

Circular No. 43

January, 1917

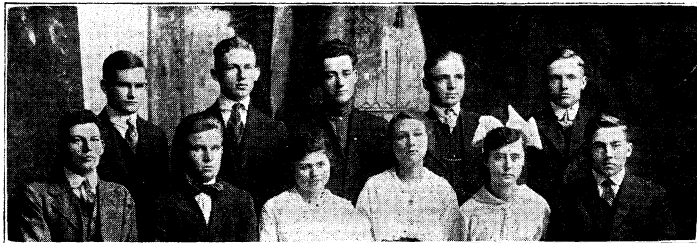
Oklahoma
Agricultural and Mechanical College
Stillwater, Oklahoma

Extension Division
In Cooperation With
United States Department of Agriculture

JAS. A. WILSON
Director of Extension and State Agent

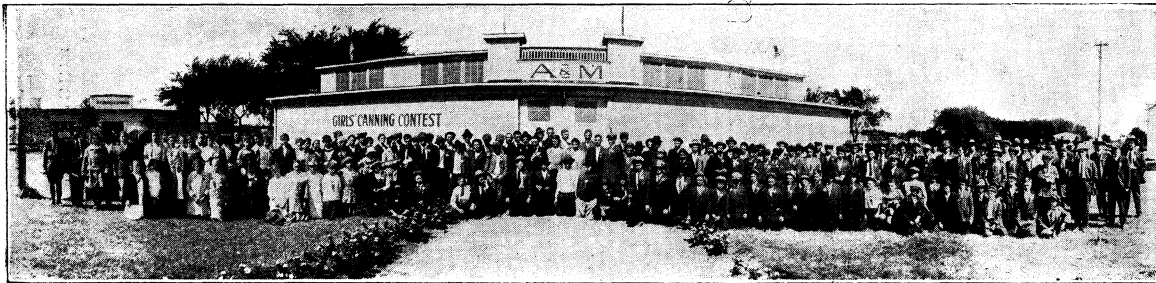
Hand Book
For
Boys Agricultural Clubs
With
Suggestions to Teachers

By John E. Swain, Assistant State Boys Club Agent



Scholarship Winners, Oklahoma A. & M. College, Year 1916-1917

Address Communications to
Boys Club Department, Stillwater, Oklahoma



OKLAHOMA STATE FAIR SCHOOL, OKLAHOMA CITY, OKLAHOMA, SEPTEMBER 26-30, 1916



BOYS GRAIN AND COTTON EXHIBITS, STATE FAIR, 1916



BOYS PIG CLUB EXHIBITS, STATE FAIR, 1916

THE COUNTRY BOY'S CREED

I believe the country, which God made, is more beautiful than the city, which man made; that life out of doors and in touch with the earth is the natural life of man. I believe that work is work wherever I find it, but that work with nature is more inspiring than work with the most intricate machinery. I believe that the dignity of labor depends, not on what you do, but on how you do it; that opportunity comes to a boy on the farm as often as to a boy of the city; that life is longer, freer and happier on the farm than in the town; that my success depends, not on my location, but on myself; not upon my dreams, but upon what I actually do; not upon luck, but upon pluck. I believe in working when you work, playing when you play, and in giving and demanding a square deal in every act of life.—Edwin Osgood Groover.

INDORSEMENT BY STATE SUPERINTENDENT R. H. WILSON

To the Teacher:

In our modern schools a wider use should be made of bulletins and tracts issued at public expense for free distribution. Many teachers have formed the habit of using such material and have in this way increased their teaching power many fold. Since a great deal of useful information is found in publications issued by State and National departments, colleges and universities, the pupils in our public schools should form the habit of consulting these public documents frequently.

This "Handbook for the Boys Agricultural Clubs, With Suggestions to Teachers" has my hearty approval. It is my hope that every teacher in the State will be supplied with a copy, and that it will be used by teachers, pupils and parents.

The plan of the book is excellent. It is in line with my recommendations for providing practical training in thrift.

R. H. WILSON,
State Superintendent of Public Instruction.

December 15, 1916.

ACKNOWLEDGEMENT

In the preparation of this bulletin, we are indebted to the Agronomy, Animal Husbandry, Entomology and Engineering Departments of the A. and M. College for their kindly suggestions, criticisms and contributions of cuts, negatives, etc.

We are especially indebted to Mr. C. L. Chambers and Harry Embleton, agents in animal Husbandry in charge of Pig and Poultry Club work, respectively, and to Professor George Wilson, Chair of Agriculture for Rural Schools of the A. and M. College, who have contributed many of the lessons and assisted with the planning of the work.

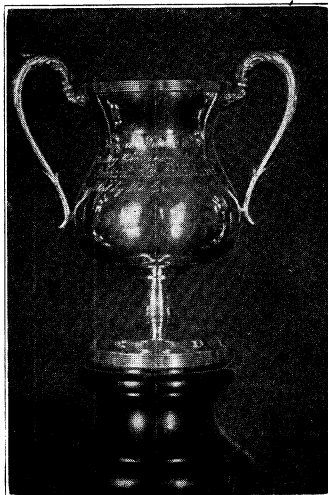
Boys Club Agent.

PURPOSE OF THE BULLETIN

The club movement that is taking hold of the young lives of our country promises to afford the teacher a most potent means of vitalizing the everyday work of the school. The problems of securing the interest of the pupil in the common school branches; the teaching, in an effective way, of farm and home economy; and the gaining of the abiding interest of the school patrons, seems to have, in a large measure, their solution in the correlation of agriculture with the common school branches by means of the Boys and Girls Clubs.

It is the purpose of what follows:

1. To give the public a better understanding of the history, organization and plans of club work;
2. To suggest some ways and means to the rural teacher by which the subjects of agriculture and club work may be correlated with the subjects taught in the public schools, and thus the interests of the country home and school be more closely connected;
3. To furnish a series of practical lessons in club work for the benefit of the club members and members of the agricultural classes which the teacher can use in connection with the subject of agriculture;
4. To secure a closer cooperation between the educational forces and the demonstration forces of the State in order to improve the practical agricultural education of the farmers of the future.



HISTORY OF BOYS CLUB WORK IN OKLAHOMA

EARLY CLUB ORGANIZATION

In Holmes county, Mississippi, during the year 1906 a tall rural schoolmaster spent many a long evening after the numerous duties of the day were over in studying out a plan to interest and improve a number of boys in his district who hated school—boys, as he described them, who were “hand minded”—but boys whom he believed capable of receiving a practical education.

The man was W. H. Smith, better known in Mississippi as Corn Club Smith, later Superintendent of Public Instruction of the State, and now President of the State Agricultural and Mechanical College.

The plan he studied out resulted in a boys and girls club organization, carried on in connection with the public schools.

The results were satisfactory from the first. With a definite object in view, the boys increased the acre yields and acre profits. With their success in the field came pride in their work. They began to take more interest in their personal appearance, their school and their studies. The manhood of Mississippi had been increased.

FEDERAL CLUB ORGANIZED

Dr. Seaman A. Knapp, who has been called the most fruitful, constructive personality ever attached to the Agricultural Department, and a man who was, then, devoting his entire time in trying to improve agricultural conditions in the South, was becoming almost discouraged in attempting permanent reforms by trying to teach adults new methods. Even before Corn Club Smith organized his first Corn Club, Dr. Knapp had considered the advisability of spending more time with the boys in order to train the coming generation rather than having his agents devote all their time with the adults, as had previously been their custom. In 1907, immediately after Smith's successful experiment, Dr. Knapp authorized the formation of Federal Corn Clubs, modeling the organization after the one formed in Mississippi in 1906.

FIRST OKLAHOMA ORGANIZATION

About the time that Corn Club Smith was organizing his first club, and that Dr. Seaman A. Knapp was drafting his rules for a Federal organization, W. D. Bentley, now of the department at Washington, and then demonstration agent for Northwestern Texas and Southwestern Oklahoma, was enrolling boy demonstrators in his district and securing very creditable results. In 1908 Mr. Bentley was transferred to Tishomingo and made state agent of Oklahoma. During this first fiscal year, 1908-9, the rules for a Federal corn club having been drafted, Mr. Bentley formed the first corn club organization in the new State. The entire work at this time was under his direct charge and was supervised from the office at Tishomingo.

EVOLUTION OF CLUBS

The history of the Oklahoma clubs is fragmentary until 1914, due to the fact that most of the records were destroyed by fire when Morrill Hall of the A. and M. College was burned. The following facts, however, are authentic, being secured from the agents diaries and reports that escaped the fire:

In 1910 the official headquarters were maintained at Yukon. This year Mr. Bentley found it advisable to organize a cotton club for the boys of Oklahoma. It proved to be very popular in the cotton belt, and was encouraged in its work by numerous prizes offered by the Cottonseed Crushers Association and other cotton industries.

In 1911 the Oklahoma club work had grown to such an extent that Mr. Bentley found it necessary to secure additional help, and so Mr. Fred H. Ives became assistant, in charge of club work. At this time a girls canning club was organized and supervised by the agent in charge of the boys clubs. During this year there were 7,366 young people enrolled in the different clubs.

Mr. N. E. Winters was appointed assistant in charge of club work in 1912. This year a kafir club was formed for the benefit of the boys in the western part of the State, where it was not practical to plant corn. The club enrollment increased to 8,322 members. The enrollment by clubs was as follows:

Corn Clubs	4,676
Cotton Clubs	2,972
Kafir Clubs	674

The State office was changed to Oklahoma City in 1913. This year Mr. T. M. Jeffords was in charge and added to the Oklahoma list a boys pig club. The total club enrollment was 4,854 members, and a premium list was offered to them by the business men of the State amounting to \$1,644.25.

In 1914 Mr. James A. Wilson, now state agent, was appointed assistant state agent in charge of Boys Clubs. This year the girls work had grown to such an extent that a special agent was needed to carry it on. Miss Emma A. Chandler was appointed to this position.

The enrollment of the Boys Clubs for the year was as follows:

Corn Clubs	1,818
Cotton Club	1,195
Kafir Clubs	805
Pig Clubs	466

making a total of 4,284 members. A premium list was offered to these boys this year at the State Fair amounting to \$3,968.00. A State Fair school at Oklahoma City and Farmers Short Course at the College were maintained for the prize-winners from the various counties. During the summer the State and Federal forces were united under one management, and the Federal office was moved to the A. and M. College at Stillwater. At this time Mr. H. R. Hedger was appointed as an assistant in Boys Club work.

During the first half of the club year 1915 the boys work was under the charge of John E. Swaim, with H. R. Hedger as assistant. Mr. Hedger resigned in the summer and was succeeded by Mr. C. L. Chambers, who had direct charge of the Pig Club work.

A peanut club was organized in a number of counties this year for the first time, and a farm makers club for the colored boys.

The club enrollment was as follows:

Corn Clubs	2,817
Cotton Clubs	1,210
Kafir Clubs	1,475
Pig Clubs	1,136
Peanut Clubs	94
Farm Makers	217

making a total in all Boys Clubs of 6,949 members.

The premium list offered to the boys of the State by the business men's organizations, State Board of Agriculture, State Board of Education, State Fair Association, and individuals, amounted to \$6,500.00. This year club members were enrolled in all of the seventy-seven counties of Oklahoma excepting Adair, Cimarron, Delaware, Dewey and Woods. A state fair school was maintained at Oklahoma City which was attended by 148 boys, prize winners. At the Short Course held at the College 72 boy prize winners were in attendance.

All clubs organized in 1915 were continued in 1916 with the addition of a crop rotation club. The Kafir Club was changed to a grain sorghum club, taking up work in kafir, milo and feterita. To the Pig Club was added a Breeding Phase. The same officials were in charge as in the latter half of 1915, with the addition of Mr. Harry Embleton, who had charge of both the boys and girls in the Poultry Club work.

The enrollment for the year follows:

Corn Clubs	2,738
Cotton Clubs	1,236
Grain Sorghum Clubs	1,119
Peanut Clubs	912
Crop Rotation Clubs	353
Farm-Makers	375
Poultry Clubs (boys)	767
Pig Clubs	2,087

making a total of 9,587 members.

The above enrollment represents all counties in the State except Adair, Delaware, Dewey, Cimarron and Major.

The premium list offered to the boys this past year was greater than ever before, amounting in all to \$12,919.23.

The number of individual exhibits displayed by club members in state contests was 1,677, representing Corn, Grain Sorghum, Cotton, Peanut and Pig Club and Boys Poultry Club exhibits.

The club members reporting profit cleared \$46,625.11, an average of \$32.31 per boy.

PRIZE WINNERS

The list of prize winners in club work in Oklahoma includes several thousand boys, representing practically every county in the State. We are giving only the names of those club members who hold state records:

- 1909 Corn Club—
Lester Brown, Lexington, Cleveland county, Oklahoma. Yield 68 bushels per acre.
- 1910 Corn Club—
Floyd Gayer, Ardmore, Carter county, Oklahoma. Yield, 95.1 bushels per acre.

- 1911 **Corn Club—**
Philip Wolf, Kildare, Kay county, Oklahoma. Yield, 80½ bushels per acre.
Cotton Club—
Chas. Brannon, Checotah, McIntosh county, Oklahoma. Yield, 2,869 pounds seed cotton per acre.
- 1912 **Corn Club—**
Elston Coleman, Newkirk, Kay county, Oklahoma. Yield, 101.5 bushels per acre.
Cotton Club—
Ernest Worthy, Baum, Carter county, Oklahoma. Yield, 2,279 pounds seed cotton per acre.
- 1913 **Corn Club—**
Elbert Cast, Rush Springs, Grady county, Oklahoma. Yield, 101.8 bushels per acre.
Cotton Club—
Onie Minard, Indianola, Pittsburg county, Oklahoma. Yield, 2,018 pounds seed cotton per acre.
- 1914 **Corn Club—**
Clarence Brixey, Chandler, Lincoln county, Oklahoma. Yield, 95.5 bushels per acre.
Cotton Club—
Jesse Box, Altus, Jackson county, Oklahoma. Yield, 2,290 pounds seed cotton per acre.



A Champion Corn Grower of Canadian
County

- Kafir Club—**
Clifton Grove, Wetumka, Hughes county, Oklahoma. Yield, 88.5 bushels per acre.
- 1915 **Corn Club—**
Orion Stuteville, Alfalfa, Caddo county, Oklahoma. Yield, 111.1 bushels per acre.
Cotton Club—
James Auten, Stonewall, Pontotoc county, Oklahoma. Yield, 2,801.5 pounds seed cotton per acre.
Kafir Club—
Wm. Thompson, Gabriel, Cherokee county, Oklahoma. Yield, 89 bushels per acre.
Peanut Club—
May Hayes, Luther, Logan county, Oklahoma. Yield, 92 bushels per acre.
Pig Club—
Leland Green, Mazie, Mayes county, Oklahoma. Gain in weight in four months, 270 pounds, and net profit of \$14.80.
- 1916 **Corn Club—**
Orion Stuteville, Alfalfa, Caddo county, Oklahoma. Yield 122½ bushels per acre.
Cotton Club—
Presley Powell, Shawnee, Pottawatomie county. Yield, 2,400 pounds of seed cotton per acre.
Grain Sorghum Club—
Neil Woodward, Oklahoma City, Oklahoma county. Yield 77 bushels per acre.
Peanut Club—
Guy Scroggs, Perkins, Payne county. Yield 100¼ bushels per acre.
Pig Club—
Kenneth Carpenter, Woodward, Woodward county. Profit \$346.00; grew eleven registered Duroc Jersey pigs in one litter.
Poultry Club—
Hubert Johnson, Claremore, Rogers county.
(Best exhibit of trio of birds)

EFFECT OF CLUB WORK ON THE LIVES OF BOYS

The beneficial effect of club work on the growing boy is very marked. By giving the boy interesting employment we are able to direct his mind along constructive lines. "An idle brain is the Devil's workshop", and for this reason we believe in keeping the boy active. If he is not busy in his field, he will be studying his literature or working on his reports; thus many hours, which would be idle otherwise, are changed to hours of activity. The truth of the statement, "Train a child up in the way he should go and when he is old he will not depart therefrom", is beginning to be noticed in our club work.

When the boy has an acre of crop of his own, often there is more or less competition between the father and son, and this adds interest. If the boy excels in his results, the results secured by the father, as is usually the case, he takes a greater pride in his work and feels a certain amount of importance on account of his accomplishment. The people of the neighborhood know he is a member of the club and begin to talk about his success. He feels that he is of some consequence in the community and so takes a greater interest in his personal appearance and conduct. He is more careful of his clothing.

keeps his neck and ears clean and begins to comb his hair. The success he has achieved in his crop leads him to desire success in other lines. He catches the inspiration, studies his lessons more, and soon is able to analyze sentences and solve problems as well as any one in school. He takes more interest in athletic work on account of this new-found power, and soon is improved mentally, morally and physically.

Herman Shockley of Mannsville, Johnston county, an awkward, raw-boned country boy, joined the Boys Corn Club against his father's advice in 1913. He followed the instruction of his county agent, although his father and neighbors made fun of him for being a "book farmer".

His crop soon began to show the effect of his careful work, and the father and neighbors were silenced. The results secured in the fall, although not as high as many others, were sufficient to convince the young man that there was a better way to do than to grow one crop (cotton) and farm as the father had farmed. Fall found the young man in school, firmly resolved that he would change his poor record and complete the eighth grade. He did so, putting in all the spare time he could secure in studying bulletins on agricultural subjects.

In 1914 Herman joined the Corn, Kafir and Cotton Clubs, having learned the importance of diversifying his crops. Again the young man was successful with his work and won a number of prizes, among which was a free trip to the State Fair School at Oklahoma City.

The trip to the State Fair was a revelation to this backward country boy. He stated that he didn't know the world was so large and there were so many things in it. He kept his eyes open, however, and learned all he possibly could.

In 1915 Herman joined all the Boys Clubs—Corn, Kafir, Cotton and Pig. This year the value of the crops grown was \$275.00, and he won in prizes about \$50.00. Among his prizes was another trip to the State Fair School. The change in the boy was very noticeable even in the one year. He was not so timid, or as awkward. He was dressed much better, and had an air of confidence and determination about him.

His father has also "been converted" to better agriculture. He has begun to diversify his crops and grow some livestock. He is a renter, and since Herman has brought about this change in him he has been able to secure a better farm nearer town with better advantages.

Herman has enrolled again in the clubs. He is working for a scholarship in the A. and M. College, as he is anxious to become a better farmer.

EFFECT OF CLUB WORK ON THE COMMUNITY

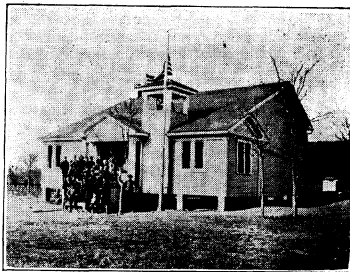
In almost every community where a club has been conducted for a number of years, more interest is taken in community activities than before. The social advantages are better, the school is more satisfactory, greater interest is taken in Sunday school and church work, and conditions average better on the farm. The club activities seem to be a common ground on which all the people of a community can meet in harmony.

One of the most noticeable effects of Boys and Girls Club work on community life is that of School District No. 30 in Pontotoc county. This community had made several attempts to build a new school house, but every time the matter had been voted down. The county agent organized a boys and girls club at this point and these

young people began to work for a new school house. They were able to get the parents together as no other agency had been able to do. As a result of their cooperation a new building was erected which has now become a real social center. The pictures of the houses before and after the club organization follow:



School House Before the Formation of Club



The Building Erected Due to Club Organization

EFFECT OF CLUB WORK ON CROP PRODUCTION

The influence of the Oklahoma club work has materially increased the total and acre yields of the principal crops of the State. In nearly every crop, however, the acreage has been diminished. This proves that the farmers are diversifying.

