the most significant thing about this experiment is that 60 head of cattle were fed in six lots on either ground wheat alone, or mixtures of ground wheat and corn, and in every instance the results were satisfactory.

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Common Parasites of Poultry

E. Dwight Chilcott, '32

Poultrymen are agreed that parasites, both internal and external, are often the limiting factor in both egg and meat production. More than 50 per cent of all the inquiries received by agricultural experiment stations in regard to poultry are questions pertaining to the control and prevention of the common parasites.

The last few years, which have brought a great increase in the number of large commercial poultry farms, have also increased the importance of the control of parasites. A few years ago the continuous-type brooder house was used altogether on the Pacific coast. Poultry raisers began to be bothered with coccidiosis and roundworms. They immediately turned to the use of the colony-type brooder house, but soon found that all of their small farms were infested. Lately, they are again using the continuous-type of brooder house, but are using either concrete runs or screen porches, until the chickens are old enough to ward off the attacks of the parasites.

Prevention is by far the better method of control. Whether it be prevention or treatment that the poultry raiser finds necessary to use, he must first know something of the life history and habits of the parasite in order to control it most effectively. There are many different species of poultry parasites, including both external and internal.

The louse is one of the most important external parasites. The body louse is the most common of the many kinds of lice. The body louse is a biting, crawling parasite which feeds upon the wastes from the skin. It is usually found around the vent but may occur any place else. A few lice serve only to irritate the bird and lower egg production but a large number may be a factor in the death of the bird. The louse lives, eats, and reproduces upon

the bird. It lays eggs (nits) at the base of the feathers. These hatch in from eight to ten days.

The birds afflicted with lice are best treated with sodium fluoride by dusting or dipping. Dusting is the best means of application in winter and the dust should be applied with special care around the vent. The dip, a summer application, is composed of 1 ounce sodium fluoride to 1 gallon of water. Enough soap flakes should be added to facilitate the dip's clinging to the feathers. Nicotine sulphate is often used to remove lice from birds by putting a line of the liquid on the upper surface of the perches with an oil can about two hours before the birds go to roost. The warmth from the birds will evaporate sufficient nicotine sulphate to kill the lice.

The mite is an important external sucking parasite. It works at night when the birds are on the roost. It lives and reproduces in cracks and crevices. Mite eggs hatch in eight to twelve days. Mites will live for a considerable time without a host. The characteristic "salt and pepper" droppings around over the roosts and near cracks are indications of the presence of mites. At night they suck blood from the birds. This irritates the birds and greatly lowers their vitality and egg production. If the house is infested, apply a contact spray of kerosene or shingle stain to the roosts, dropping boards, and rear wall. Follow this procedure by painting these structures with some coal tar product such as carbolineum. Crankcase oil is of little value in controlling mites except to assist in filling cracks.

The scaly leg mite occurs on the shank of the chicken. It lives its whole life among the scales. It opens up the scales producing irritation thus making the legs tender. To treat scaly leg,

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Some Observations on Beneficial Insects

R. O. Snelling, '32

Fortunately not all of our insects are our enemies. Many of them are useful, and some of them have become essential to certain biological activities.

It is not necessary to consider this subject long before the value of certain insects to man becomes apparent. Perhaps the silk worm should be mentioned first of all. It furnishes material for clothing. Certain scale insects related to the San Jose scale produce a waxy material from which shellac is made. Shellac is used in paints and varnishes and in making inks, gramophone records, jewelry settings, and various other articles of commerce. The pulverized bodies of certain other scale insects contain cochineal which technicians find useful in their laboratories.

Everyone is familiar with the honey-bee which works unceasingly during the summer visiting one flower after another. Its life is spent at hard labor in gathering nectar and storing honey for the future, of which man forcefully takes his toll, leaving the bee only enough for bare sustenance. The fact is not generally known that honey is used for other purposes than food. Among its less well-known uses, honey is used in the preparation of shaving cream, lotions, and numerous other useful commodities.

While the bee is busily engaged in its activities of gathering food, it is performing an invaluable act to mankind in the cross-pollination of flowers, particularly of the different varieties of orchard fruits. The majority of these fruits, such as apples, pears, plums, and cherries, are partially or wholly self-sterile and cross-pollination is essential to the production of abundant crops.

Bumblebees, while objectionable on certain occasions, perform a worthy service in the cross-pollination of red clover. Apparently the production of

red clover seed depends almost entirely upon the presence of a sufficient number of bumblebees in the field at the blooming of the plants to bring about cross-pollination.