The following table, taken from the State Board of Agriculture's annual report, is very interesting:

CORN CROP OF OKLAHOMA

Year	Acres	Yield	Acre Yield
1911	5,675,000	36,888,000	6.5
1912	5,448,000	101,878,000	18.7
1913	4,750,000	52,250,000	11.0
1914	4,000,000	50,000,000	12.5
1915	4,080,000	102,000,000	25.0

It will be observed that during the five-year record above, the corn crop of the State was increased from 36,750,000 to 102,000,000 bushels, an increase of 65,000,000 bushels. The acreage was decreased from 5,500,000 to 4,000,000 acres, or a decrease of 1,250,000 acres. The average acre yields were raised from 6½ to 25 bushels.

The results secured in the other clubs are practically the same.

BRIGHT PROSPECTS FOR THE FUTURE

The Oklahoma club work is now only in its infancy. It is being recognized by the business men's associations, State Board of Agriculture, State Board of Education, and educators in general as being the most permanent form of our extension work. Its influence for good is now being felt over the State, and it is destined to become one of the leading factors in placing Oklahoma in the front ranks of the agricultural States.

HOW A TEACHER MAY ORGANIZE A CLUB

When teachers have pupils of club age who wish to enroll in some of the demonstration clubs, they should communicate at once with the county or woman agent, who are the local representatives of the Boys and Girls Club Departments, and have full supplies for the organization of clubs, or, write to the county superintendent, who will be able to give full information relative to this work.

Elsewhere in this bulletin will be found the club rules which will give definite information regarding the work carried on and the requirements for membership. In case there are as many as ten club members in your district who desire enrollment, a local club organization may be formed with the approval of the county agents, officers elected, and regular meetings held.



Union Valley School Club, Pontotoc County, Oklahoma

Suggested Constitution and By-Laws for Demonstration Clubs

Article 1. Name of Club.—This organization shall be known as School Boys and Girls Agricultural Club.

Article 2. Objects of Club.—The objects of the club shall be to make farm life more attractive and farming more profitable.

Article 3. Membership.—Boys and girls from 10 to 18 years of age shall be eligible.

Article 4. Officers.—The officers of this club shall be a supervisor, president, vice president, secretary and treasurer.

Article 5. Duties of Members.—Prescribed in the rules for contests, such as: Follow instructions, attend club meetings, make exhibits at the school and county fair, and keep a report of the expenses, income, observations, and work.

Article 6. Duties of Officers.—The president shall preside at all meetings; the secretary shall keep the minutes and records of all such meetings; the treasurer must care for all funds collected and shall pay out the same only upon the written order of the president; the vice president may act as president in the absence or disability of that officer. The teacher shall be supervisor, having the general supervision of all local club work and power of exercising authority in proper management of the club.

Article 7. Advisory Committee.—An advisory committee shall arrange for all public contests and exhibits, the procuring and awarding of prizes, and the reporting of statistics and other information to the county agent. This committee shall consist of the county agent, as chairman; the county school superintendent, the woman agent, if there is one, and one or two other members representing the business and farming interests of the county.

Article 8. Field Instruction.—The county and woman agents shall have charge of all field meetings and practical instruction.

By-Laws

1. The members of the club shall agree to read all reference literature bearing upon the home project. This may include literature dealing with the growing of corn, grain sorghums, cotton, peanuts, tomatoes, poultry, pigs, calves, cooking, canning, etc.

2. A written plan of the work of each boy and girl must be prepared for the teacher. They must do all the work connected with the particular contest or project entered upon.

3. The amount of yield by weight and measurement of land in grain clubs, and the records in Pig, Calf and Poultry Clubs must be certified to by the contestant and attested by at least two disinterested witnesses, preferably members of the local school board.

4. Every member of the club must make an exhibit at the annual school fair, county fair or club contest.

5. In order to determine profits, the general expense account for each club will be accurately kept.

6. All awards on club work shall be based upon the score cards listed in the Club Rules.

7. No local organization should be formed with less than ten members.

8. Upon passing their eighteenth year, club members will be eligible to membership in the local Farmers Club.

GENERAL RULES FOR BOYS CLUBS

The following clubs will be organized and supervised by the county agent, in cooperation with the Oklahoma A. and M. College and United States Department of Agriculture: Corn, Grain Sorghum (kafr, milo, feterita), Peanuts, Cotton, Three Crop (rotation), Poultry, Pig and Calf.

Requirements

1. Enrollments must be made out on the official enrollment card and sent to the county agent.
2. Boys must be from 10 to 18 years of age, inclusive, January 1 of the year in which the work is to be done.
3. All club members must read carefully all literature sent them from the county agent or Boys Club Department at Stillwater, and follow the instructions as closely as possible.
4. All club members must keep a complete record of all work done in connection with their club, using books and blanks furnished by the Boys Club Department.
5. An exhibit of the season's work should be made at the county fair or contest.
6. A complete record of the year's work must be made out and mailed to the county agent by November 10, or before if possible. Blanks for these reports will be mailed each club member.
7. Corn Club members must cultivate one acre of corn as directed by the department, keep an accurate record on blanks provided by Office of Boys Clubs, and should exhibit at the county fair or contest ten ears of corn.
8. Grain Sorghum Club members must cultivate one acre of one of the grain sorghums (kafr, milo or feterita) as directed by the department, keep an accurate record on blanks provided by Office of Boys Clubs, and should exhibit at the county fair or contest ten heads of the grain grown on the acre.
9. Peanut Club members must cultivate one acre of peanuts as directed by the department, must keep an accurate record on blanks provided by Office of Boys Clubs, and should exhibit at the county fair or contest one-half peck of nuts.
10. Cotton Club members must cultivate one acre of cotton as directed by the department, keep an accurate record on blanks provided by Office of Boys Clubs, and should exhibit at the county fair or contest 30 open bolls of cotton.
11. Three Crop Club (rotation)—
Plan A. Three-Acre Basis.—The club member must cultivate three acres of ground each year for a period of three years, one acre

to be planted to corn, grain sorghums or cotton, one to cowpeas or peanuts and one to winter wheat or winter oats. The crops must rotate each year. A complete record must be kept of the work done on blanks provided for that purpose and exhibits of crops produced made at the county fair or contest.

Plan B. Club member must cultivate one acre of ground for a period of three years, growing either corn, grain sorghums or cotton the first year, peanuts or cowpeas the second year, and winter wheat or winter oats the third year. A complete record must be kept of the work done and exhibit made at the county fair or contest.

12. Poultry Club (boys and girls)—

(a) First Year Members.—Each member must set three sittings of purebred eggs (if possible), raise at least seven purebred pullets and one cockerel (if possible) to be carried over for the second year's work, keep an accurate record on blanks provided by the Office of Boys and Girls Clubs and exhibiting a trio of birds at the county fair or contest.

(b) Second Year Members.—Each member must set three sittings of purebred eggs and raise at least fifteen purebred pullets and two cockerels (if possible), keep an accurate record on blanks provided by Boys and Girls Club Department, furnish a report of the first year's work and exhibit a trio of birds at the county fair or contest.

Note.—There will be a poultry management contest, open to second-year members who have shown that they are especially interested in the Poultry Club work. There will be a suitable premium list for this contest.

13. Pig Club—

(a) Fattening Phase.—Each club member must secure one pig (any breed or mixed breed) which will be less than eleven months of age March 15, fatten it as directed by the Department of Boys Clubs, keep an accurate record of all work done, make reports on blanks provided each club member, and make an exhibit of his fat pig at such time and place as directed.

(b) Breeding Phase.—Each club member must secure a registered gilt or sow (any breed) and care for same as directed by the Boys Club Department, keep an accurate record of all work done and the increase from this animal, make reports on blanks furnished each club member and make an exhibit of animals as directed.

14. Calf Club—

(a) Fattening Phase.—Each club member must secure a steer calf, spayed or martin heifer, which will be less than two years of age January 1 of the year exhibit is to be made, fatten it as directed by the Department of Boys Clubs, keep an accurate record of all work done, make reports on blanks provided each club member and make an exhibit of his fat calf at such time and place as directed.

(b) Breeding Phase.—Each club member must secure a registered calf (any breed) and care for it as directed by the Boys Club Department, keep an accurate record of all work done, make reports on blanks furnished each club member and make an exhibit as directed.

15. Rules for the preparation of the exhibit for state contest will be published in the premium bulletin, which will be sent each member. The value of prizes for boys work in the state contest ranges from \$5,000.00 to \$10,000.00 annually.

16. Local rules governing county fairs and contests will be published in the county fair catalogs.

17. In calculating expense of production, a uniform scale of prices for rent, labor, loss of fertility, etc., will be followed. These prices are printed in the record blanks. In making a charge for fertilizer against your crop, you will enter it as a charge for plant food removed from the soil as follows:

Corn	10c per bushel
Grain Sorghums	10c per bushel
Seed cotton	30c per 100 lbs.
Peanuts	10c per bushel

18. Spelling, penmanship, punctuation and composition will not be considered in grading histories or other written work. Histories may be illustrated either by original drawings or by pictures of implements, crops, etc., neatly cut from implement and seed catalogs and pasted on.

19. Final scores for all club members will be judged by the following score cards (annual scholarships and special prizes offered for final scores):

(a) Score card for Corn Club—

Yield on 1 acre	30 points
Profit on one acre	30 points
Exhibit of 10 ears from one acre	20 points
Required reports	20 points
(Completeness, accuracy and promptness considered)	

(b) Score Card for Kafir, Milo and Feterita Club—

Yield on one acre	30 points
Profit on one acre	30 points
Exhibit of ten heads from one acre	20 points
Reports required	20 points
(Completeness, accuracy and promptness considered)	

(c) Score Card for Cotton Contest—

Yield on one acre	30 points
Profit on one acre	30 points
Reports of crop	20 points
Exhibit of 30 open bolls	20 points
(For judging exhibit, open bolls will count 6 2-3 points; grade of lint, 6 2-3 points, and linting percentage, 6 2-3 points.)	

(d) Score Card for Peanuts—

Yield on one acre	30 points
Profit on one acre	30 points
Exhibit of one-half peck of nuts	20 points
Reports required	20 points
(Completeness, accuracy and promptness considered.)	

(e) Score Card for Crop Rotation Clubs—

Yield of three acres	30 points
Profits on three acres	30 points
Gain in yield over similar crops in preceding year	20 points
Reports required	20 points

(f) Score Card for Poultry—

First Year	
Total number of purebred birds at weaning	40 points
Exhibit	25 points
Reports and composition	35 points
Second, Third and Fourth Years	
Size of flock cared for by club member	15 points
Net profits from mature flock	30 points
Number purebred birds at weaning	25 points
Exhibit	15 points
Reports and composition	15 points

(g) Score Card for Pig Club—

Class 1.—Fattening Phase—	
Best pig with respect to purpose for which it is to serve...	40 points
Greatest daily gains on the pig	15 points
Cheapest cost of production	25 points
Best kept records of feeding and care of pig	20 points
Class 2.—Breeding Phase—	
Success in raising pigs farrowed	40 points
Business showing	40 points
Best kept records of feeding and care of sow and litter ...	20 points

Class 3.—Best pig for slaughter purposes, either grade or purebred. Boars not eligible to compete in this class.

Class 4.—Best boar for breeding purposes (purebred only will be considered).

Class 5.—Best brood sow for producing pigs desirable for market purposes, taking into consideration her conformation and the number and vitality of pigs farrowed.

(h) Score Card for Calf Club—

Best calf	50 points
Greatest daily gains	15 points
Cheapest cost of production	20 points
Best kept record of the feeding and care	15 points

20. At the county fair or contest the ten best exhibits in corn, grain sorghums, cotton, peanuts and the five best exhibits of poultry should be selected to send to the State Fair. The club members whose exhibits are selected to send to the State Fair will constitute the county teams. Prizes are offered at the State Fair to county teams in each club above mentioned. The requirements are as follows:

(a) Corn Club.—Each member of team shall exhibit 10 ears of corn.

(b) Grain Sorghum Club.—Each member of team shall exhibit 10 heads of kafir, milo or feterita.

(c) Cotton Club.—Each member of team shall exhibit 30 open bolls.

(d) Peanut Club.—Each member of team shall exhibit $\frac{1}{2}$ peck of peanuts.

(e) Poultry Club (boys and girls).—Each member of team shall exhibit a trio of birds consisting of one cockerel and two pullets.

21. The first and second prize winners in the breeding phase of

Pig Club work at the county fair or contest in each of the following classes will be permitted to enter his pig at the State Fair:

- Senior Boar Pig
- Junior Boar Pig
- Senior Sow Pig
- Junior Sow Pig

22. Club members in Fattening Phase will be permitted to exhibit their pigs at the Fat Stock Show in the following classes:

- Pig 5 to 7 months
- Pig 7 to 9 months
- Pig 9 to 11 months

23. Club members in Breeding Phase of the Calf Club will be permitted to exhibit their calves at the State Fair in the following classes:

Bull, junior yearling, calved between January 1, 1916, and September 1, 1916.

Bull, senior calf, calved between September 1, 1916, and January 1, 1917.

Heifer, junior yearling, calved between January 1, 1916, and September 1, 1916.

Heifer, senior calf, calved between September 1, 1916, and January 1, 1917.

24. Club members in Fattening Phase will be permitted to enter their calves at the Fat Stock Show in the following classes:

Steer, spayed or martin heifer, calved between January 1, 1915, and January 1, 1916.

Steer, spayed or martin heifer, calved after January 1, 1916.



County Club Rally, Durant, Bryan County, Oklahoma

STORY OF THE DEMONSTRATION CLUB EMBLEM

Parts of the Emblem

Book, four-leaf clover, pig, kernel of corn or boll of cotton, and the four or five "H's". In addition to this, at the top of the book the word "Demonstrator", and at the bottom, "Boys Corn Club", "Boys Pig Club", "Boys Cotton Club", "All-Star Corn Club", etc.

The regular emblem of the club work will also be the trademark for the "Members of the Demonstration Club Work", and will be found upon all labels used on seed corn and other products grown by regular members of the clubs.

Club Emblem

The boys demonstration work represents a "Four-Square" training of its members for the "Four-Square" needs of citizenship and home life.

The four "H's" represent the equal training of the head, heart, hands and health of every child.

These "H's" have a trinity training value:

Train Head to—

- (a) Think
- (b) Plan
- (c) Reason

Train Heart to—

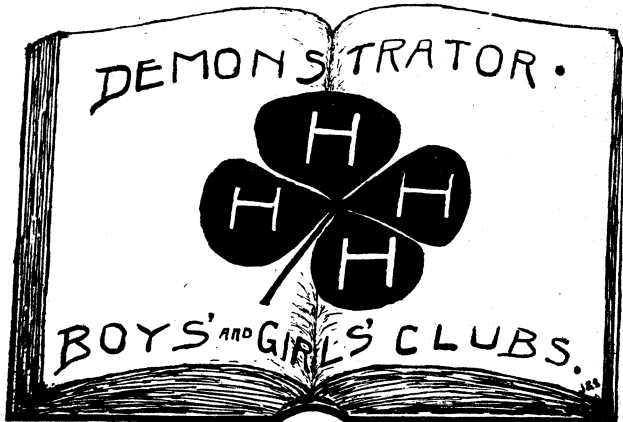
- (a) Be Kind
- (b) Be True
- (c) Be Sympathetic

Train Hands to—

- (a) Be Useful
- (b) Be Helpful
- (c) Be Skillful

Train Health to—

- (a) Resist Disease
- (b) Enjoy Life
- (c) Make for Efficiency



Club Emblem

The five "H's" of the "All-Star Corn Club" pin signify the Head, Heart, Hands, Health and Home. For "All-Star Club" work we add the fifth "H", which represents the "Home" and its training of value is the real bulwark of our Nation, the club work strives to train for home life that represents (a) True Character, (b) Comfort, and (c) Contentment.

Book.—The book, as a background, signifies the need of education and definite knowledge on the farm and home interests in order to make for better rural life.

Four-Leaf Clover.—The four-leaf clover represents the principles of scientific farming—rotation of crops, soil building, larger production and greater profits on less acres for the common people.

Objective Interest.—The kernel of corn, boll of cotton, pig or egg signify the relation of the farm products and animals to a happy and contented citizenship.

"Demonstrator".—The word "Demonstrator" means that every club member is a demonstrator of the best known methods in modern agriculture, and that he has not only agreed to read the instructions furnished by the College of Agriculture and the United States Department of Agriculture, but have followed these instructions during a period of not less than one year on not less than one acre in the Corn, Grain Sorghum, Peanut, Cotton, Pig, Poultry or Baby Beef Club work.



Class of Club Members of Okmulgee County. These Young People Completed the First Year's Work of the Extension Course of Study Prescribed for 1916

CORRELATION OF CLUB WORK AND AGRICULTURE WITH GENERAL SCHOOL WORK

BY GEORGE WILSON

Chair of Agriculture for Schools, Oklahoma A. and M. College

The question of correlation of agriculture and club work with the other work in school is one of particular interest to all. Just to what extent that this should be done depends upon the ability of the teacher.

No change should be made until pupils, patrons and teachers are convinced that a change is necessary.

If they can be convinced that by correlation the pupil will be advanced materially, intellectually and morally, then it seems to me that a change could be easily made.

Is it not pedagogical to teach "by going from the known to the unknown?"

That is just what we are asking you to do when we ask you "to teach the pupils in terms of their lives instead of terms of another life; to teach in terms of their understanding instead of their misunderstanding; in terms of the practical instead of the impractical; in terms of the concrete instead of the abstract."

We mean correlation when we say, "Teach those things in schools that will cause the pupils, teachers and patrons to think, read, act and work together".

When we advise these things we have done no more than to deliver general platitudes.

The schools that are teaching these practical things in connection with the other work find that it pays.

Superintendent W. D. Jenkins of Comanche, Texas, finds after four years survey that the boys and girls who belong to the Agricultural Clubs made in their final examinations an average of 11% more than those who did not belong in all subjects except spelling and composition.

In spelling the club members made 16% better; in composition they bested the other pupils 23%.

Not one club member was ever expelled or suspended from school. At church they had a 5% greater attendance, and 7% at Sunday school. In improving sanitary conditions, in every instance the school that took a great interest in the club work, excelled. When the Social Center Movement was agitated, these schools took the lead.

At Morgantown, West Virginia, we find that our club members made an average of 15% more than those who were not members. In attention and interest, 12%. We also find that 23% of all eighth grade graduates attend high school.

Who can doubt that this work is beneficial to the pupils, materially, intellectually and morally? Then, why not take up the work in our schools?

Teach agriculture by correlation with arithmetic, geography, language, reading and spelling, drawing and history.

Space prevents us from outlining fully lessons in the different subjects showing how this curriculum may be brought about. This subject is fully discussed in Bulletin No. 132, entitled, "Correlation of Agriculture With the Public School Subjects in the Southern States", by C. H. Lane, and published by the United States Department of Agriculture. This bulletin costs 10 cents per copy. It contains a full course of study by months, correlating these subjects. It is worth many times its small cost.

Farm Arithmetic

To give an idea of how agriculture may be correlated with arithmetic, the following examples are given:

1. It costs 25 cents a ton per mile to haul freight over ordinary, ungraded unkept roads. It costs 7 cents a ton per mile to haul freight over well graded, well kept roads. What is the farmer's poor road tax per ton per mile?

2. John Doe lives $17\frac{1}{2}$ miles from town. He raises 107,500 pounds of freight to be delivered to town, and hauls from town 21,500 pounds. What is his poor road tax?

3. In a municipal township there live 212 farmers. Each one raises on an average 87,500 pounds of freight to be hauled to town, and delivers from town 14,500 pounds. What is the poor road tax of that township if the average distance is $15\frac{1}{2}$ miles?

(The question of "stocks and bonds" comes in here for consideration in a practical way. We should teach "stocks and bonds" in the grades only as they can be taught by using local conditions. For illustration: School district bonds, municipal bonds, bonds such as issued by local cooperative organizations. Teach "stocks and bonds" as they apply to the same practical things.)

4. In Problem 3, how much of a bond could the township vote upon which they would pay 6% interest and a sinking fund sufficient to pay this off in 20 years and still not pay as much tax per year as they are now paying in the form of a poor road tax?

(Teacher, is it not fair to ask, "Had we begun to teach this kind of problems fifteen to twenty-five years ago, would we not today have good roads?")

5. A farmer has 100 common hens. It costs him 70 eggs per hen at $16\frac{2}{3}$ cents per dozen, to keep them. He finds at the end of the year that each hen layed only 60 eggs. How much does he owe for their keep more than he received for the eggs at $16\frac{2}{3}$ cents per dozen?

Does it pay to keep such hens?

6. This man's neighbor has 100 purebred hens. It costs him 90 eggs at 21½ cents per dozen to keep each one of these hens. He finds at the end of the year that each of these hens layed 150 eggs. How much is he ahead if, because of proper care, he sells these eggs at 21½ cents per dozen?

(Don't forget to emphasize the fact that in Problem 6 it cost more to keep the hens and yet, because of that cost and care, he was ahead.)

7. How much is the man in Problem 6 ahead of the one in Problem 5?

8. A farmer has 10 cows. It costs him 150 pounds of butterfat at 26.5 cents per pound to keep each one of these cows. He finds at the end of the year that each cow gave $1\frac{3}{4}$ gallons of milk per day for 280 days. Each gallon weighs 8.6 pounds, and each pound tests 3.5% butterfat. How much does he lose during the year?

9. The neighbor of the man in Problem 8 has 10 high grade Holstein cows. It cost him 165 pounds of butterfat at 29 1-5 cents per pound to keep these cows. He finds at the end of the year that each cow gave $2\frac{3}{4}$ gallons of milk per day for 300 days in the year; that each gallon weighs 8.6 pounds, and that each pound tests 4 1-5% butterfat. How much is his clear profit?

10. In 1915, Orion Stuteville of Alfalfa, Caddo county, Oklahoma, made 111 1-7 bushels of corn per acre at a cost of 13.3 cents per bushel. What is his profit per acre if he sold his corn at $49\frac{1}{2}$ cents per bushel?

11. The average yield per acre for the 3,000 Corn Club members was 47.3 bushels at an average cost of 27 cents. What is their total profit if the corn sold at $49\frac{1}{2}$ cents?

12. In 1915 there were about 4,000,000 acres of corn, yielding 102,000,000 bushels. How much per acre is this?

13. At the average yield of 47.3 bushels per acre, how many acres are necessary to produce the 102,000,000 bushels?

(Teacher, here is a fine place to have the pupils study the bulletins in diversification, showing that by careful cultivation and diversification as much can be raised upon less ground. Have the pupils study their bulletins and compare the lessons found in them to the conditions found in your district; always comparing with some of the best conditions as well as the worst.)



District No. 3, Latimer County, Oklahoma
Local Club Contest, 1916. Bowers School,



Demonstration of Agricultural Experiments
for District Schools, by District Agent John
White, Latimer County

HOME CREDIT FOR CLUB WORK

In order to create a greater interest in practical work in our rural schools and offer an opportunity for personal investigation in schools where laboratories, kitchens, fields, etc., are not available, we recommend that our rural teachers give credit for home work done by their pupils in agriculture and domestic science, as follows:

1. One percent additional to be added to the monthly grade in agriculture for each hour spent in home labor by a boy in carrying on the work of any of the demonstration clubs to which he belongs, provided that more than not 5% be added in any one month.

2. One percent additional to be added to the monthly grade in domestic science for each hour spent in home labor by a girl in carrying on the work of any of the demonstration clubs to which she belongs, provided that not more than 5% be added in any one month.

3. In order to receive home credit for work done, club members should be required to present their daily record books to their teachers for inspection once each month.

(On an average, the number of hours required in any one month to carry on the work of one club should not exceed five.)

CLUB MEMBERS EXCUSED FROM EXAMINATIONS

Boys who have satisfactorily carried on the work of at least one demonstration club for a period of one year, in addition to doing satisfactory work in the regular class in agriculture, as now required by law, will be excused from the State eighth grade examination in this subject, and girls who have satisfactorily carried on the work in at least one club for a period of one year, in addition to doing satisfactory classroom work in domestic science, as now required by law, will be excused from the State examination in this subject, as follows:

1. The agents in charge of club work at the A. and M. College must report to the county superintendent of each county before the date of the first eighth grade examination each year the names and grades of all club members in their respective counties who have made a general average of at least 85% in one or more clubs during the preceding year.

2. The Club Department of the A. and M. College will issue a certificate to each club member having done satisfactory work which certificate will be signed by the officials in charge of the clubs and the State Superintendent, and will have a space for the signature of the teacher under whose instruction satisfactory classroom work in agriculture or domestic science must have been completed.

3. Upon presentation of the above certificate, properly signed by the club member on the date of the eighth grade examination, the grade recorded thereon will be recorded by the examining committee in lieu of the regular examination.

EXTENSION COURSE OF STUDY FOR CLUB MEMBERS

The A. and M. College is offering a home course of study for club members in Agronomy, Animal Husbandry and Gardening. The final grades in these subjects will be recognized in the Secondary School of the A. and M. College, and the Agricultural Course for Extension Specialists and the students will be given advanced credit for the work which they have done. Each year the club members who satisfactorily complete the work outlined will receive a certificate of promotion to the next year of the course. Upon the completion of the work as outlined, they will receive a diploma, signed by the College officials. This diploma will be suitable for framing and will show that the club member has proven himself proficient in club work, and has done accredited work in the A. and M. College.

According to the standards used in high schools for counting credit (i. e., 5 hours per week for nine months being equivalent to 1 unit of credit).

The courses in

Soils and Crops is equivalent to 1 credit

Animal Husbandry is equivalent to $\frac{1}{2}$ credit

Home Gardening is equivalent to $\frac{1}{2}$ credit.

The following outline shows the work to be accomplished:

Soils and Crops**First Year—**

1. Club members must complete work of at least one Grain, Cotton or Peanut Demonstration Club.

2. They must read 130 pages of Hunt and Burkett's text on "Soils and Crops".

3. They must read Farmers Bulletins Nos. 187, 138 and 534.

4. They must attend some short course of school for club members in order to get as much practical work as possible.

5. They must take a final examination in the reading done at such time and place as may be designated by the Department of Agronomy of the A. and M. College.

Second Year—

1. Club members must complete work of at least one Grain, Cotton or Peanut Demonstration Club.

2. They must read from page 130 to page 276 of Hunt and Burkett's text on "Soils and Crops".

3. They must read Farmers Bulletins Nos. 157, 303, 686 and 400, also Oklahoma Experimental Bulletin No. 9.

4. They must attend some short course or school for club members in order to get as much practical work as possible.

5. They must take a final examination in the reading done at such time and place as may be designated by the Department of Agronomy of the A. and M. College.

Third year—

1. Club members must complete work of at least one Grain, Cotton or Peanut Demonstration Club.

2. They must read from page 277 to page 408 of Hunt and Burkett's text on "Soils and Crops".

3. They must read Farmers Bulletins Nos. 518, 680, 677, 485, and Oklahoma Experiment Station Bulletin No. 102.

4. They must attend some short course or school for club members in order to get as much practical work as possible.

5. They must take a final examination in the reading done at such time and place as may be designated by the Department of Agronomy of the A. and M. College.

Fourth Year—

1. Club members must complete work of at least one Grain, Cotton or Peanut Demonstration Club.

2. They must complete Hunt and Burkett's text on "Soils and Crops".

3. They must read Farmers Bulletins Nos. 690, 372, 431, 164, 601, 693 and 288.

4. They must attend some short course or school for club members in order to get as much practical work as possible.

5. They must take a final examination in the reading done at such time and place as may be designated by the Department of Agronomy of the A. and M. College.

Animal Husbandry

First Year—

1. Club members must complete work of the Pig, Calf or Poultry Clubs.

2. They must read 196 pages of Plum's text on "Beginnings in Animal Husbandry".

3. They must read two bulletins and the monthly instruction cards sent out by the Club Department.

4. They must attend some short course or school for club members in order to get as much practical work as possible.

5. They must take a final examination in the reading done at such time and place as may be designated by the Animal Husbandry Department of the A. and M. College.

Second Year—

1. Club members must complete work of Pig, Calf or Poultry Clubs.

2. They must complete Plum's text on "Beginnings in Animal Husbandry".

3. They must read two bulletins and the monthly instruction cards sent out by the Club Department.

4. They must attend some short course or school for club members in order to get as much practical work as possible.

5. They must take a final examination in the reading done at such time and place as may be designated by the Animal Husbandry Department of the A. and M. College.

Vegetable Gardening

For outline of this course, confer with the Girls Club Department, Stillwater, Oklahoma.

INSTRUCTIONS FOR CLUB MEMBERS

FIELD CROPS

LESSON I

SELECTING AND MEASURING AN ACRE

The first duty of the club member after he enrolls in any one of the Grain, Cotton or Peanut Clubs is to select and measure his acre of ground. Ideal soil for these crops is well drained, deep, loose loam with a porous, clay subsoil, well supplied with decayed organic matter to hold moisture and possible plant food. Of course it is likely you will not be able to find this ideal soil; in fact, such soil is seldom found. In order to have your crop do the best, however, it is necessary to choose soil as nearly like this ideal as possible.

After selecting your demonstration plat of ground, the next thing to do is to stake off just one acre. An acre of ground contains 43,560 square feet. Decide where you want one of the corners of your field and then drive a stake at that point. From this stake measure down one side of the field as far as you want the field to be in length and drive a stake at this second corner. You now have a stake at each end of one side of your field. You should next divide 43,560 by the number representing the length of your field in feet, the answer you obtain being the width your field should be. Measure this width at each end of your field and drive stakes for these two corners. The following example will help you in finding how wide your field should be:

Example: A corn plat is 363 feet long. How wide should it be? Answer: 120 feet.



Elston Coleman of Newkirk, Kay County, and His Box Tester. Champion Corn Club Member for Oklahoma, 1915. He Grew 110 Bushels of Corn on One Acre and Won \$200.00 Worth of Prizes

Solution: Since there are 43,450 square feet in an acre, and one side of this field is 363 feet long—

$$43,560 \div 363 = 120$$

which is the number of feet in width the field should be.

LESSON II

Fertilization

Plants require food the same as animals. The plant's food comes from the air and from the soil. The part that comes from the soil must be dissolved in water before the plant is able to draw it up in its body through its hair roots. You will readily see how important it is for the growing plant to have plenty of rain, for without moisture its food cannot be used.

Even if there is plenty of moisture in the soil, there may not be a sufficient amount of plant food to be dissolved. In this case the plant will die of starvation, just as a person would die if they could not get food. In case the farmer keeps growing the same kind of plants on the same ground every year, and does not put food back into the soil, in time it will be worn out and the crops will be weak and small. Many farmers in Oklahoma are wearing out their soil in this way at the present time. We do not want our club members to make the same mistake.

Anything which adds plant food to the soil is called a fertilizer. There are three kinds of fertilizer available. They are as follows:

1. Animal (barnyard manure, packinghouse by-products, etc.)
2. Vegetable (green manure, leaf mold, cottonseed meal, etc.)
3. Mineral (nitrate of soda, acid phosphate or raw phosphate rock, kainit or muriate of potash, lime, etc.)

The animal fertilizer or barnyard manure is the surest fertilizer for producing a large crop in Oklahoma. The amount of manure applied to the soil depends upon the amount of rainfall and the decomposition of the manure. Where the rainfall is light, as in the western part of the State, and manure containing stalks or undecomposed straw is used, the yields are often reduced by admitting too much air into the soil and thus assisting the escape of the soil moisture.

In the eastern part of the State, where the rainfall is heavier, ten or twenty tons of well rotted manure may be used to advantage. Where heavier applications are made the manure should be well decomposed, moist and mixed well with the soil. This should be done usually several months before the crop is planted. Before the ground is plowed is a good time. Where the ground is plowed late on account of sandy conditions, or, in the parts of the State where rainfall is light, manure may be used as a top dressing after the crop is planted. For definite information for your particular locality, consult with the county demonstration agent.

Green manure crops, such as cowpeas, or small grains and late sorghums, planted to be plowed under in the fall, are greatly needed in Oklahoma in the sections where the rainfall is sufficient to decompose them before spring. These crops build up the humus supply and organic matter which has been exhausted by cultivated crops.

One should not attempt to use mineral fertilizers without knowing which is lacking in the soil. Even a chemical test might not show this, but the condition of the growing crop indicates a great deal. Lack of available nitrates generally shows a weak, puny plant during early stages of growth. Lack of available phosphates and potash are seen in the later stage of growth when fruit or grain fails to fill well.

LESSON III

PREPARATION OF THE SEEDBED

Next to fertilization in importance stands proper tillage. The tillage which we will discuss in this lesson is the preparation of the soil before planting, and we will call it the preparation of the seedbed.

The land is plowed in order to loosen it and enable water to enter in greater quantity, be absorbed to a greater depth, and remain longer in the soil. This also increases the amount of available plant food in the soil.

A deep seedbed, well supplied with moisture and well drained, makes big yields possible whether the summer proves "too dry" or "too wet". It is not advisable to increase the depth of plowing too much in one year, an increase of one inch a year until satisfactory depth is reached is desirable. If not plowed well, some Oklahoma lands are so composed that they remain dry below a depth of five or ten inches even during several weeks of extremely wet weather.

In many localities it is best to plow in the fall, or several months before planting, in order to enable the soil to store a sufficient amount of water to produce a crop. Fall-prepared ground should be disked and harrowed at least once before planting. Land should never be plowed when too wet to pulverize finely. In the fall, plowing may be done even when the ground is too dry as the winter rains and freezes will pulverize the clods.

Spring-plowed land should be harrowed the same day it is plowed. If the ground is plowed late, a disk, set nearly straight, should be run over the ground each way to pack the subsoil.

Disking ground in the spring or fall before plowing is a great advantage. It retains moisture and keeps the land longer in a good plowing condition. It also pulverizes the surface portion of the furrow slice before it is turned under out of reach of the harrow.

Sandy soils that are liable to blow should never be plowed till late in the spring after the danger of high winds is past. Listing and planting in the furrows at the same time is the proper method for most row crops on such soils. The sled-disk cultivator or tools that will leave the protecting ridges as long as possible should be used on soils liable to blow.

Some plants have root systems penetrating to a great depth. For instance, corn roots grow in abundance to a depth of three or four feet when the soil is sufficiently loose. As the club crop is limited to 43,560 square feet of surface, it should be enabled to use the acre to a great depth. It is easily understood that ground plowed to a depth of ten inches and cultivated to a depth of three inches will have twice as much loose, unmolested surface for root growth than if the ground was plowed only six and one-half inches.

To farm to the best advantage the farmer must have good tools and use them correctly. There are good disk plows, good walking moldboard plows and good sulky moldboard plows. Poor plowing may be done with a good plow, but good plowing cannot be done with a poor plow. The club member should use a large plow and have plenty of power.

Other tools which should be had for farming the crop are: A disk harrow, a section harrow, a combination planter, and suitable cultivators.

LESSON IV

PREPARING SEED FOR PLANTING

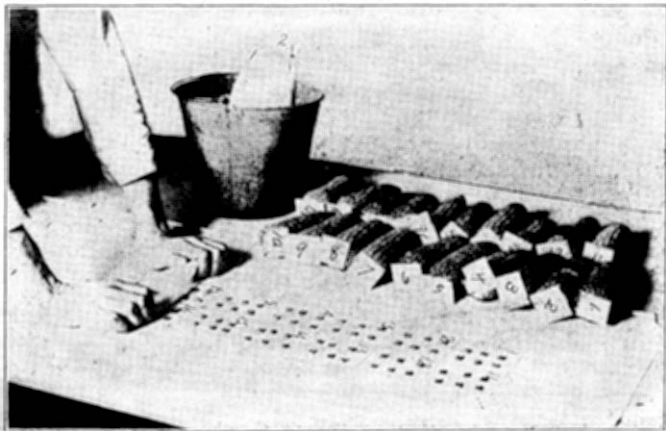
The seed for planting should have been field-selected the previous fall. Only the best seed obtainable should be used, as "Like Things Always Produce Like". Seed which has been grown under the same soil and climatic conditions is usually desirable.

Such work as sorting, testing, germinating, cleaning, shelling, or threshing, should be done in the early spring before the spring work begins.

The best time to grade seed corn is before shelling. Only heavy, solid ears should be used for seed, and these should contain kernels of good, uniform size and shape. Before shelling, all small and poorly developed kernels should be removed as these will produce weak or barren stalks. The large, irregular kernels from the ends of the ear should also be discarded as they will not pass through the planter plates uniformly. Corn for seed should be shelled by hand in a coarse meshed sieve. This enable the kernels and cob from each ear to be closely inspected and all kernels to be easily rejected. The sieve separates the chaff and small grains from the seed.

Seed selection is as important in maintaining maximum yields of kafir, milo and feterita as with other crops. Seed which has deteriorated from crossing or from natural causes, due to the failure of selection, brings a low yield as compared with seed which has been well selected and kept pure.

The heads for seed purposes should have been carefully field-selected as provided elsewhere in this bulletin. These heads should then be carefully graded as provided by the score card. When heads are found meeting the requirements of the card, heavy and free from signs of disease or insect damage, carefully thresh them and test before planting.



A Rag Doll Tester Is Simple and Inexpensive
From Educational Experiment Station, Madison, Wisconsin



The Box Test

Agronomy Department, A. and M. College

Seed for all other club crops should have been field-selected in the fall. It should be sound, clean and free from signs of insect or storm damage. The seeds should be of uniform size and true to type. They should also be of pure breeding. All over or under size should be rejected.

In case it is necessary to purchase seed, be sure that the purchase is made of some responsible dealer. The county agent will be able to give you advice as to reliable dealers.

Seed should be tested for germination before being planted. Poor stands may be attributed largely to the planting of seed of low vitality. This test should be made about four weeks before planting time in order to give sufficient time to select new seed if test proves unsatisfactory.

It is the general impression that there is no need of testing seed in the South. Experience has shown, however, that there are a great many ways in which the vitality of seed may be impaired, aside from heavy freezing. Perhaps there is as great loss from poor stands resulting from the use of inferior seed in the South as there is in the North.

A simple method of testing seed corn is to place the ears on a table, or convenient place, and remove a half dozen kernels from different parts of the ear. Be sure to number the ear, the removed kernels, and their place in the box so that they will correspond. Secure a box of sufficient size and depth, fill with several inches of moist, light soil, setting off the divisions distinctly. Place kernels from each ear in division marked with same number. Cover with soil or suitable cloth. Sufficient moisture must be supplied and the temperature kept regular at between 60° and 70°. At the end of the sixth or seventh day the sprouting should show which ears are to be planted.

Other forms of tests are the Rag Doll and Plate tests. The plate test will prove satisfactory for the grain sorghum crops (see page 78, B. S. & H. Agriculture). Only seed showing at least 95% vitality should be used.

Bulletins discussing this subject are Nos. 415, 428, 229, 253 United States Department of Agriculture, Washington, D. C.

LESSON V

PLANTING AND SPACING

As the amount of moisture in the soil is the controlling factor in crop production, great care should be taken to see that the number of plants grown upon the acre is such as to produce the highest results in the crib, or bale yields. Where the rainfall is light greater space between the rows and in the rows, within reasonable bounds, gives greater crop production. There will be found a certain amount of moisture in the soil under a certain number of square feet of surface. If this moisture is only sufficient to grow and mature the seed of one healthy plant, the same area cannot be expected to mature the seed of two, three or four plants. The plant must, therefore, be given such space between the rows and in the row as experience shows will lead to the highest production under average conditions. No set rule can be given. Generally speaking, the farmer is inclined to try to grow too many plants on an acre. For example, it has been found by many farmers, and club boys, that planting in alternate rows of cow-peas or peanuts did not reduce the yield of corn, kafir or milo on a given acre.