Many insects, by catching and devouring other insects for their food, are indirectly friends of man. These are known as predacious insects and are of immense value in aiding man in the fight against his insect foes. The ladybird beetles or "ladybugs" are the most important species of predacious insects. They are widely distributed and usually abundant. Both the adults and larvae feed upon scale insects, aphids, and some other noxious insects. About 250 species of ladybird beetles are found in the United States, over 80 of which are present in Kansas, and all but two or three, so far as is known, are predacious and beneficial.

Another family of beetles, namely the ground beetles, should be mentioned for their value in destroying injurious insects. They are primarily beneficial in destroying insect pests that are found upon the ground or on the trunks and branches of trees. The "fiery hunter" and the "searcher" are two typical ground beetles which have the habit of climbing trees in search of other insects.

Parasitic insects are those that live upon or within the eggs or bodies of other insects and derive nourishment necessary for their growth from their living hosts. Parasitic insects are among the best natural checks of insect pests. The parasitic forms are distributed mainly through the two orders, Diptera and Hymenoptera. Parasitic insects lay their eggs on a variety of other insects and in general they are confined to some particular stage upon which they lay their eggs. Certain tachinid flies frequently deposit their eggs on caterpillars and often in great

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Atlas Sorgo for Fattening Lambs

John I. Miller, '33

An experiment at the Kansas Agricultural Experiment Station under the supervision of Prof. Rufus F. Cox, of the Department of Animal Husbandry, was completed recently which has given some interesting results upon the use of atlas sorgo for fattening lambs. Two hundred and seventy New Mexico white-faced lambs of good quality were divided into 10 lots. They were started in the experiment December 3, 1931, and finished March 22, 1932, being on feed for a period of 110 days.

Atlas sorgo is becoming of increasing importance in Kansas as it provides an abundance of both roughage and grain. It is being grown extensively in regions where corn is not a sure crop. Although the experiment deals with atlas sorgo, the results of the feeding are thought to be applicable generally to the similar use of any of the grain sorghums.

One of the problems involved was to try to determine what proportion of concentrates to roughage would give the best results when the fodder (head and stalk) was ground together. The grinding was done with a hammer mill, and grain was added to make up the grain allowance. It was found that the lambs receiving 50 per cent roughage and 50 per cent concentrates made larger and cheaper gains than those fed 40 per cent concentrates and 60 per cent roughage of the same feeds. The lambs fed the ground atlas fodder without any added grain, making their ration 25 per cent concentrates and 75 per cent roughage, failed to fatten satisfactorily and their gains were the most expensive of any of the lots. These lambs, however, made the largest and cheapest gains of all for the first 40 days of the feeding period, thus emphasizing the well-known fact that it is economical to feed a relatively large amount of roughage during the

early part of the feeding period.

The Agricultural Experiment Station has done considerable work trying to determine the feeding value of ground limestone in rations deficient in lime. Several lots of lambs in this experiment presented interesting comparisons on the value of ground limestone. One-fourth of an ounce of ground limestone per lamb was fed daily at a cost of $1\frac{1}{4}$ cents per lamb for the entire feeding period. Lambs getting a ration with only atlas or wheat grain, cottonseed meal, and atlas fodder were compared with those receiving the same ration plus alfalfa hay. It was found that lambs getting a ration without alfalfa, or one that was low in lime, made $2\frac{1}{2}$ to $4\frac{1}{2}$ pounds larger gains per lamb when the calcium deficiency was made up with ground limestone than when no limestone was fed. However, when a small amount of alfalfa hay was fed, no advantage was gained by feeding the limestone. The general conclusion was that there was a decided increase in gain and lowering of the cost of gains when one-fourth of an ounce of lime per head daily was fed to fattening lambs receiving a ration deficient in lime.

At this time of relatively low prices of wheat, many lamb feeders are much interested in the value of wheat as a grain for fattening lambs. In this experiment wheat was compared with atlas grain. It was found that the wheat-fed lambs gained over $2\frac{1}{2}$ pounds more per head and that their feed cost for 100 pounds of gain was \$5.02 as against \$5.21 in atlas-fed lots. Where the two grains were compared in a ration having ground limestone, the wheat-fed lots still made the highest gain but at a slightly higher cost than the atlas-fed lots. This difference may be due to the fact that wheat has a higher lime content than atlas and in this comparison the addition of ground limestone

brought the grains more on an equal basis.

It can be seen from these results that wheat makes an excellent feed for fattening lambs and that it can well be used when the price permits.