The quantity of seed used per acre depends upon the spacing of

the plants in the rows and the width of the rows. Only about one-half as much should be used in the extreme western part of the State as is used in the eastern part on account of difference in moisture.

Corn.—Where soil moisture is likely to be deficient during the silking or heading period, a stalk for each twenty inches of row (the rows being $3\frac{1}{2}$ feet apart) is sufficient and will make possible a yield of 113 bushels per acre if the stalks average a pound of grain each.

With an abundance of fertility and rainfall 12,000 or more stalks to the acre are necessary for obtaining record yields.

With an abundance of fertility and soil moisture throughout the silking period, a stalk for each twelve inches in row is advisable and will make possible a yield of 188 bushels per acre, the stalks averaging one pound of grain each.

Drilled corn, if kept equally well cultivated and free from weeds, will usually produce better than hill-planted corn. The stalks develop better and yield better when separated from each other by several inches than when crowded closely together in hills.

If the acre is planted in hills by hand, the kernels should be separated in each hill by several inches. This tends to increase the yield and makes it easier to thin without loosening or injuring the remaining stalks.

Corn should be planted as soon as the ground is sufficiently warm to result in early germination. Nothing is gained by putting seed into soil which is too cold or too wet to favor germination. It is better to defer the planting a week or ten days than to run the risk of losing it by decay or of having an imperfect stand by planting before the ground is sufficiently dry to work well and warm enough for immediate growth. Every missing plant means a decrease in the yield, and replanting the missing hills is seldom profitable.

Grain Sorghums.—The same general instructions as given for the planting and spacing of corn should be followed in the planting and spacing of grain sorghums. As the sorghums are really a "dry land crop" it is advisable to give them the spacing required in semi-arid regions, provided they are grown on the western side of the State.

Peanuts.—The time for planting peanuts is in the spring after the soil has become thoroughly warm. In order to secure a good stand, the seed should not be put in the ground until there is sufficient warmth to germinate it quickly. As a rule peanuts should be planted a trifle later than corn and beans. The Spanish variety may be planted somewhat later than the Virginia type, as it requires less time to complete its growth.

The Spanish variety is planted in rows from twenty-eight to thirty-six inches apart and nine to twelve inches apart in the rows, according to the fertility of the soil. On rich soils, where the spread of vine will be great, the maximum distance between rows as well as between plants in the row should be allowed.

The quantity of seed peanuts required to plant an acre will depend somewhat upon the distances of planting. One peck of shelled Spanish peanuts, or one and one-fourth bushels in the pods, are required for an acre. The greater the care exercised in planting, the smaller will be the waste of seed, and economy is quite an object when planting specially selected or high-priced seed. By planting the Spanish variety in the pod, two seeds will be placed together in a hill, but there can be no very great objection to this, as the two

plants will generally give a better yield than where the plants grow singly.

The depth to which the seed should be covered will depend somewhat upon the character of the soil. On heavy soils three-fourths inch to one and one-fourth inches will be sufficient, while on light sandy soils one and one-half to two inches may not be too deep. In general the seed should be on moist soil.

Cotton.—This crop should not be planted until the ground is warm down to moist soil, as cotton is a hot-weather crop, and cold, damp ground retards germination and growth. The seed should be planted very shallow, especially when planted early. It is deep enough when it reaches moist soil, no matter how shallow this may be.

In sections where the rainfall is ample, it is considered best to plant cotton on a level surface if the land is well drained. If not, or in sections of heavy rainfall, a furrow between the rows is important, the cotton being on the ridges.

Where the rainfall is light, as in the western part of the State, cotton should be planted in the bottom of shallow lister furrows. Where practical, these furrows should run east and west in order to protect the plants against the prevailing north and south winds.

To be sure of a stand under average farm conditions in Oklahoma, from three to five pecks of seed should be used per acre. Under ideal conditions a peck of seed per acre would be sufficient, but, as a rule, a perfect stand of cotton cannot be obtained with less than three pecks of seed. It is best to use at least a bushel of seed per acre to be sure of a stand and chop out later if desired.

LESSON VI CULTIVATION

To produce a large yield, plant roots require warmth, a certain amount of air, and considerable moisture.

The ground is cultivated in order to supply these requirements.

Too much water and too little air in the soil as surely prevents healthy growth as too much air and too little water.

Air is deficient in saturated soils, and on such soils plants become yellow and unproductive.

Good cultivation at the proper time admits air, lessens the ascent of water from the subsoil, causes the soil to become warmer, and stimulates bacterial action and a better growth.

Weeds should be killed as soon as they begin to grow, but the primary reason for cultivating is to maintain the proper proportion of air and moisture in the soil.

Results of our farm demonstration work during recent years show that 50% has been added to the yields in many cases because of good tillage alone.

It is a good plan to begin cultivation even before planting by using a harrow or surface cultivator of some kind to break the surface crust and destroy young weeds and grass. Some of the most effective cultivation is done with the section spike-tooth harrow, both before the stuff is up and as long afterwards as possible without destroying too many of the plants.

The first cultivation with a shovel cultivator should be deep and close to the plants if done in time; that is, while the plants are yet small. Care should be taken not to cut off the feeder roots. When corn, for example, is one and one-half feet tall its roots have met between the rows. In going down deep at first a place is prepared

for the roots to get down deep for moisture, and also a good, deep soil mulch is formed to hold the moisture during the latter half of the growing season. To be safe against this summer shortage of moisture, this mulch should be two and one-half inches deep on the each side of Oklahoma and three and one-half inches deep on the west side of the State. There should be sufficient depth of plowing done beforehand to leave room for the roots between the soil mulch and the bottom of the furrow. The roots of ordinary cultivated crops will not go below the bottom of the furrow where the ground gets somewhat hard and packed.

Late cultivations should be every week or ten days, and always after every rain, to restore the mulch and break up the crust that forms after every rain, especially on the harder lands. If this is not done in time, the loss of moisture in a day or two may be so great as to cut off a fourth or third of the possible yield. A one-horse harrow, five-shovel cultivator, mower wheel, or some such tool, should be used after the plants get too tall for two-horse cultivators.

It is never safe to allow the soil surface to become hard and too dry to cultivate to the best advantage. Continued dry weather with the soil in this condition is certain to reduce the yield materially, and cultivating such soil results in still greater injury.

Until the silking period the soil surface should be kept in a fine, loose condition, so that in walking on it when dry it is felt to give under the feet and distinct footprints are made.

Shallow cultivations given even as late as silking time are often as valuable as earlier cultivations.

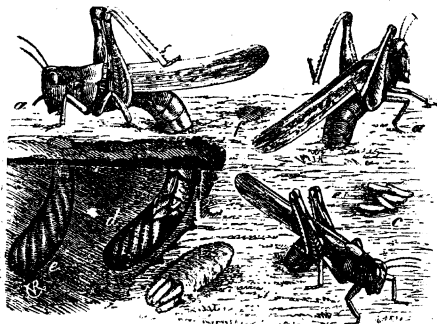
Crops should not be "laid by" too soon. No one knows how many times it is necessary to cultivate. It varies with the different kinds of soil, amount of rain and kind of crop.

LESSON VII

PLANT ENEMIES AND DISEASES

Crops are often damaged to a great extent and sometimes completely destroyed by insects and diseases. Some of the most common enemies to club crops are as follows:

The grasshopper is an insect found in practically all parts of the



Grasshopper Laying Eggs

From A. and M. Circular No. 41

State. It is an insect familiar to all members of the clubs. In some sections this insect does considerable damage to corn, grain sorghums, peanuts and cotton plants. Where it becomes necessary to fight the pest, the following formula, taken from Bulletin No. 41 of the College should be used:

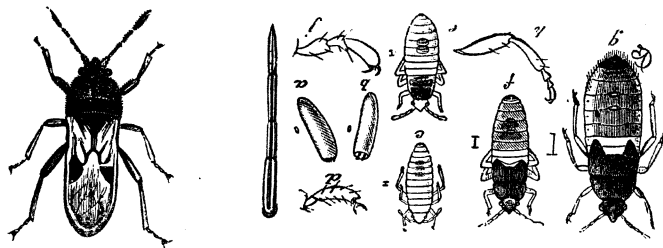
Poison Bran Mash

Bran	20	lbs.
Paris green	1	lb.
Cheap sirup	2	qts.
Water	3½	gals.
Oranges or lemons (poor quality)	3	

Mix the bran and paris green dry. Pour the sirup into the water, squeeze into this the juice of the fruit, and add the pulp and rind chopped fine. Add this mixture to the poisoned bran and stir thoroughly. The use of the fruit is essential.

This makes sufficient material for from two to five acres. Broadcast it early in the morning before sunrise. The grasshoppers and cutworms prefer it when moist before the sun has dried it out. If applied in this way there is little or no danger to fowls.

The **Chinchbug** is a small, black and white colored insect, about one-eighth of an inch long. In many cases these insects are found in great numbers in the small grain fields, and after these grains are



Adult Chinchbug

Stages of Development.—*a, b*, Eggs, enlarged; *c*, Eggs just Hatched into Young Chinchbugs; *e, f*, First and Second Stages of Development; *g*, Pupal Form; *i*, the Sucking Mouthpiece, Enlarged
From Circular No. 41, by C. E. Sanborn, A. and M. College

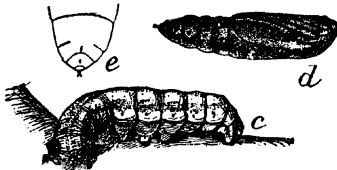
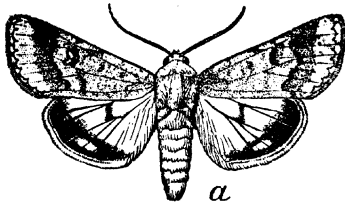
harvested they often attack the corn fields. They feed on the plant juices in the green stalks and in time cause the plant to die for lack of nourishment.

If it is found that chinchbugs will attack a corn field, a deep furrow should be plowed around it. A log or piece of timber drawn along the bottom of this furrow will make the soil loose. The loose dust will prevent the insects from getting out of the furrow after they fall in and so prevent them from entering the field.

A little crude oil in the bottom of the furrow will also assist in preventing them from reaching the field.

Chinchbugs live through the winter in the crowns or near the surface of the soil in bunchgrass in the fields and along fences. By destroying all these winter homes by plowing the grass and weeds under, or by burning what cannot be plowed, will assist in lessening the number.

The Ear Worm is of a light green to dark brown color, about



Corn Ear Worm.—*a*, Moth; *b*, Lateral View of Worm Feeding; *c*, Worm Entering the Ground to Pupate; *d*, Pupa. (From U. S. Bureau of Entomology)

one-half inch long. This worm feeds upon the leaves and especially upon the green silks and tips of the ears of corn. This injures the ears and the rains cause them to rot, and so much damage is done to the crop. This worm lives in the ground through the winter, and if the land is plowed in the fall their homes are destroyed.

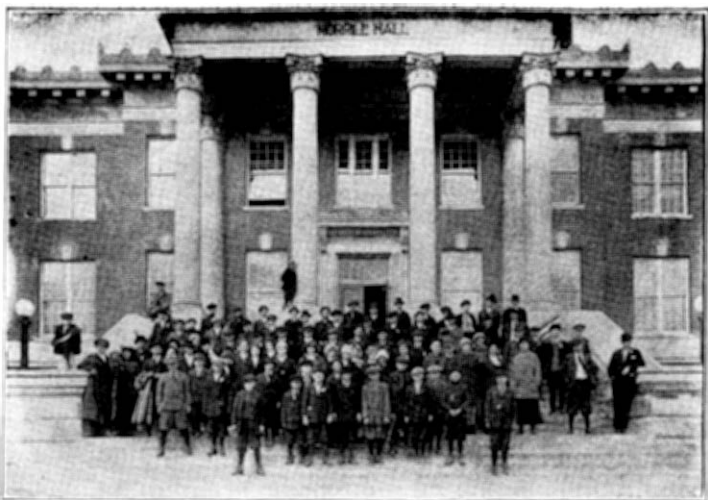
The most common disease of corn is **Smut**. This black mass attacks the ears, tassels, stalks and leaves. It grows from a little piece which lives over winter in the soil. To get rid of this disease, cut off the black masses from the green corn and burn them. If the farmers of the whole community will do this there will be no trouble with smut the second year. Another way to lessen danger with smut is to rotate crops.

Grain Sorghums.—These crops are troubled with **Chinchbugs** and **Smut**. The smut grows on the head or on the kernels. The treatment in both cases is the same as for the corn.

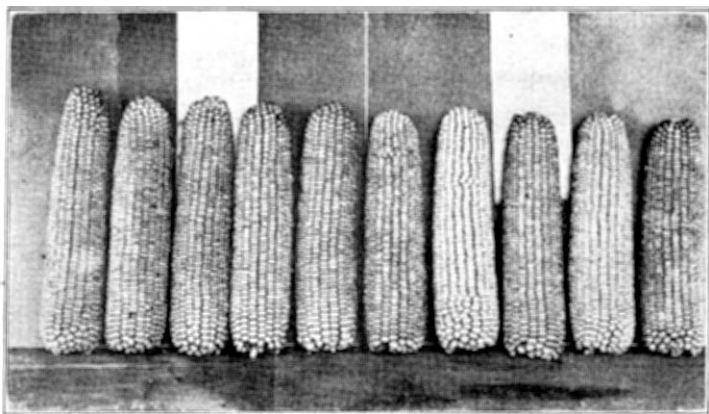
Cotton.—The **Weevil** is a dark brown or black insect, about three-eighths inch long, which feeds on the squares and bolls of the cotton plants. It lays its eggs in the squares and bolls, and these hatch into worms which eat the inner part of the bolls and destroy the cotton plants. The older weevil lives through the winter in bunches of grass, weeds and cotton plants which are left in the field. Destroy these winter homes by clean cultivation or burning all trash. Rotation of crops will also prevent them from finding the cotton plant.

The **Cotton Boll Worm** is green with dark stripes on its neck. It is about one-half inch long. Its feed is the squares and bolls of cotton, green corn silks and young corn grains. Corn planted around the cotton field will protect the cotton during the silking period of the corn. Fall plowing helps to destroy the winter homes of the worms. Spraying is also very successfully practiced.

Boll Rot is a disease that appears as a grayish or pinkish spot on the young boll, causing the boll to rot. It spreads rapidly during the wet season as it does not like sunshine. Thin planting helps to check the disease as it lets in the sunshine. Some varieties of cotton are not affected as much with boll rot as others. It is always advisable to select seed from plants that are not affected by this disease.



Scholarship Winners Attending the Farmers Winter Short Course, A. and M. College, Stillwater, Oklahoma, 1916



Sweepstakes Exhibit of Corn at Oklahoma State Fair, 1915. Grown by Dennis Clay, a Club Member, of Coweta, Wagoner County. Variety, Reid's Yellow Dent. Yield, 86 Bushels per Acre

Wilt is a disease of cotton that lives in the soil and enters the cotton through the roots. This disease stops the flow of sap from the roots to the stems, and the leaves and the plant wilts and later die. The best method of treatment is to burn diseased plants and to rotate the crops.

Peanuts.—Peanuts have been remarkably free from insect pests or diseases. In Oklahoma practically no trouble of this kind has been observed. In case of any indication of such trouble, read page 37, Farmers Bulletin No. 431, United States Department of Agriculture, Washington, D. C.

LESSON VIII

FIELD SELECTION OF SEED

Corn

(Bulletin No. 537, U. S. Department of Agriculture)

It is reasonable to assume that a variety that makes the best yields in a county is adapted to the locality. This is especially true if the same variety produces best for several years.

It is also fair to assume that seed from a high-yielding acre, if well cared for during the winter, will, under similar conditions give equally good yields on many other acres in the neighborhood, and that with better care even greater yields may be obtained.

All good seed ears should be gathered as soon as ripe and before any freezing has occurred.

Go through the acre with a picking bag on the shoulder and gather the ears from the best stalks. By walking between two corn rows the good, high-yielding plants in the two rows can be readily found.

The kind of plant from which seed should be taken is one that produces much better without any apparent reason than plants surrounding it. Plants with an unusual amount of space or an unusually fertile location may produce better than surrounding plants without possessing any greater inherent producing power, and therefore would be of no special value as plants from which to select seed.

Suckers are undesirable and can be gradually eliminated by taking seed only from stalks that produce no suckers.

The seed acre of one year must not supply the entire quantity of seed for the seed acre the next year. A continuation of such a practice would tend to reduce the productivity of the variety because of close breeding.

To avoid close breeding, some ears from unusually good plants from other fields of the same variety should be planted each year in the seed acre.

Grain Sorghum

(Federal Bulletin, "Field Instruction for Farmers Cooperative Demonstration Work in Western Texas and Oklahoma. U. S. Department of Agriculture.)

The selection of seed should be done in the field after the crop has matured. In the case of kafir, examine the stalks in the field. Select heads only from stalks of medium height, thick and short-jointed, rather than tall, long-jointed stalks. Examine the head itself next and select only those heads in which the main or center stem extends up into the head to within at least three inches of the tip.

This stem should be short-jointed. If the center stem is long-jointed, that is, does not contain a relatively large number of joints, do not select that head. The large number of joints is necessary because the short stems that bear the seed grow in a circle from the main stem at these joints. If the center stem is long-jointed or contains few joints, the seed bearing stems will not be so numerous and will be found longer, giving the head a loose and "springly" appearance. Such a head will be found to be lighter than a close-grown, short-jointed, heavy-fruited head.

Then examine the seed-bearing stems themselves, which grow from the joints. They should be short, close together, and the seed should begin near the main stem. Where they are long and the seed begins quite a distance up from the main stem it will be found that the seed is developed on the outside of the stem better than on the inside. On account of the length and the way the seed grows on such a stem it has a tendency to bend outward, which gives the head its loose appearance. Do not select such heads. Good heads should have the seed developed on the inside as well as on the outside of the seed-bearing stem. The seed should be well formed and thickly set. Examine the butt and note whether it has grown entirely out of the boot, or upper leaf. The best yielding, heaviest heads will be found to grow in this manner. A poorer yield will be obtained from those which do not grow in this way. The seed stems growing at the butt should be well formed, quite close together, and should not grow straight up along the main stem, but should extend out at a slight angle. Then examine the head for its weight; discard the light heads; select for seed only those that appear heavy.

The general provisions regarding the selection of kafir apply to the selection of milo and feterita.

Cotton

(Circular No. 37, A. and M. College, Stillwater, Oklahoma.)

Before beginning to select cotton for seed, you should study the type of plant best adapted to your locality. Of course the type varies with the variety of cotton, and after you determine the variety you wish to plant, then you should determine the best type of plant in that variety. As a rule the type of plant best adapted to Oklahoma conditions is one that has the primary or vegetative limbs close to the ground. The vegetative branches should not be too long, and not over five in number. The vegetative limbs or branches can be distinguished from the fruiting branches as they do not bear any blossoms or bolls on the main stem, but have fruiting branches which grow from them which produce the fruit. The fruiting branches do not produce any other branches. The first fruiting branches should be low and continuous growing with several bolls on them. The joints on the main stem and vegetative branches should be close together; that is, the internodes should be short and the fruiting limbs should grow in successive joints. The bolls should be large, containing five locks, and should be storm-resistant and easily picked. There should be a large number of bolls on the stalk. The lint should be of good quality, uniform in length, and, for upland, short-staple cotton, the lint should be about 1 1-16 inches long. The linting percent should be from 38 to 40.

Peanuts

(Bulletin No. 431, U. S. Department of Agriculture.)

A good grade of seed is just as important with the peanut as with corn or any other crop. There is perhaps no other farm crop except corn that is so greatly influenced by the character of seed planted as the peanut. The very best peanuts of the previous year's crop should be selected for seed, and of these only the most mature and perfect peas should be used. Seed should be saved from well-ripened and mature plants and should be properly cured and kept dry during the winter months. Good seed produces a more even stand of plants, which in itself returns a greater yield.

The seed should not only be selected from plants that are mature, but from those producing a large number of mature pods as well. By doubling the number of well-filled pods on each plant the yield for each acre will also be doubled. Many millions of bushels have been added to the corn crop of the country simply through the selection and improvement of seed.

What has been done with corn is possible with the peanut, and where we now have an average yield of thirty-four bushels to the acre, it is reasonable to expect this to be increased to fifty or sixty bushels through seed and cultural improvements.

LESSON IX

HARVESTING AND CARE

Corn

Unless it is desired to bind and shock the corn stalks, in order to save them for forage, the quickest and cheapest way to gather the crop is to husk it in the field. This should be done as soon as it is entirely dry in order to avoid danger from storms, stock, insects, etc., and stored in a crib.

If corn is stored only a short time, the ordinary open crib is all that is necessary, but if it is to be kept until spring before using, the sides and bottom of the crib should be tight, so that the corn can be treated with bisulphid of carbon to kill moths and weevils. If thoroughly dry when brought from the field it may be stored in such a bin with no danger of heating or molding, and if treated at once by pouring bisulphid over the top of the corn, using one pound of the liquid for each 100 bushels of grain, it will be secure from insect depredations for several months. (Caution: As carbon bisulphid is inflammable, keep all fire away.) If the corn is kept until late in the season it should be watched during the spring, and if either moths or weevils should be found it will not be safe to put it in a close crib which is not well ventilated, while if placed in an open crib it cannot be treated for killing insects. If no insects can be found in the corn when it is gathered, immediate treatment is not necessary, as there will be but little danger of loss in the grain which is used during the winter. If already infested, however, it should be treated at once.

Grain Sorghum crops are generally harvested in one of the following ways:

By cutting with a corn binder and shocking, by heading with an ordinary box header, several types of which are now manufactured, or by heading by hand.

When the entire stalk is to be cut, a sled cutter is sometimes used. The heads are often separated from the stalks after the crop

has been thoroughly cured in the shock. The stalk is often used for forage and the seed threshed or fed in the head. It is sometimes threshed from the shock by holding the heads at the mouth of the thresher. After the teeth have taken off the grain, the bundle is used for fodder. Where the heads have been separated they are run through the thresher in the ordinary way.

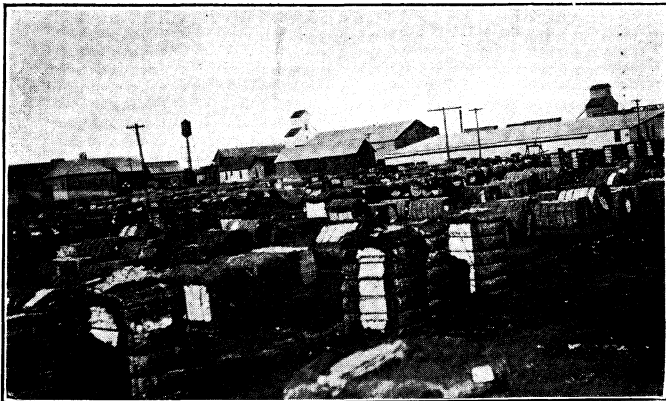
Kafir or milo in the head may be stored in any ordinary way so long as the piles and quantities in any bin or granary are not made too large. Where the grain is threshed it is likely to heat, especially in damp weather. This tendency is more pronounced in spring, about the sprouting season, than at any other time of the year.

Peanuts

(Bulletin No. 431, U. S. Department of Agriculture.)

No fixed rule can be given by which to determine when to remove the peanut crop from the ground, and each grower must be his own judge in the matter. In general practice the grower tries to dig before the first frosts, in order that the peanut vines may have greater value for stock feed. To the southward, where frosts do not appear until quite late, the vines assume a yellowish appearance during the latter part of the season, which indicates the ripening of the nuts. If digging is deferred too long the first formed nuts are likely to burst their shells and start growing; this is especially true if there is a period of rainy weather late in the season. The aim should be to dig at the time the vines have upon them the greatest number of mature nuts. Where a large acreage is grown it will be necessary to begin harvesting as soon as the earliest nuts are ready in order to complete the work before unfavorable weather sets in.

Under ordinary circumstances the peanut vines are plowed from the ground with a one-horse turning plow and afterward separated from the soil by hand. Many growers employ either a two-horse plow similar to that frequently used for digging potatoes, or a turning plow with the moldboard removed to prevent a furrow being turned.



Cotton Exposed to Weather Damage at the Gin (very undesirable)

Cotton

(Cotton Circular No. 32, A. and M. College, Stillwater, Oklahoma.)

The profits of a cotton crop may be greatly increased by greater care in picking. Picking should begin as soon as enough bolls are open, and kept up with as closely as possible. It is a bad practice to pile seed cotton on the ground in the field as the little amount of damaged cotton next to the ground is sure to lower the grade of the bale. An old wagon, or a cheap, portable bin of some kind, should be kept in the field in which to store seed cotton between ginnings. It will pay well to pick the cotton clean, taking special care to get as few leaves and sticks as possible.

LESSON X**DISPOSING OF THE CROPS**

Since the crop has been grown and gathered, the question confronting the club member is: "What to do with it?" When possible, the grain and peanut crops should be fed to livestock and all waste products returned to the soil. It is a known fact that when a crop is sold off the ground, 100%, or all of the plant food required to grow the part sold, is removed from the land. If the crop is fed to livestock and the manure returned to the soil, 80% to 85% of the plant food required to grow the crop is returned again to the land. In addition to this saving to the soil, the club member, by scientific feeding, will make an additional profit on his stock. We strongly urge all grain club members to join the Pig, Calf or Poultry Clubs and feed the grain which they produce.

Cotton, of course, must be marketed from the farm, but it should not be necessary to sell it as soon as it is picked and ginned if the young farmer has managed his work properly. It should be baled and stored in a dry place on the farm or in a warehouse, then the club member can arrange to dispose of it when the price is satisfactory. In case the crop is kept for some time, it will be advisable to insure it against possible loss by fire or storm.

When the crop is sold off the place it should be graded properly, clean, and in a marketable condition. Crops that are clean, sound and carefully graded so that there is a noticeable uniformity of size, color, etc., always sell more readily than those not so graded. Crops should also meet the standard requirements for those crops in truthness to type, weight, size, uniformity, etc.

The reputation of the farmer has a marked influence on the price of the product, especially if the farmer is selling seed or stock for breeding purposes. The club member should be as careful of the product he is selling, to see that it meets all the requirements for which it is needed, as he would if he were buying the product for himself. If he does this, in a few years' time he will become known as a dependable producer and will receive much above the market price from the exacting buyer because it will be known that the product will be all that is claimed for it. The club member cannot be too careful of his reputation.

LESSON XI

BUSINESS SHOWING

It is just as necessary for the farmer to keep a record of his expenses and income as it is for the merchant in town. If he does not do so, he will not know whether a certain crop has been grown at a profit or loss. It is not enough for the club member to produce a good yield and make a good profit, but he should keep a record of how this work was done and so be able to assist his less fortunate neighbor by proving to him a better way of farm management.

A record or blank will be sent every club member. This report has places to enter every hour of work by the boy and by the team in preparing the ground, planting, tending and harvesting the crop. It also has spaces for the entire cost of production, yields, value of crop and profit. This gives us the complete financial standing of each club member. These reports should be made out in duplicate, one to be kept by the club member and one to be sent to the county agent. The teacher will render a valuable service to the club member and also to the Club Department by assisting with the preparation of the report.

A written story of the year's work should also accompany the report. This may be written on the blank pages at the end of the book, or on separate paper in the form of a composition. The story may be illustrated with drawings or pictures if desired. It should be told in the club member's own words.

The following outline will probably assist you in recalling the things that should be included. It might be advisable to include all of them:

1. When and why you joined the club.
2. What club you chose, and why.
3. When you first began work.
4. If a grain or cotton club member, tell how you prepared your ground, when you planted, and how many times you cultivated your acre.
5. If a Pig or Calf Club member, tell when you secured your pig or calf, how you cared for it, and what you fed it.
6. Tell all of the difficulties or hindrances you encountered.
7. How many times did your county agent visit you. Tell of what help he was to you.
8. Tell what bulletins or letters you received, and tell whether they did you any good.
9. Tell of the good times you had at the club meetings, rallies or fairs.
10. Tell how you prepared your exhibit, when and where you displayed it.
11. Tell the yield you secured, the prizes you received and the profit you made.
12. What important lessons have you learned? Do you think it pays to be a club member?
13. Are you planning on joining a club for next year? If so, what ones and why?

The report and story are the final test of the successful club member. From this report we are able to secure our data for the State records and our report to the Department of Agriculture at Washington. We get our average club yields for the State, average costs, and average profits from these records. It is very important that we have this information even if it has not been as satisfactory as the club member might desire. We want to know, at least, that the

club member tried. All reports should be completed and delivered to the county agent before the 10th of November of the year in which the work is done.

LESSON XII

CROP ROTATION

In order to discuss this subject it is necessary to understand what the term "rotation" means. Suppose a crop of corn or one of the grain sorghums was grown on a demonstration acre this year. It would take from the soil certain food elements of which it is fond. One of these important elements is nitrogen. In case the same crop is planted on the same ground the following year, still more nitrogen will be removed, and, if this is kept up a number of years, in time the available nitrogen supply will become exhausted.

Now, suppose instead of planting the same crop, we plant some legume crop (alfalfa, peanuts or cowpeas). The legumes have the power of adding nitrogen to the soil and removing other food elements. Both the corn and grain sorghums, also the legumes, require phosphoric acid and potash. If barnyard manure is added to the field these elements will be added to the soil, thus replacing those removed by the growing crops.

The system of following one crop with another, requiring different kinds of food, is called "Rotation of Crops". A successful rotation plan, with the proper tillage and the use of barnyard manure, will improve the soil instead of permitting it to become worn out, as is so often the case.

In planning a system of rotation, it is advisable to keep in mind the following:

1. Some legume is necessary to restore nitrogen to the soil.
2. Some crop for feeding livestock.
3. Some money crop for a cash income.
4. Cultivated crops for destroying the weeds.

In the first class (1), the legume crop recommended to our club members is cowpeas or peanuts. The feeding crop (2), should be corn or a grain sorghum crop. The money crop (3) may be cotton, broomcorn or wheat, and the cultivated crop (4), may be any row crop requiring summer tillage.

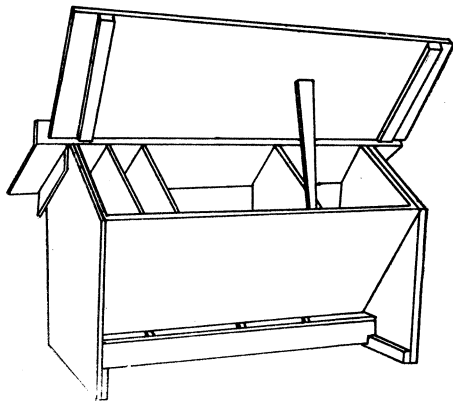
The system recommended for our club members is as follows:

First Year—Corn, Grain Sorghum or Cotton (summer cultivated crop).

Second Year—Cowpeas or Peanuts (legume).

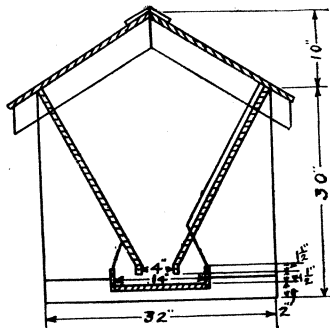
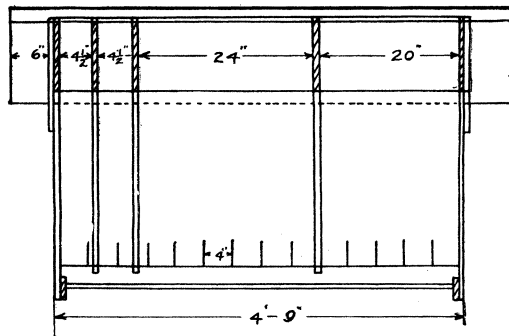
Third Year—Winter Wheat or Winter Oats (money crop and winter crop).

The above system, or some other good system, should be carefully followed in order to keep the soil in proper condition. The ground in corn, cotton or a grain sorghum crop last year should be in cowpeas or peanuts this year. The ground that was in peanuts last year can be profitably put in corn, grain sorghum crop or cotton this season, or a new acre taken for these crops.



FEED HOPPER
FOR HOGS
SCALE 1" TO 1'

*BY MEANS OF SELF-FEEDER THE HOGS
BALANCE THEIR OWN RATION,
LABOR IS SAVED IN FEEDING,
THE COST PER POUND IS USUALLY
LESS AND THE PROFIT IS GREATER*



Mechanical Department, A. and M. College, Stillwater, Oklahoma

INSTRUCTIONS FOR CLUB MEMBERS

PIG AND CALF CLUBS

BY C. L. CHAMBERS
Agent in Animal Husbandry

LESSON I

GENERAL SUGGESTIONS ON SELECTION

In entering the livestock industry a small beginning should be made, as the lessons learned will make a larger venture more profitable; in other words, do not buy several breeding animals without having had some experience. There is an advantage in starting with a young pig and growing up with it, but this advantage is perhaps offset by the fact that a developed gilt is a surer investment for the Breeding Phase, though the cost is greater. In addition the owner has a shorter time to wait for returns. In case the animal is bred, one is also saved the necessity for immediately tying up capital in a boar should there not be a good one in the neighborhood. In both the Pig Club and the Baby Beef Club it may be more satisfactory for an inexperienced member to join the Fattening Phase of the work with an animal that is not so expensive, and get the experience before making a larger investment.

Breed to Select.—Each member must be his own judge as to the breed to select. If intelligently handled any well known breed will give good results. The advantage of community breeding should not be overlooked, however. If the breed is popular in the community it is easy to make new selections and to sell breeding stock; and, the community may become noted for one breed.

Selecting.—Wisdom in selection will come from experience, though a little study will make a wonderful difference in one's ability to judge livestock. In selecting for breeding purposes the pedigree is important as "Like Produces Like", but the animal should demonstrate the excellence of the blood behind it. The point the purchaser should keep in mind is not the question of how few dollars invested, but how much real merit he can buy for every dollar invested.

LESSON II

SELECTING THE PIG

When developed and in a thrifty, growing condition, the pig should weigh about as follows:

1 month old	18- 20 pounds
3 months old	50- 60 pounds
5 months old	125-150 pounds
6 months old	155-175 pounds
8 months old	185-235 pounds
12 months old	300 pounds or more

The pig selected should be bright and lively, but not wild. A wild, vicious sow will likely kill her young intentionally or by accident, and a wild animal is not easy to fatten. A sluggish, lazy sow will likely crush her pigs by lying on them. Animals selected for breeding purposes should come from a large litter, as "Like Produces Like".

The animal should have fine hair and smooth skin, and flesh free from lumpiness. The pig should stand up well on its toes.

Viewed from front, the head should be broad between the eyes; the ears medium in size, fine and soft. The neck should be short and full, fitting well with shoulders. The breast should be wide and full. The shoulders should be broad and compact on top with no depression back of them. The last two features will show the animal to have plenty of room for lungs and heart. The body should be the same width at shoulder as at ham.

Viewed from side, the body should be deep and of good length. The top line should be moderately arched, the underline straight. The legs should be medium and not too short. The breast full and extended well forward. The animal should not be "tucked up" in lower body line just back of shoulders or just in front of hams. The rump should be long from hip bone to root of tail and slightly rounded. The ham should be broad and deep, flesh-covered well down to hock.

Boars near maturity should show strong masculine features (should look like male); sows should show distinct female features and twelve well developed teats.

References:

- Farmers Bulletin No. 566, page 8.
- Farmers Bulletin No. 205, pages 22-25.
- Farmers Bulletin No. 411, pages 40-46.
- Productive Swine Husbandry, pages 9-101, 262-269.
- Purdue University Circular No. 29, pages 76-87.

LESSON III

SELECTING THE BEEF CALF

The beef animal should be "square built", meaning broad when viewed from side, rear, front or from above; free from lumpiness, symmetrical and pleasing to the eye. The body should be deep with all lines as near parallel as possible. The head should be broad at forehead and between the eyes, muzzle broad and nostrils large, eyes prominent and placid. The jaw should be strong and broad, ears well set and not too large. Small eyes and long, narrow head are usually associated with a poor feeder. A short, thick neck is usually associated with a compact, thick body and a good feeder. The brisket or flesh between the forelegs should be well let down and have good width. The shoulders should be compact, evenly covered with flesh and wide at top, though not too wide, as this indicates coarseness. The shoulders should blend well with the neck and have no depression back of them. A straight, strong, wide back, with well sprung ribs, indicates a covering of a large quantity of high-priced meat and a capacity for digesting food.

The hips must be set wide apart, but well covered with flesh, and distance between hip bones and last rib should be close. The flanks should be well let down. The rump should be level and full, not sloping off abruptly from hip bones to tail. The pinbones should be set wide apart and be well carried, though not patchy. The twist

(flesh between the thigh bones) should be wide and well let down to hock. These two together make a good quarter. The tail should be level, not falling below or being raised above line of back. The legs should be set squarely under the body, should be strong, straight, and not "Proppy" in front or crooked behind. The animal should be covered with a heavy coat of mossy hair, and should have a pliable, loose skin of reasonable thickness. The bull should be representative of his breed and a good individual, and his head show masculinity. The female should be true to type and breed, mild in manner, neat of head, with decided feminine expression.

References:

Purdue University Circular, pages 40-55.

Pennsylvania Beef Production Bulletin No. 235, pages 9-36.

Wisconsin Bulletin, "Selecting Steers for Feeding", No. 224.

LESSON IV

SELECTING THE DAIRY ANIMAL

Experience has proven that for high milk production there are certain requirements of form. The dairy animal should differ from the beef animal in being angular of form and having little covering of flesh. The animal's body should be covered with a coat of smooth hair, and the eyes should be bright. This will show the animal is wide awake and that the thin appearance is not due to the ravages of disease or lack of food, but to an inherent tendency to convert feed into milk instead of body fat. This angularity gives what is known as the wedge conformation, which conformation outlines three wedges.

When viewed from the side, one wedge is seen with base formed by depth from top of hips to lower extremity of udder, and the apex or point of the wedge at the head. This wedge will show the animal to have a large barrel, which is very necessary in a good milk producer. When viewed from the top a second wedge is seen with the base formed by a great width across from one hock point to the other, and apex at the withers or top of shoulders. When viewed from the front the base of the third wedge is formed by the wide chest floor and the apex by the withers.

The head should be broad between the eyes, and slightly dished. The muzzle should be broad and nostrils large, eyes prominent, though not drowsy. The jaw should be strong and broad. The ear should be medium in size, fine in texture and have a yellow color inside. The neck should be thin, long and smoothly blending with the shoulder. The withers should be sharp, free from openness or coarseness. The shoulders should be sloping to insure chest capacity and smooth to show quality and trimness. The brisket should be refined, the forelegs should be set squarely under animal, and far enough apart to insure chest capacity. There should be no marked depression back of shoulders. The back should be prominent, straight and strong. The animal should have long, well sprung ribs that are wide apart, giving large chest and barrel capacity. Without a deep, long, wide barrel, large consumption of food is impossible. The loin should be strong and broad, but free from fleshiness.

Viewed from the rear the hips should be wide apart and prominent. The pinbones should be wide and prominent. The thighs should be thin and wide apart, giving room for the udder. The distance between the hip and pinbones should be long and level. The length indicates the length of udder attachment below. The rump should be level,

the tail setting should be level, and the bone in tail should be tapering and extend to hock.