Atlas fodder, when fed with ground limestone, compares favorably with atlas fodder and alfalfa hay as a roughage. Lambs getting the ground atlas fodder with ground limestone lacked $1\frac{1}{4}$ pounds per lamb of making the total gains of those fed alfalfa, but the feed cost per 100 pounds of gain was \$4.56 as compared with \$4.74 in the alfalfa-fed lots. The difference of 6 pounds per lamb total gain was in favor of the alfalfa-fed lots when no ground limestone was added to the atlas fodder-fed lot. It can clearly be seen by these results that the addition of ground limestone to a fattening ration deficient in lime greatly increases the efficiency of that ration. Rations so supplemented compare very favorably with alfalfa hay as the roughage. These results would indicate that there could well be more lamb feeding in parts of Kansas where sorghums are the chief roughage and the supply of alfalfa hay is limited or at a relatively high price.

An interesting comparison of atlas silage with ground atlas fodder was made between two lots. Silage was used as the sole roughage and in an amount sufficient to correspond to the ground atlas fodder fed in the fodder lot. When fed with atlas grain and cottonseed meal, the ground atlas fodder produced larger and cheaper gains than did atlas silage. Although the relative value of the fodder and silage was not figured on a per acre basis, the results show that the dry matter in fodder was at least equal to a like amount in silage.

This experiment in general recognizes the value of atlas sorghum and ground limestone in a lamb-fattening ration. The adaptability of atlas to the eastern two-thirds of Kansas and its

forage value will make it a crop of increasing importance. The value of ground limestone to supplement rations deficient in lime is being tried out at several agricultural experiment stations. This experiment conducted at the Kansas station has added much to the experimental knowledge concerning the feeds studied and will be of great benefit to lamb feeders of Kansas who will use a sorghum roughage in their fattening ration.

PARASITES OF POULTRY

(Continued from page 122)

wash the shanks with soap and water and then dip in a mixture composed of one part of kerosene and one part of olive or cottonseed oil.

Among the internal parasites of poultry the large roundworm is a serious pest. This worm may be three inches long and is not segmented. It is located in the intestines and destroys the mucous lining with a subsequent loss of fat and a lower egg production. Its eggs are deposited with the feces. These undergo a period of incubation, 17 days, and at the end of the period are in the coiled embryo stage. These may be eaten by other birds and are the infective stage of the parasite. It is hard to infect chicks with roundworms after they are 10 to 12 weeks old.

The best means of combating the roundworm is to incorporate 2 per cent tobacco dust into the mash. A laxative should also be given consisting of one-fourth of a pound of Epsom salts per 100 birds for small chickens or 1 pound per 100 birds for old hens. This treatment should be repeated each week for several weeks to clean out the digestive tract.

The tapeworm is one of the most insidious of the internal parasites. There are several species, ranging in size from microscopic parasites to those 10 inches long. The tapeworm is continuously attached to the wall of the intestine and absorbs food from the

digestive tract of the fowl. It irritates the wall and may clog the intestinal tract. The worm is composed of segments and each segment has a complete set of reproductive organs. Eggs are passed in the feces and are eaten by flies, grasshoppers, roaches, and slugs which serve as intermediate hosts.

Kamala is the best treatment for tapeworms of poultry. A one-gram capsule of kamala for a bird three-fourths grown is about the right amount and a two-gram capsule for mature turkeys is the right size. The treatment is often severe on egg production, reducing it as much as 50 per cent for ten days.

It is of vital importance when planning a poultry house and in choosing its location to keep sanitation in mind. All measures that can be taken by the poultry raiser to prevent any infestation of parasites in his flock will be paid for, many times over, in the increased vitality of his birds and in the greater egg production.

BENEFICIAL INSECTS

(Continued from page 123)

abundance on army worms. Some species of hymenopterous parasitic insects deposit their eggs within the eggs of other insects, inside of which the tiny parasite finds sufficient food to bring it to maturity. Usually a parasitic species attacks only one stage of its host. Other species of parasites may attack other stages of the host and some parasites may choose many different hosts for egg deposition.

Strangely enough, one species, at least, of a hymenopterous parasite has been shown to lay its tiny white eggs on leaves of infested plants where they hatch into curious larvae, heavily armored with chitinous plates and provided with numerous hooks and spines. Each larva is active but lies in wait until a host comes its way when it quickly grabs hold and fastens itself firmly to the skin of its victim. Other

parasitic insects are known to lay their eggs on the leaves of the host's food plant. When the host devours the leaves the tiny eggs pass into the host's body where they hatch into internal parasitic larvae.