As "Like Produces Like", it is essential that the calf be selected from a cow with a good udder development. The udder should be long from front to rear attachment, but not pendent, having level floor with quarters well balanced. It should not be fleshy, but should hang in folds when milked out. The funnel-shaped udder with teats close together is objectionable. The teats should be of convenient size and evenly placed and far enough apart to avoid interference while milking. The veins in front of udder should be large and branched. Following these to entrance into body we find an opening known as milk well, which should be large. The animal should have a pleasing appearance, the hair should be soft and fine, and hide appear thin and mellow when picked up.

LESSON V

FEED AND FEEDING

Animals are made of water, protein, fat and ash. The animal body is more than one-half water; hence it is evident that plenty of fresh water should be before animals at all times. Animals are also about 15% protein, hence a feed must be supplied that will furnish protein for lean meat building.

We must furnish a balanced food, or, in other words, a food that will supply the needs of the animals. For this, three general classes of food material are required:

1. Protein or nitrogenous material, which builds lean meat tissue.
2. Carbohydrates and fat to supply heat and energy, and form fat.
3. Ash or mineral matter, which forms bone, hair, etc.

In balancing foods, it is hardly necessary to consider the fat content or the ash, as these will be found in sufficient quantity in balanced rations, except in some cases with hog feeding, due to the fact that their small stomach capacity will not enable them to eat a sufficient amount of coarse feeds to secure the required amount of ash. To supply this ash to hogs, a charcoal mixture should be kept before them all the time. Formula for this mixture will be found in Farmers Bulletin No. 556, page 9.

Since it is necessary to produce cheap meat it is advisable to use pasture and rough feed as far as possible. However, care should be taken not to depend too much on this with hogs, especially young ones, as they have only one stomach and it is not large, while cattle have four stomachs, and one of these comparatively large.

The average daily gain for hogs should be at least one and one-fourth pounds per day. The average daily gain for beeves should be at least two and one-fourth pounds per day.

From the two classes of foods shown below it is possible to select a balanced ration for any animal, though the above matters must be taken into consideration in making this selection. For instance, alfalfa, a high protein rough food, could be fed with corn (a carbohydrate concentrate), making a theoretically balanced ration if fed in proper proportions. The proper proportions for profit on growing steers two years of age on full feed would be all the alfalfa they will eat and one or one and one-half pounds of corn daily to each 100 pounds of live weight. A pig on alfalfa pasture or getting all the alfalfa it wishes should get one pound of grain to 100 pounds live weight

to begin with, and gradually increase until the animal is getting three to five pounds per day per 100 pounds live weight. In order to balance the grain, considering that the pig is getting a protein rough feed, it should be fed in the proportion of nine parts of grain in the carbohydrate concentrate list to one part of tankage in the protein list. One part of grain to three parts of skim milk is also good. If a pig should be on a high carbohydrate coarse feed, as kafir or other grain sorghum, it should get, of course, a large proportion of the protein concentrate. A bred sow should not be neglected when it comes to balancing the ration, as her food must be balanced in order that she may build the tissues of the developing pigs and that they may come into the world as vigorous individuals. She should not, however, be fed an exclusive fattening food, as she perhaps would have trouble at farrowing time. The suckling sow, too, must be fed well in order that she can properly nourish the litter and keep up her body strength. From the average of a large number of sows it was found that the average litter gained three pounds per day. Eleven pounds of milk makes one pound of gain, so it requires thirty-three pounds of milk to support the average litter. There are eight pounds of milk in a gallon, hence the average sow produces four gallons of milk.

High Protein Feeds

Concentrates

Peanut Cake Meal
Cottonseed Meal
Gluten Meal
Soybean Meal
Tankage
Skim milk
Bone Meal
Wheat Shorts

Coarse Feeds

Alfalfa Hay or Pasture
Peanut Hay or Pasture
Vetch Hay or Pasture
Sweet Clover Hay or Pasture
Pea Hay or Pasture
Soybean Hay or Pasture

High Carbohydrate Feeds

Concentrates

Corn
Corn Chops
Kafir
Feterita
Milo
Wheat
Oats

Coarse Feeds

Prairie Hay
Corn Fodder
Straw (wheat, etc.)
Cottonseed Hulls
Sorghum Hay or Pasture
Rape Pasture
Sweet Potato Pasture
Corn Silage
Millet Hay or Pasture
Wheat or Oats Pasture

References:

- Productive Feeding of Farm Animals, by Wolf, pages 5-226,
252-276, 294-316.
Productive Swine Husbandry, by Day, pages 131-316, 243-260.
Farmers Bulletin No. 411, pages 5-40.
Farmers Bulletin No. 205, pages 25-34.
Farmers Bulletin No. 566.
Farmers Bulletin No. 22.
Pennsylvania Bulletin No. 235.

LESSON VI MANAGEMENT

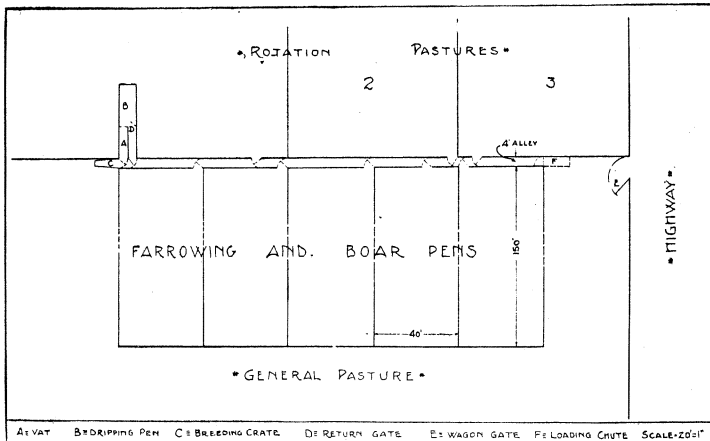
All animals should be kept free from lice and ticks. These cause discomfort to the animals and do not make profit, but cost money to feed. Filth, mud, etc., is unsightly and may cause cholera or other diseases to break out.

Houses should be provided for sows at farrowing time and for all swine during winter. Feed may keep these animals warm, but it is expensive and not so safe. The house for sows should have a fender around the wall (as shown by cut on page 28 of Farmers Bulletin 205) to keep sow from crushing the young pigs.

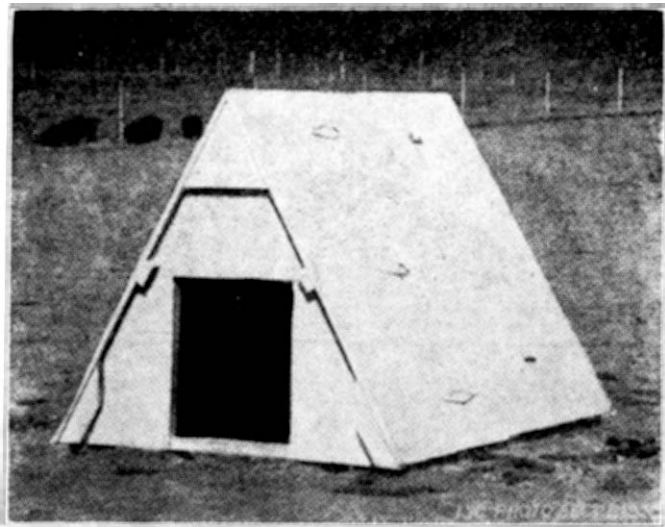
An open shed, perhaps closed on the north, will be sufficient for beef animals after they have gotten past the calf stage in life.

Every effort should be made to get away from the expensive feeding done in a small pen or dry lot, and every effort made to get the animal on pasture. The following plan of management of swine should furnish some valuable suggestions:

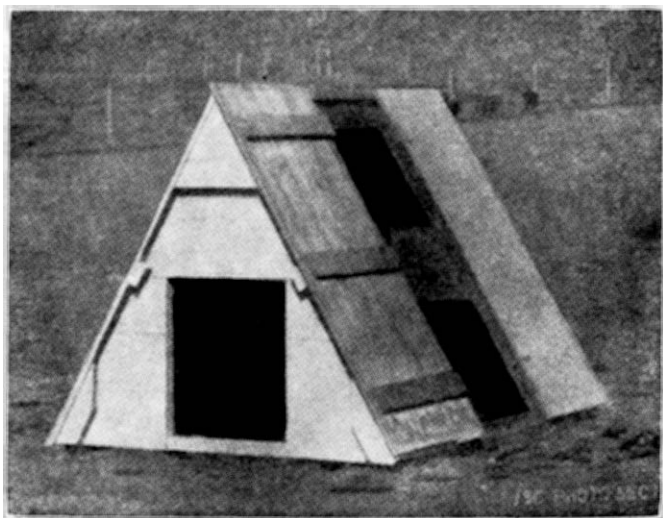
To dip pigs, drive from outside pasture or farrowing or boar pens down alley to vat "A". The gate that opens vat closes breeding crate "C". After pigs have drained in "B", return gate "D" is opened; also gate leading to alley which cuts off reentrance to vat. To breed sow, fasten in breeding crate "C". The boar may be easily handled in alley without the usual trouble of separation. The sow may be returned to former place or to wagon by way of loading chute "F". The latter arrangement would be convenient for loading pigs fattened in any of the pens. When spring farrowing is over, pens may be planted and used as pasture for boars. Note that pigs are always driven to corner.

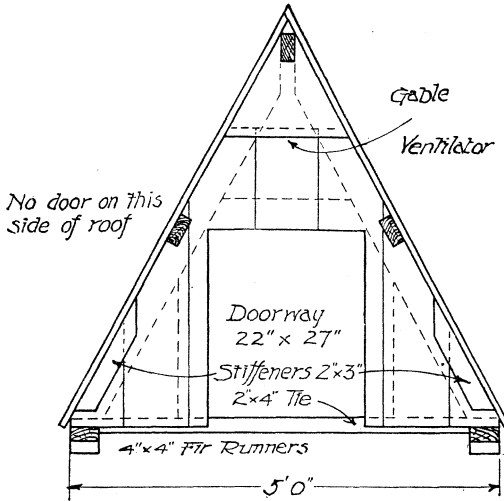


Plan for Management of Pigs on the Farm

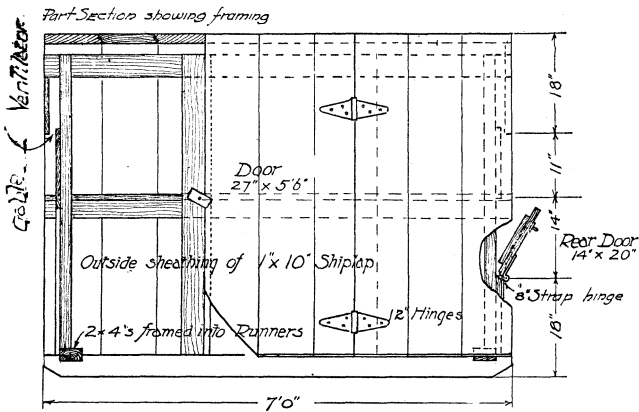


Agricultural Engineering and Animal Husbandry Section, Iowa Experiment Station





Economy House. Front end elevation.



• Agricultural Engineering &
• Animal Husbandry Sections •
• Iowa Experiment Station •

Economy House. Side elevation.

The rotation for hogs may be arranged from the following crops:

1—Spring and Summer Pasture	2—Fall Pasture	3—Winter Pasture
Alfalfa	Alfalfa	Wheat
Wheat	Sweet Clover	Rye
Oats	Peanuts	Alfalfa (part of
Sweet Clover	Cowpeas	winter)
Oats	Rape	
Rape		

The general pasture may be planted in bermuda or sweet clover.

INSTRUCTIONS FOR CLUB MEMBERS

POULTRY

BY HARRY EMBLETON
Agent in Animal Husbandry
In Charge of Poultry Clubs

LESSON I

SELECTION AND BREEDING

There are certain outward indications which indicate a chicken of strong vitality. They should be considered in selecting the breeding stock. The most important are:

1. A strong chicken has a strong, compact, broad, thick head with good, rich color in head parts.
2. The body should be long, deep in rear, wide across the back and a broad, deep breast.
3. The feathers should be sleek, clean and orderly. A sick or weak chicken will be rough and unkept.
4. The legs should be strong, well set apart, and set on the outer edge of the body rather than underneath. They should not be knock-kneed.
5. Your vigorous chickens will be the ones off the roost first in the morning and the last to roost at night.
6. Their toe nails will be worn from work.
7. In the male bird a fighting disposition is an indication of vigor. Gallantry to the females is an indication of vigor.
8. In addition to the above, it should be remembered that it is the early-hatched pullets which are the winter layers. They also make the best fowls for fairs and poultry shows as they are the best developed.

A chicken must have vigor and size in order to assimilate and manufacture the food which is given it into a finished product as meat and eggs.

Hatching

There are two methods of hatching; the natural, with the old "biddy", and the artificial with the incubator. Each have their advantages under certain conditions.

Conditions Preceding Hatching.—The conditions under which the eggs for hatching purposes are kept before being incubated have a big influence upon their hatching power.

1. In selecting eggs for hatching, pick those that are medium to large. Have them regular in shape. Not too long. Avoid freakish-shaped eggs. The weight of the chicks hatched are in proportion to the weight of the eggs before hatching.
2. Keep eggs in a cool place between the temperatures of 40° and 60° Fahrenheit. Higher or lower temperatures will reduce the

fertility and hatching power of the eggs. The storm cellar, if dry, would make a good place to keep eggs.

3. The sooner the eggs are put in the incubator or under the hen after they are laid the better will be the hatch. They should be allowed, however, to settle for a day. If getting eggs by express or parcel post, it is well to let them stand a day to allow them to settle after the jarring they get in shipping.

4. All eggs being saved for hatching should be turned daily. This is also very important.

Natural Incubation.—This method has the advantage of no extra cost, and can be carried on with less experience. It can only be used on a small scale, however. It would take too much time and labor to carry it on in a very extensive way.

Another disadvantage is that the broody disposition of a hen depends upon climatic conditions. In cool springs a hen will not set until late. This means we get late-hatched pullets, which are undesirable. Even if a hen sets early, they are uncertain at times, and may leave a nest and ruin all the eggs. Then it must be remembered that the mother hen will often crush the little chicks by stepping on them. A hen must be fed all during its incubating period. This takes time and feed.

1. Make sure the hen is broody before putting her on good eggs.
2. Dust her well with a good lice powder, or use blue ointment.
3. Locate the coop in a dark place.
4. Do not put too many eggs under one hen. Poor results are bound to follow if this is done. From twelve to fifteen eggs is plenty for warm weather, and in cool weather ten to twelve eggs would be plenty.

5. The best feed for a setting hen is grain.
6. Use medium weight hens for setting purposes; a large hen will crush the eggs and chicks, a small one is too flighty.
7. Disinfect coop twice a week. Any good disinfectant, as coal tar "dips", kerosene and soapy water, crude oil, etc., will do.
8. Test on seventh day for infertile eggs. Test on the fourteenth day for dead and weak embryo chicks, indicated by stationary blood ring or undeveloped embryo.
9. If eggs become dirty or broken during hatching, wipe them off with a rag dampened with warm water while the hen is off the nest feeding in the evening.

Artificial Incubation.—This will not give as good results as natural incubation by 10%. Even at that there are many good reasons why it can be successfully and economically used under right conditions.

Two of the main advantages of an incubator are that pullets can be hatched early, and that eggs can be hatched in larger numbers with less trouble. A machine can stand in the cellar, if it is warm, or in the kitchen. Under these conditions it can be cared for very easily with very little time lost. The attendant does not have to go outside in all kinds of weather in order to take care of the hatching eggs.

Some people are prejudiced against an incubator for they feel that the incubator-hatched chicks are not as healthy or strong as the hen-hatched chicks. They are just as strong when hatched, if the incubator has been running properly, and will be even more free from vermin and disease than the hen-hatched chicks.

Some people have blamed incubators for poor hatches when probably the incubator has not been at fault. Any of the reliable

incubators, if the directions of the manufacturer are followed, will give good results. Far more important than the incubator is the egg which goes into the incubator. If these eggs come from good, strong healthy stock and are handled rightly, as stated above, before being put into the incubator, it will stand considerable irregularity on the part of the incubator without seriously harming them. This does not mean that we should be careless in handling the machine. We should handle it as directed by the manufacturer.

LESSON II

BROODING

There are two methods of brooding, natural and artificial.

Natural Brooding.—The hens make a very good brooder for the farmer and others who handle chickens on a small scale. Some disadvantages in using the hen are that you can only brood a small number, and she will sometimes crush the chicks.

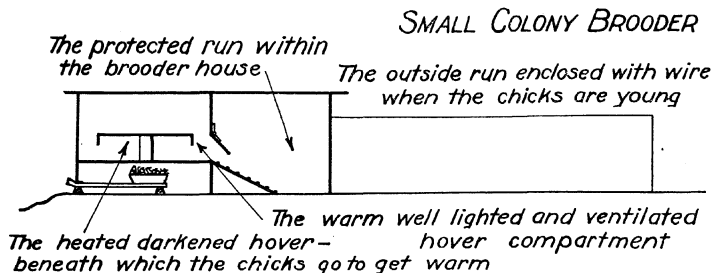
It is better to keep her shut up until chicks get a good start. If this is not done, she is liable to take the chicks out in the wet grass in the morning. She will also give them too much exercise.

Care should be taken to keep the mother hen free of lice. If the mother is free of lice there will not be any on the little chicks.

Artificial Brooding.—Artificial brooding has the advantage of brooding in larger numbers, thus cutting down in time and labor.

There are five distinct features an artificial brooder should have:

1. There must be a good, reliable source of heat.
2. There must be a **hover**, circular or square. It should be kept dark, well ventilated and accessible for the chicks. It should also have a fairly high and even temperature.
3. There should be a **brood compartment**, well lighted and a little cooler than the hover. This gives the chicks a chance to get to a cooler temperature if it is necessary.
4. Connected with the brooder compartment, but within the brooder house, it is well to have a **light run** or yard. The floor should be covered with light sand and litter.
5. An **outdoor run** should connect with the brooder to allow chicks to run in fresh air in fair weather.



The above diagram will be a guide to any boy or girl who wishes to make a brooder.

Temperatures.—At the start run the brooder from 98° to 100° Fahrenheit, from 94° to 96° the second week, from 90° to 92° the third week, and from 80° to 85° the fourth week. The idea is to gradually decrease the heat until the chickens are weaned.

Sources of Heat.—Gas, gasoline, coal or kerosene oil may furnish the source of heat.

Disinfecting.—There should be a systematic method of disinfecting the brooder. It should be done twice a week with any of the disinfectants previously stated.

LESSON III

FEEDING

Feeding Little Chicks.—Under no circumstances should the little chicks be fed solid foods until forty-eight hours after hatching. Nature has provided for feeding the chicks during this period by the yolk enclosed within the stomach of the chicks. Feeding before this time is very liable to cause congestion in the stomach and also intestinal trouble. After forty-eight hours let their first feed be some very fine sand or grit. Sour milk helps to keep down the white diarrhoea. Keep the sour milk before them all the time, feeding from time of hatching.

For the first few days feed some hard-boiled eggs (boiled an hour), mixed with some rolled oats or corn bread. Stale bread is good. Feed this five times a day. Chicks, like babies, should be fed little and often.

After the first few days, small grains, or a good commercial chick feed, should be fed in chaff or litter morning, noon and night, so as to give the little fellows exercise. A dry mash of rolled oats and mill run with fine meat scraps can be kept in hopper before them all the time. Grit, cracked oyster shell and sour milk should be before them all the time. Some form of green food, as young grass or sprouted oats, should be fed.

As chicks get older the larger grains can be fed in litter twice daily, and mash, consisting of mill run, meat scraps and corn chop can be kept in a hopper before them all the time. Grit, oyster shell and sour milk or water should also be kept before them all the time.

Feeding Laying Hens.—Chickens require food primarily for two reasons, one to maintain and repair the body, and the other to produce eggs.

In maintaining the body the food must go toward making the flesh, the blood, the eggs and the feathers. The particular kinds of foods which go to make up these parts are called **proteins**.

The hen also requires heat and energy. The foods going to supply these wants are called **carbohydrates**.

Then there must be some food to make up the bone and egg-shell. These foods are called **minerals**.

Still other foods which contain a high degree of moisture have a very beneficial effect upon the digestive organs of the fowls. These are called **succulent foods**.

Another material which is beneficial to fowls, but which is not a food, is called **grit**. This is used merely to help grind the whole grains and other foods in the hen's gizzard.

To have a proper meal which will keep the hen healthy and give her food from which to manufacture eggs, at least one feed from each of the following groups should be fed. The feeds are arranged from top to bottom, according to their feeding value:

Group 1
(Carbohydrates)
Corn or Kafir
Wheat
Oats
Rye
Barley

Group 2
(Proteins)
Skim milk (sour)
Clabbered Milk
Buttermilk
Meat Scraps
Alfalfa Meal
Cottonseed Meal
Peas
Beans
Peanuts

Group 3
(Proteins
and
Carbohydrates)
Mill Run
Bran
Shorts
Middlings
Corn Meal
Hominy
Chops

Group 4
(Succulent)
Sprouted Oats
Alfalfa (moistened)
Cowpeas (green)
Rye (green)
Barley (green)
Lettuce (green)
Rape (green)
Cabbage (green)

Group 5
(Minerals)
Oyster Shell
Lime

Group 6
(Hens Teeth)
Commercial Grit

Methods of Feeding.—Grains should always be fed in a litter of straw or leaves in order to compel the hens to get exercise. Hens need exercise to keep in good health and to work up an appetite.

The ground feeds and protein feeds should be mixed and fed in a box. These should be kept before the chickens all the time.

Grit and oyster shell should be kept apart and fed in boxes (hoppers).

Green feeds can be fed on the floor.

LESSON IV

HOUSING

There are just four things to keep in mind either in building a new poultry house or remodeling an old one. These are:

1. That a house must be made in such a way as to allow the greatest amount of **sunshine** to enter. Sunshine is our best disinfectant and will do considerable toward keeping down diseases and vermin. This can best be obtained by opening up the upper half of the south side of the poultry house. The south side is best because it allows the greatest amount of sunshine to enter during the day.

This opening should be covered by wire to prevent fowls from getting out and prowling enemies from entering. A burlap curtain can be made to drop over this opening in bad weather. Burlap is best as it allows ventilation while the curtain is down.

2. It is necessary to have the air inside of the house **dry**. Damp air will aid in the breeding of diseases and pests. A **cold, dry air** is not near as harmful as a cold, damp air. If the house has an open front, as described above, the air will be dry.

3. Although fresh, dry air is necessary, it must be obtained **without drafts**. Except in summer, only one side of the house should

be opened. The other sides should be tight. This means that all the cracks should be covered on the outside to prevent drafts. In the summer it would be well to have a ventilating door in the rear which can be closed except in warm weather.

4. The floor should also be dry. Wood and cement floors are usually dry. The dirt floor is liable to be damp unless a layer of cinders is put in underneath the floor. This layer should be three or four inches thick and should be the same distance below the surface of the ground. This will prevent the moisture coming through. A good, thick layer of straw should always be on the floor.



Frederick Palmtag, a Poultry Club Member, of Cherokee County, and House Built by Himself. Note Open Front on South

platform in order to keep the food and water clean and to give the chickens all the floor space for scratching.

There are many types of houses, such as the shed-shaped, gable roof, combination roof and half monitor type. Probably the half-monitor type is as good, if not better, than any other for Oklahoma. It is cooler in summer and warmer in winter.

MARKETING

Next in importance to good production of poultry, meat and eggs, is the question of selling the products not used on the farm at a good profit.

Eggs.—The market price of eggs in this State is governed almost entirely by the quality of the eggs. Heat is the great enemy of the quality of the egg. The price of eggs in the spring, before the hot weather sets in, is usually very good, considering that this is the time of year when the chickens are laying the most eggs. The price drops immediately when hot weather sets in and does not rise again until the heat of the summer is over.

During these hot months, if proper precautions are taken, good quality eggs can be produced, and better prices obtained. These precautions are:

1. Produce infertile eggs(eggs produced without rooster in flock).
2. Keep clean straw in nest.
3. Gather eggs at least once a day.
4. Keep eggs in cool place.
5. Market eggs at least once a week; twice is better.
6. Protect eggs from sun on way to market.
7. Use small eggs at home.

Infertile Eggs

Infertile eggs are produced in flocks in which the male bird is absent. The production of these eggs is the most important part of bettering the quality of eggs. An infertile egg will go through warm conditions and come out in much better shape than a fertile egg. Therefore "swat the rooster" after breeding season.

Note.—The Extension Division of the A. and M. College at Stillwater will send posters showing the difference between fertile and infertile eggs at various stages upon request. These are put out by the United States Department of Agriculture.

Chickens for Market

In most cases the price obtained for a fryer or rooster is governed by its weight. The heavier the carcass the more money will be obtained.

By confining the chickens in a small coop or small pen and feeding them with ground feeds mixed with sour, skim milk or buttermilk for a period of from ten to fourteen days, they will increase from 15% to 30% in weight and will look much better when prepared for the table.

Capons.—Capons are unsexed male birds. The operation causes them to become larger, and the flesh to become much better in quality.

Aside from the above, capons make exceptionally good mothers. Some people raise them primarily for this reason.



Capon Mothering Chicks



Dale Collins, Panama, Leflore County,
With Club Chickens

LESSON V

SANITATION, DISEASE AND PESTS

The question of diseases and pests is summed up in the old saying that "an ounce of prevention is worth a pound of cure". The individual value of a chicken is so small it does not pay to spend time and money to cure it if it is sick except by the "ax and spade" method. While delaying, the trouble may spread from the one fowl to many.

Rather than to try to cure chickens it is better to prevent it by surrounding the chicken with a good, dry house with lots of sunshine, disinfect the house regularly with a good disinfectant, and cull the flock so that only the good, strong fowls are left to be raised.

Rats.—Rats are one big source of trouble which cannot be prevented by the above. According to the information put out by the United States Department of Agriculture, the best way to keep down the rats is as follows:

1. Rat-proof houses by burying hardware cloth 20 inches in ground around the foundation of the poultry house.
2. Have all openings closed at night, including doors.
3. Use poison, but put it under box with small openings in it so that only rats can enter.
4. Have chicken house away from barn, corncrib or other sources of feed.
5. Have several good cats or a fox terrier around the place. Do not feed them too well. If you do, it will make them lazy.
6. Keep fighting them all the time, and at the same time induce your neighbors to do likewise.
7. Put in concrete floors.

SCORE CARDS FOR CLUB WORK

The following score cards will be used in the Boys Club work. Lessons in judging, given by the county agent or teacher, will be of valuable assistance to the club member in choosing his exhibits for the county fair or contest.

SCORE CARD FOR CORN

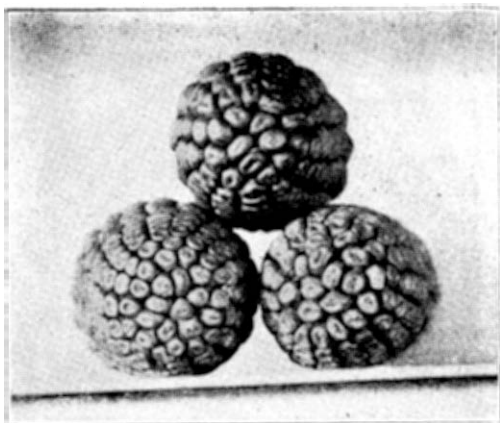
	Possible Score	Score Received
UNIFORMITY OF EXHIBIT—Uniform in shape, length, circumference and number of rows	5	.....
LENGTH OF EAR—Varies with variety measurement	10	.....
CIRCUMFERENCE OF EAR—Varies with variety measurement	5	.....
SHAPE OF EAR—Generally approaching the cylindrical, though slightly tapering is not objectionable, with straight rows and with proper proportions of length to circumference according to standard of variety	5	.....
TIPS OF EAR—Oval shape with well dented kernel, corresponding to kernels of ear. Protruding cob objectionable	5	.....
BUTTS OF EAR—Kernels rounding over the butt in regular manner, leaving a depression when shank is removed, and the kernels of butt correspond to kernels of ear	5	.....
KERNEL SHAPE—Approaching wedge-shape and full at germ, with full depth, according to variety	5	.....
KERNEL FORMATION—True and even to conform to variety.....	5	.....
SPACE BETWEEN ROWS—Wide furrows between rows objectionable	5	.....
SPACE BETWEEN KERNELS AT COB—Weakens vitality and reduces shelling percent	5	.....
COLOR OF GRAIN AND COB—Should conform to variety characteristics	15	.....
SEED CONDITION—Mature, sound and of strong vitality	10	.....
TRUENESS TO TYPE—Conforming to variety characteristics	10	.....
PERCENTAGE OF SHELLED CORN—Should be 85% for deep-kernel, late varieties, and 80% for shallow-grain, early-maturing varieties	10	.....
Total	100	.....

GROUP STANDARDS

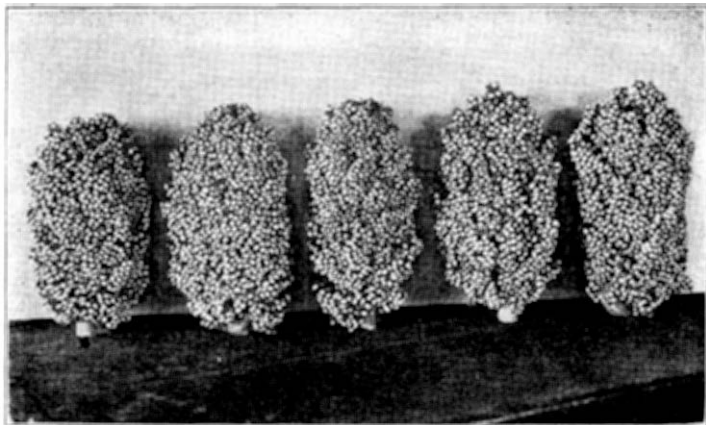
GROUP 1. Boone County White and other late-maturing varieties.—Length of ear 9-10 inches; circumference $7\frac{1}{4}$ to $8\frac{3}{4}$ inches, and rows 18-22, according to variety.

GROUP 2. Silver Mine and other medium early-maturing varieties.—Length of ear 9-10 inches; circumference $6\frac{1}{2}$ to 7 inches, and rows 14 or 16, according to variety.

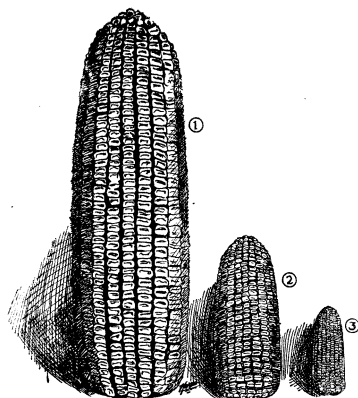
GROUP 3. Dent Squaw and other early-maturing varieties.—Length 8-9 inches, circumference 6-7 inches, and row 14 or 16, according to variety.



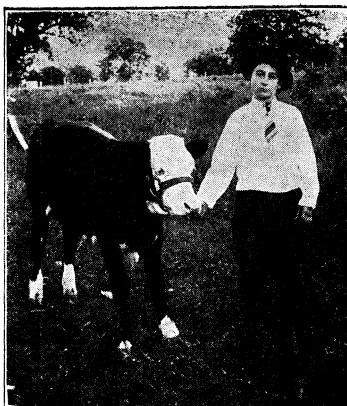
Ideal Type of Corn Grown by Club Members



Sweepstakes Exhibit of Milo at Oklahoma State Fair, 1915. Grown by Claude Ingram, Club Member, Hollis, Harmon County, Oklahoma. Variety White Milo. Yield, 64 Bushels per Acre



Comparison of Acre Yields of Corn, 1915—
1 Acre Yield of Orion Stuteville, 111 1-7 Bushels.
2 Average Acre Yield All Club Boys, 47.3 Bushels.
3 Average Acre Yield for State, 25 Bushels.



Andrew Morgan, Paden, Okfuskee County, and His Baby Beef, 1916. Winner at County Fair

**SCORE CARD FOR BLACK-HULLED WHITE KAFIR, MILO
AND FETERITA**

	Standard Score	Score Received
Head Sample		
UNIFORMITY—Heads should be uniform in shape, size and type	5	.....
LENGTH OF HEAD—Kafir 10-12 inches; milo 7½ to 8½ inches; feterita 9-10 inches	10	.....
CIRCUMFERENCE—Kafir 7-9 inches; milo 8½ to 9½ inches; feterita 7-8 inches	10	.....
STRUCTURE OF HEAD—Black Hulled White Kafir—The center stem should be at least three-fourths as long as the head. The internodes or seed stem sections should occur at regularly de- creasing intervals and be not less than five in number, even distribution, uniformity in length and close setting of the joints on seed stems being desirable. Milo and Feterita—Center stem should occur regularly, even in distribution, uniformity in length, and close setting of the seed stems being desirable ...	15	.....
SEED STEM BRANCHES—Well proportioned to length and size of head, no open spaces, each place for a seed being filled	10	.....
COLOR—Kafir—White grain and pink speck on tip, enclosed in a black hull. Milo—Varies with variety; milk-white grain with black hull, and reddish-yellow grain with brown hull. Feterita— Chalk-white grain, enclosed in a black hull	5	.....
SIZE AND SHAPE OF KERNEL—Kafir—6-7 grains measure 1 inch. Ovate or egg-shaped, slightly flattened. Milo—A frac- tion over 6 grains should measure 1 inch. Round and slightly flattened at base or germ end. Feterita—6 grains should measure 1 inch. Round and decidedly flattened at the base or germ end	10	.....
SHATTERING—Kafir should not shatter easily. Milo should not shatter. Feterita will shatter some	5	.....
EXSERTION—Head must be pushed clear out of boot	5	.....
SEED CONDITION—Sound, pure and mature	10	.....
BASE—First seed stems not too long, thickly set and well filled close up to the main stem. An open space is undesirable	10	.....
TIP—Kafir—Not too tapering. Tip seed stems should not be more than one-fourth as long as the head. Milo—Rounding. Fete- rita—Slightly tapering. Each should be well filled with sound and uniform kernels	5	.....
Total	100	.....
Grain Sample		
UNIFORMITY—Should be uniform in size, shape and color	20	.....
SIZE AND SHAPE OF KERNEL—Should conform to standard of its kind	20	.....
MARKET CONDITION—Free from foreign material, damp, un- sound or musty kernels	35	.....
WEIGHT PER BUSHEL—Should be 56 pounds	25	.....
Total	100	.....

SUGGESTED SCORE CARD FOR SPANISH PEANUTS

(Not Officially Approved)

	Standard Score	Club Member's Score	Corrected Score
Uniformity of exhibit	15	.....	.....
Color	5	.....	.....
Size and shape of pod	15	.....	.....
Trueness to type	15	.....	.....
Plumpness of kernel	15	.....	.....
Seed and market condition	25	.....	.....
Weight per bushel	10	.....	.....

EXPLANATION OF POINTS AND RULES FOR JUDGING

1. **UNIFORMITY OF EXHIBIT.**—Uniform size, shape and color.
2. **SIZE AND SHAPE.**—Should be $\frac{3}{4}$ to 1 1-16 inches long and 6-16 to 7-16 inches wide. Pods should be full, but show the division distinctly between the two kernels.
3. **COLOR.**—Should be light brown. Cut according to discoloration.
4. **TRUENESS TO TYPE.**—Peanuts should possess like characteristics and should be true to the Spanish variety. Each peanut should have two compartments.
5. **KERNELS** should be well developed and not shriveled.
6. **SEED AND MARKET CONDITION.**—Mature, sound, of strong vitality, and free from dampness. Excessive dampness disqualifies the exhibit. Cracked, sprouted and musty peanuts should be penalized. Pops (no seed in pod) should be cut. Bright color of pods, free from foreign material, are desirable.
7. **WEIGHT PER BUSHEL.**—Spanish peanuts weigh 30 pounds to the bushel. Less than that indicates pops or immature condition.

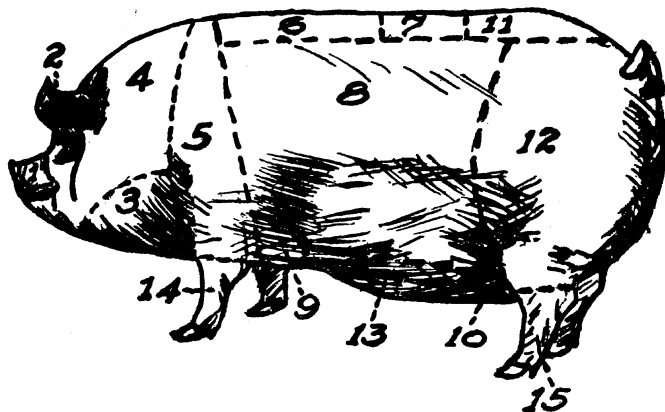
SCORE CARD FOR SHORT-STAPLE COTTON

	Standard Score	Club Member's Score
LINTING PERCENT—Standard 32% to 40%	26	.....
SEED Uniform in shape, size, color and density of fuzz coat	10	.....
DRAG—Ten locks shall be tested for drag	10	.....
STAPLE—Standard length 1 1-16 inches. Variation allowed 7-8 to 1 3-16	20	.....
BOLLS—60 to 80 to pound	10	.....
GRADE—Luster bright, silk-like. Color natural white to slightly cream, not showing immaturity, damp, green condition, or vegetable odor; free from parts of leaves, sticks or other foreign matter; free from dust or sand; without spots, tinges or stains	24	.....
Total	100	.....

SCORE CARD FOR FAT HOGS

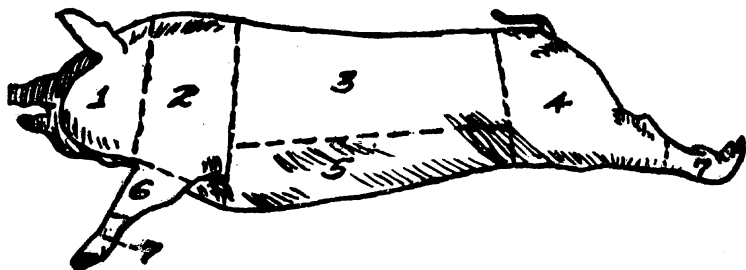
	Standard Score	Club Member's Score	Corrected Score
GENERAL APPEARANCE			
WEIGHT—Six months old, 200 pounds; 8 months old, 300 pounds. Deduct 1 point for each deficiency of 25 pounds	5	.....	.....
FORM—Deep, broad, long, low set, symmetrical, smooth, rectangular	10	.....	.....
QUALITY—Hair medium fine; skin fine; flesh smooth and mellow; clean cut; refined head; sides free from wrinkles; clean bone	10	.....	.....
CONDITION—Deep and even covering of flesh; firm....	8	.....	.....
SNOUT—Medium long; medium fine	1	.....	.....
EYES—Full and clear; wide apart	1	.....	.....
FACE—Short; cheeks full; dished according to breed; broad between eyes	1	.....	.....
EARS—Medium size and fine; pointed; thin	1	.....	.....
JOWL—Full, broad and neat	2	.....	.....
NECK—Short; full; top line curving slightly upward....	1	.....	.....
SHOULDERS—Full and even; compact on top; smooth	6	.....	.....
BREAST—Wide; well advanced; full	2	.....	.....
LEGS—Short, straight, wide apart; pasterns short and upright; clean bone	3	.....	.....
BODY			
CHEST—Deep and broad; girth large, full	2	.....	.....
SIDES—Deep, long, full, smooth, firm	6	.....	.....
BACK—Broad, straight; fleshed deeply and evenly	10	.....	.....
LOIN—Wide, straight; fleshed deeply and evenly	10	.....	.....
BELLY—Underline straight and even; not paunchy....	2	.....	.....
HINDQUARTERS			
HIPS—Wide apart; smooth	2	.....	.....
RUMP—Long, wide, even, evenly fleshed	2	.....	.....
HAMS—Wide, deep, plump, full, firm	10	.....	.....
THIGHS—Fleshed close to hocks	2	.....	.....
LEGS—Short, straight, wide apart, clean bone	3	.....	.....
Total	100	.....	.....