In conclusion, it might be stated that only a small number of beneficial insects have been mentioned, but their presence is of great importance in the activities of man. It might be further stated that of all our insects, over one-half are either beneficial or neutral, that is, neither harmful nor beneficial. When these facts are considered it is difficult to realize just what conditions would exist if beneficial insects were not present.

ANNUAL AG FAIR

(Continued from page 119)

not so well attended, but truly a worthwhile show, displayed much talent and ability.

The afternoon feature—the pushball game—was won by the Ags 3 to 0. The Ags scored twice in the first quarter; once in the second, against a fairly strong northwest wind. At the half the Engineers admitted defeat and the game was discontinued.

The old Ford race with some nine or ten entries was won by C. L. Beal driving Garrison's "Red Flash." His time was 4 minutes and 45 seconds on a four-mile (square) track.

The greased pig, turned loose on the gridiron following the pushball game, was captured by Wayne Burbank, the varsity 126-pound wrestler, who was awarded the pen and pencil prize. The hayseed contest was won by J. D. Smerchek, senior Ag from Garnett, Kan.

The dance, held in the gym from 9 until 11:30 p. m. was well attended. At 11 o'clock the Goddess of Agriculture, Miss Helen Smerchek, was announced. In a brief ceremony, led by Assistant Dean Hugh Durham, the crowd was thrilled by the crowning of the first K. S. C. Goddess of Agriculture amid

flashes from photographer's lights.

Students who, acting as committee chairmen, made this fair possible were:

Old Ford race: Oliver W. Shoup
 Greased pig: W. Loy McMullen and Ralph C. Munson
 Push ball: Tom D. Dicken and Will M. Myers
 Turpin race: Gaylord R. Munson
 Ag minstrels: Edwin J. Krasny
 Ag follies: L. Albert Wilhelm
 Concessions: Carl Williams and Claude L. King
 Refreshments: John I. Miller, Andrew B. Erhart, and Arthur C. Thomson
 Educational exhibits: Jay R. Bentley and Herbert W. Clutter
 Lights: Dallas D. Alsup
 Construction: Carl E. Elling
 Transportation: John G. Bell
 Hayseed contest: Charles W. Nauheim
 Ballyhoo: Claire W. Munger
 Signs and decorations: Andrew C. Elson
 Police: Joyce W. Miller and Clark C. Milligan
 Dance: Laurence R. Daniels
 Check stand at dance: John E. Hester
 Tickets: Boyd R. Cathcart and Pius H. Hostetler
 Prize committee: Alfred W. Helm, Chester G. Thompson, and Vernon E. Burnett
 Moon room: Joe D. Smerchek

The Ag Fair Board recommends that the Ag Fair be made a fall function, perhaps changing seasons with Ag Barnwarmer, for the following reasons:

1. Everyone is "fair" minded—fairs are in season in the fall.
2. More student "pep" and enthusiasm can be aroused in the fall.
3. The weather hazard is not so great in fall as in the spring.
4. The fall season is not so rushed as the spring.
5. A sufficient number of students are not competing for judging teams to carry on the Ag Fair.

AGRONOMY FIELD WEEK

(Continued from page 118)

significant compared to the large number necessary in the soil. If soil conditions are favorable, azotobacter organisms will increase without inoculation. Another purpose of the nitrogen fixation project is to study the comparative value of alfalfa, sweet

clover, and soybeans as soil improvement crops as measured by yields obtained in rotations with corn, oats, and wheat.

Much interest was shown by the visitors in the alfalfa experiments. Attempts are being made to obtain an alfalfa variety or strain that is resistant to alfalfa wilt and that is winter hardy. This work is in charge of Mr. C. O. Grandfield of the United States Department of Agriculture. The yields secured in variety tests show that Kansas Common is the most satisfactory alfalfa to grow in Kansas. A few importations and regional strains made better yields and appear to be good varieties for hay, but results are not conclusive enough to warrant any change in recommendations at present. Ladak, a northern variety of alfalfa, has the ability to produce a heavy first cutting, but the later cuttings are lighter and the yield was extremely low for the fourth cutting.

Recent results from cultural treatment plots indicate that better stands are maintained if alfalfa has some protection through the winter. Plots having this protection showed a quicker and more vigorous growth in the spring resulting in higher yields of hay the first two cuttings.

Important factors in maintaining a stand of alfalfa are an ample reserve supply of plant food stored in the roots in the fall and some winter protection. High root reserves can be secured by permitting the crop to reach full-bloom stage before harvesting the late summer and early fall cuttings and allowing the plants to carry a growth of 8 to 10 inches through the fall season into the winter. The top growth will give the needed winter protection.

The wheat variety tests conducted by Prof. H. H. Laude showed many interesting results. For the 21-year period during which Kanred has been grown, it has averaged 2.7 bushels per acre more than Turkey. Blackhull has produced the highest average yield for the

13-year period it has been grown. The difference between Blackhull and Kanred is 1.5 bushels per acre. Tenmarq has made the highest yield during the eight years it has been tested, outyielding Blackhull 3.7 and Kanred 4.8 bushels. Tenmarq is less winter hardy than Kanred or Turkey and is not recommended for northern and western Kansas. Kawvale, which is not satisfactory in the hard wheat region because of the soft character of the kernel, has made a slightly higher yield than Fulcaster in the six years it has been tested. Resistance to leaf rust and some resistance to Hessian fly are other outstanding characters of Kawvale.

Korean lespedeza, a new leguminous forage crop, can be grown profitably in the eastern third of Kansas according to Prof. A. E. Aldous. Its greatest use will be for the improvement of native grass pastures. It may also be used profitably on sour land where sweet clover and alfalfa cannot be grown profitably without liming. Korean lespedeza has value for growing on thin eroded land to stop washing and at the same time gradually improve the fertility of the land.

Variety tests of oats have been conducted for 15 years. Kanota has outyielded all other varieties. Variety tests of flax have been carried on for two years. Linota has made the highest average yield followed by Winona. These varieties are resistant to flax wilt. Other experimental work carried on includes the corn experiments under the direction of Dr. A. M. Brunson and soybean and sweet clover experiments conducted by Prof. J. W. Zahnley.

Alumni Notes

H. W. Mathews, M. S., '31, is in the research department of Swift and Company, Chicago.

W. C. Meldrum, '14, is one of the successful cattlemen of Kansas. He oper-

ates on a large scale near Dexter.

H. E. Moody, '22, Tecumseh, is farming and feeding hogs in large numbers.

D. R. Hooton, '21, is assistant pomologist in the United States Department of Agriculture, located at Greenville, Tex.

R. R. Oehmcke, M. S., '31, is in the United States Indian Service. He is located at Chilocco Indian School, Chilocco, Okla.

C. O. Jacobson, '28, M. S., '31, is assistant in dairy industry in the Agricultural Experiment Station of Arkansas, Fayetteville.

E. F. Hubbard, '28, M. S., Minn., '30, is employed by the St. Louis Dairy Council. His address is 1930 Railway Exchange Building, St. Louis, Mo.

H. W. Rogler, '26, is farming and handling cattle near Matfield Green. In addition to his own cattle he looks after 1,500 to 2,000 range cattle for non-resident owners.

J. C. Wingfield, '23, is superintendent of the Agricultural Experiment Station at Matanuska, Alaska. For several years he has been associate horticulturist at the Matanuska station.

Orville E. Hays, '30, M. S., '32, has been appointed by the United States Department of Agriculture as collaborator on the soil erosion project at the Fort Hays Agricultural Experiment Station, Hays, Kan.

Alonzo Lambertson, '31, has been working for the past few months as a mechanic at Bolling Field, the Army and Navy airport at Washington, D. C. Recently he has been taking a short course in aeronautics in the Aeronca Flying Club school and a recent Washington daily mentions his first solo flight.

R. W. Sherman, '24, in the plant quarantine work in the U. S. D. A., reports his present address as 24 Raymond Terrace, Norwalk, Conn.

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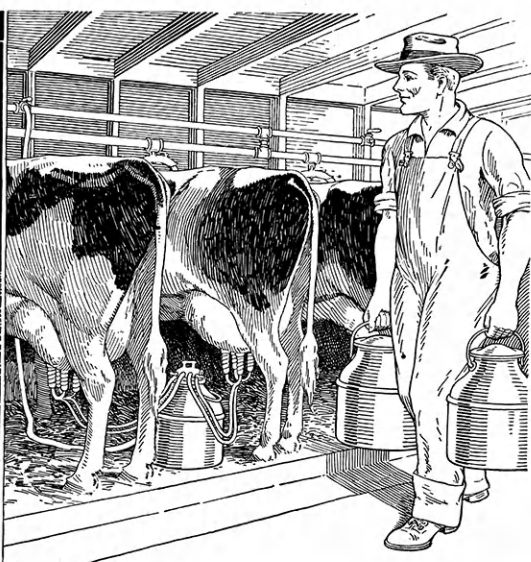
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