LOCATION OF POINTS OF FAT HOG



- | | | |
|-------------|-----------------|-------------|
| 1. Snout | 6. Back | 11. Rump |
| 2. Ear | 7. Loin | 12. Ham |
| 3. Jawl | 8. Side of Ribs | 13. Belly |
| 4. Neck | 9. Foreflank | 14. Foreleg |
| 5. Shoulder | 10. Flanks | 15. Hindleg |

CARCASS OF FAT HOG SHOWING CUTS



- | | |
|------------|------------|
| 1 Head | 4 Ham |
| 2 Shoulder | 5 Bacon |
| 3 Back | 6 Hock |
| | 7 Feet |
| | Short Ribs |
| | Side |
| | Tenderloin |
| | Pork Loin |

SCORE CARD FOR BEEF CATTLE

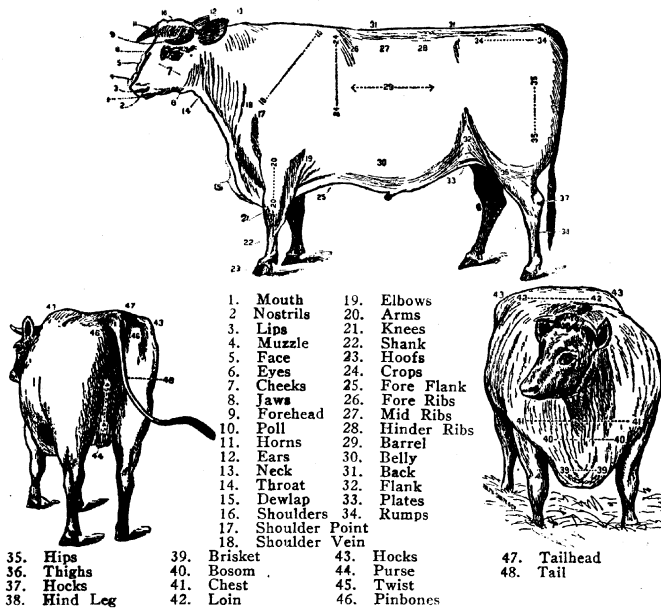
GENERAL APPEARANCE 42	Standard Score	Club Member's Score	Corrected Score
WEIGHT—One year old, 800 pounds; 2 years old, 1,300 pounds; 3 years old, 1,500 pounds. Deduct 1 point for each deficiency of 100 pounds	10	.....	.....
CONFORMATION—Compact and smooth of form, having good width and depth; low set, and carrying evenness and straightness of lines	10	.....	.....
QUALITY—Flesh firm; hair fine; skin pliable and mellow to the touch; bone dense; smooth, even distribution of flesh	10	.....	.....
CONDITION—Indicated by deep, even covering of flesh, especially in regions of valuable cuts; thick of flank and full purse; a general plumpness and fullness all over entire animal	12	.....	.....
MUZZLE—Muzzle broad; mouth large; jaws wide; nostrils large	1	.....	.....
EYES—Large, clear, prominent and placid	1	.....	.....
FACE—Short, quiet expression	1	.....	.....
FOREHEAD—Broad and full	1	.....	.....
EARS—Medium size; fine texture, well set	1	.....	.....
HORN.—Fine texture; oval; medium size	1	.....	.....
NECK—Short and thick; throat clean	1	.....	.....
FOREQUARTERS 8			
SHOULDER VEIN—Full	2	.....	.....
SHOULDER—Smooth, well covered with flesh, compact on top	2	.....	.....
BRISKET—Advanced; breast wide; free from excessive flesh	1	.....	.....
DEWLAP—Skin not too loose and drooping	1	.....	.....
LEGS—Straight, short; arm full; shank showing quality	2	.....	.....
BODY 32			
CHEST—Full, deep, wide; girth large; crops full	4	.....	.....
RIBS—Long, arched and thickly fleshed	8	.....	.....
BACK—Broad, straight, carried strong; smooth and evenly fleshed	10	.....	.....
LOIN—Broad and thick	8	.....	.....
FLANK—Full, thick and even with underline	2	.....	.....
HINDQUARTERS 11			
HIPS—Smoothly covered; distance apart in proportion with other parts	2	.....	.....
RUMP—Long, wide, even; tailhead smooth, not patchy	2	.....	.....
PINBONES—Not prominent; far apart	1	.....	.....
THIGHS—Full, deep, wide	2	.....	.....
TWIST—Deep and plump	2	.....	.....
LEGS—Straight, short; shape fine, smooth	2	.....	.....
Total	100	.....	.....

BREEDING STOCK

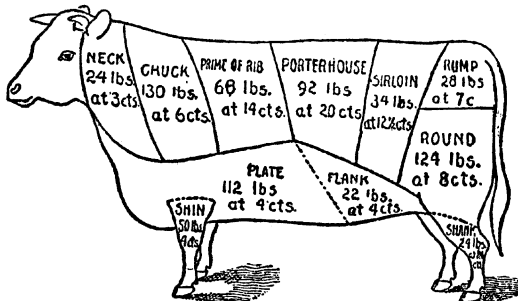
In scoring breeding stock, omit score for condition in above scales of points, substituting scale below; consider condition under quality:

BREED TYPE—Should be true to the type of the breed	3	.....	.....
CHEST—Extra	2	.....	.....
TEMPERAMENT—Active, showing full vigor	2	.....	.....
CHARACTER—Development of sex characteristics—bulls masculine, cows and heifers feminine in appearance	3	.....	.....
DISPOSITION—Quiet and not irritable	2	.....	.....

DIAGRAM OF BEEF CATTLE



BEEF CUTS AND VALUES



RETAIL DEALER'S METHOD OF CUTTING BEEF

A good 1,200-pound steer dresses about 800 pounds, and of this 708 pounds is marketable meat. All of the high priced cuts are taken from ribs, loins and hindquarters, and the best cuts come principally from the ribs and loins. These valuable cuts together weigh 346 pounds, and at above prices sell for \$44.55. The less valuable cuts from the forequarters, belly and flank weigh 362 pounds, and bring only \$16.48.

SCORE CARD FOR POULTRY

SCALE OF POINTS

	Perfect Score	Score Allowed
DISQUALIFICATIONS —Decidedly crooked breast, crooked backs, or wry tails.		
HEALTH AND VIGOR —The bird must be free from disease or from any indication of having been affected with disease. It must also show strong constitution and great vigor as indicated by bright red comb and wattles, and by full, prominent, bright eyes, by general alertness, and by bright, lustrous plumage. Males should be decidedly masculine. Avoid females showing masculine appearance	15	.....
HEAD		
SHAPE OF HEAD —Should be short, deep and broad	2	.....
FACE, COMB AND WATTLES —Should be bright red. (Dark red approaching black indicates poor condition.) Wattles medium size. Comb small to medium, firmly set on head. Avoid lopped combs in those birds where they are supposed to be upright	1	.....
EYE —Large, full, bright. (Sunken or dull eye denotes lack of vigor and poor vitality.)	1	.....
BEAK —Short, strong, curved	1	.....
NECK —Medium short and stout in proportion to the body	3	.....
WINGS —Strong, medium size, neatly folded, and held firmly in place. (Avoid breeding from slipped or twisted-winged birds.)	5	.....
BODY —General Shape—Body should show good length, breadth and depth, and be well fleshed throughout		
BREADTH OF BODY —Should be broad at shoulders, breadth extending downward well back to hips	5	.....
DEPTH OF BODY —Should be deep from shoulder to front of keel and extending well back	5	.....
BACK —Back of good length, broad throughout, and fairly level on top, from side to side, throughout its entire length, and ending in a broad, full tail	20	.....
BREAST —Deep, broad, full, corresponding with breadth of shoulders. Keel or breast bone should be long, straight and well fleshed	30	.....
THINNESS AND TEXTURE OF SKIN —Skin should be thin and smooth; free from roughness or scalliness	2	.....
LEGS —Medium length and set well apart. (Knock-kneed individuals are undesirable.)		
THIGHS AND SECOND JOINTS —Short, thick and heavily fleshed	6	.....
SHANKS —Short, strong	3	.....
TOES —Strong, straight, short, well spread	1	.....
Total	100	.....

COMMERCIAL SCORE CARD FOR EGGS

Points Considered	Standard Score	Club Member's Score	Corrected Score
Size	25	.....	.....
Shape	3	.....	.....
Uniformity of color	4	.....	.....
Uniformity of size and shape	5	.....	.....
Shell texture	5	.....	.....
Condition of shell	8	.....	.....
Quality (by testing) —			
(a) Size air cell	25	.....	.....
(b) Opacity	25	.....	.....
Total	100	.....	.....

EXPLANATION OF THE COMMERCIAL EGG SCORE CARD

SIZE.—Extras 26 to 28 ounces. Firsts 24 to 26 ounces. One point cut for each ounce over or under required weight in either class.

SHAPE.— $\frac{1}{4}$ point allowed for each egg.

UNIFORMITY OF COLOR.—If white, eggs should be all pure white and same shade. If brown, the color may be any shade, but the dozen should be uniformly the same color. 1-3 point allowed for each egg.

UNIFORMITY OF SIZE AND SHAPE.—All eggs must be of the same size and shape.

SHELL TEXTURE.—Free from wrinkles, spots, cracks and rough places. 5-12 point for each egg.

CONDITION OF SHELL.—Free from dirt or stain, unwashed. 2-3 point for each egg.

QUALITY.—Test with a candler. (a) Air cell very small, about the size of a dime, indicating freshness. (b) Egg must appear opaque, the yolk free from dark color, white thick, yolk barely visible. Large air cells, floating yolks or air cells, are defects. Eggs must be fresh and sweet.

DISQUALIFICATIONS.—Cracked, broken, spots, musty rots, and germs or blood rings, in any one egg, will disqualify the dozen.

REFERENCE LIBRARY OF FARMERS BULLETINS

The following bulletins may be secured free by addressing the United States Department of Agriculture, Washington, D. C. They should be in every school library. Order by number.

- No. 134 Tree Planting on the Rural School Grounds.
(District.)
- No. 155 How Insects Affect Health in Rural Districts.
(School.)
- No. 218 The School Garden.
(School.)
- No. 428 Testing Farm Seeds in the Home and in the Rural School.
(School.)
- No. 192 Barnyard Manure.
(All Clubs.)
- No. 257 Soil Fertility.
(All Crop Clubs.)
- No. 266 Management of Soils to Conserve Moisture.
(All Crop Clubs.)
- No. 406 Soil Conservation.
(All Crop Clubs.)
- No. 421 Control of Blowing Soils.
(All Crop Clubs.)
- No. 422 Demonstration Work on Southern Farms.
(All Crop Clubs.)
- No. 511 Farm Bookkeeping.
(All Crop Clubs.)
- Special Field Instructions for Farmers.
(All Crop Clubs.)
- Special Fall Breaking and the Preparation of the Seedbed.
(All Crop Clubs.)
- Special The Corn Crop in the Southern States.
(All Crop Clubs.)
- Special, A-74 Organization of Boys Agricultural Club Work in the Southern States.
(All Crop Clubs.)
- No. 278 Leguminous Crops for Green Manuring.
(Rotation Clubs.)
- No. 318 Cowpeas.
(Rotation Club and Pig Club.)
- No. 372 Soybeans.
(Rotation Clubs.)
- No. 420 Oats, Distribution and Uses.
(Rotation Clubs.)
- No. 424 Oats, Growing the Crop.
(Rotation Clubs.)
- No. 427 Barley Culture in the Southern States.
(Rotation Clubs.)
- No. 436 Winter Oats for the South.
(Rotation Clubs.)
- No. 559 Use of Corn, Kafir and Cowpeas in the Home.
(Corn, Grain Sorghum and Rotation Clubs.)
- No. 81 Corn Culture in the South.
(Corn Clubs.)
- No. 229 The Production of Good Seed Corn.
(Corn Clubs.)
- No. 253 The Germination of Seed Corn.
(Corn Clubs.)
- No. 313 Harvesting and Storing Corn.
(Corn Clubs.)
- No. 400 A More Profitable Corn Planting Method.
(Corn Clubs.)
- No. 414 Corn Cultivation.
(Corn Clubs.)
- No. 415 Seed Corn.
(Corn Clubs.)
- No. 537 How to Grow an Acre of Corn.
(Corn Clubs.)

- No. 288 Nonsaccharine Sorghums.
(Grain Sorghum Clubs.)
- No. 322 Milo as a Dry Land Grain Crop.
(Grain Sorghum Clubs.)
- No. 448 Better Grain Sorghum Crops.
(Grain Sorghum Clubs.)
- No. 552 Kafir as a Grain Crop.
(Grain Sorghum Clubs.)
- No. 48 The Manuring of Cotton.
(Cotton Clubs.)
- No. 364 A Profitable Cotton Farm.
(Cotton Clubs.)
- No. 501 Cotton Improvement Under Weevil Conditions.
(Cotton Clubs.)
- No. 431 The Peanut.
(Peanut and Pig Clubs.)
- No. 22 Feeding of Farm Animals.
(Pig and Calf Clubs.)
- No. 566 Boys Pig Club.
(Pig Clubs.)
- No. 411 Feeding Hogs in the South.
(Pig Clubs.)
- No. 205 Pig Management.
(Pig Clubs.)
- No. 438 Hog Houses.
(Pig Clubs.)
- No. 379 Hog Cholera.
(Pig Clubs.)
- No. 372 Soybeans.
(Pig, Calf and Rotation Clubs.)
- No. 718 Cooperative Shipping Associations.
(Pig, Calf and Poultry Clubs.)
- Circular No. 30 Hog Raising in the South.
(Pig Clubs.)
- No. 562 The Organization of Boys and Girls Poultry Clubs.
(Poultry Clubs.)
- No. 684 Squab Raising.
(Poultry Clubs.)
- No. 697 Duck Raising.
(Poultry Clubs.)
- No. 574 Poultry House Construction.
(Poultry Clubs.)
- No. 530 Important Poultry Diseases.
(Poultry Clubs.)
- No. 287 Poultry Management.
(Poultry Clubs.)
- No. 682 Simple Trap Nests.
(Poultry Clubs.)
- No. 200 Turkeys, Standard Varieties.
(Poultry Clubs.)
- No. 51 Standard Varieties of Chickens.
(Poultry Clubs.)
- No. 585 Natural and Artificial Incubation of Hen Eggs.
(Poultry Clubs.)
- No. 528 Hints to Poultry Raisers.
(Poultry Clubs.)
- No. 369 How to Destroy Rats.
(Poultry Clubs.)

The two bulletins following are furnished free by the United States Bureau of Animal Industry, Washington, D. C.:

Animal Industry Bulletin No. 141 (1911), Improvement of the Farm Egg.

Animal Industry Bulletin No. 160 (1913), Care of Farm Egg.
(Poultry Clubs.)

The following bulletins may be secured free by addressing the A. and M. College, Stillwater, Oklahoma:

Circular No. 16 Corn.

Circular No. 32 Cotton in Oklahoma.
(Corn Clubs.)

Circular No. 41 Insect Pests.
(All Crop Clubs.)

Circular No. 4 Chinchbug.
(Corn and Grain Sorghum Clubs.)

Circular No. 8 Suggestions for Farming Light, Sandy Soils.
(All Crop Clubs.)

78 *Oklahoma A. & M. College, Extension Division*

Circular No. 42 Shrubs and Plants.
(School District.)

Alabama Polytechnic Institute, Auburn, Alabama:

- Bulletin No. 143 Feeds Supplementary to Corn for Southern Pork Production.
(Pig Clubs.)
Bulletin No. 168 Fattening Hogs in Alabama.
(Pig Clubs.)
Bulletin No. 166 Curing Meat On the Farm.
(Pig Clubs.)
Bulletin No. 154 Fattening Beef Calves in Alabama.
(Calf Clubs.)
Bulletin No. 150 Raising Beef Calves in Alabama.
(Calf Clubs.)
Bulletin No. 177 Raising and Fattening Beef Calves in Alabama.
(Calf Clubs.)

Ohio Agricultural Experiment Station, Wooster, Ohio:

- Bulletin No. 283 Specific Effects of Rations on the Development of Swine.
(Pig Clubs.)
Bulletin No. 209 Rations for Fattening Swine.
(Pig Clubs.)
Bulletin No. 213 Potash in Growing Animals.
(Pig Clubs.)

New Mexico College of Agriculture, Agricultural Experiment Station, College Station, New Mexico:

- Bulletin No. 90 Alfalfa Pasture for Pigs.
(Pig Clubs.)
Bulletin No. 96 Alfalfa Hay for Hogs.
(Pig Clubs.)

Illinois University, Urbana, Illinois:

- Bulletin No. 126 Food Requirements of Growing and Fattening Swine.
(Pig Clubs.)
Bulletins Nos. 175-176 Economic Factors in Cattle Feeding.
(Calf Clubs.)

Missouri University, Columbia, Missouri:

- Bulletin No. 47 Raising Calves On Skimmilk.
(Calf Clubs.)
Bulletin No. 136 Feeding Wheat to Fattening Swine.
(Pig Clubs.)

Texas Agricultural College, College Station, Texas:

- Circular No. 9 Story of Three Pigs.
(Pig Clubs.)

Purdue University, Lafayette, Indiana:

- Circular No. 29 Livestock Judging for Beginners (price 10 cents).
(Pig and Calf Clubs.)

Kansas Agricultural College, Manhattan, Kansas:

- Bulletin No. 192 Hog Feeding.
(Pig Clubs.)
Bulletin No. 113 Baby Beef.
(Calf Clubs.)

University of Nebraska, Lincoln, Nebraska:

- Bulletin No. 143 Baby Beef.
(Calf Clubs.)
Bulletin No. 85 Feeding Experiment With Cattle.
(Calf Clubs.)
Bulletin No. 116 Economic Beef Production.
(Calf Clubs.)

Wisconsin University, Madison, Wisconsin:

- Bulletin No. 224 Selecting Steers for Feeding.
(Calf Clubs.)

Department of Agriculture, Pittsburgh, Pennsylvania:

- Bulletin No. 235 Beef Production.
(Calf Clubs.)

FARM AND SCHOOL LIBRARIES

All farm and school libraries should have a number of agricultural books for reference purposes. The Agronomy Department of the A. and M. College recommends the list below. These books may be secured through any reliable book dealer.

General Agriculture

How to Choose a Farm, Hunt.
The Training of Farmers, Bailey.

Textbooks in Agriculture

High School Agriculture, Mayne and Hatch.

Agricultural Botany

Flower Guide, Reed.

Agricultural Zoology

Natural History of the Farm, Needham.
Nature Study and Life, Hodge.
Birds in Their Relation to Man, Weed and Dearborn.
Methods of Attracting Birds, Frafton. Boston: Audubon Society. (Free.)
Farm Spies, Comadi and Thomas.

Soils

Soils and Crops, Hunt and Burkett.
Soils and Soil Fertility, Whitson.
The Story of the Soil, Hopkins.

Field Crops

Crops and Methods for Soil Improvement, Agee.
Productive Farm Crops, Montgomery.
Corn Crops, Montgomery.
Soiling, Ensilage and Stable Construction, Peer.

Livestock

Beginnings in Animal Husbandry, Plumb.
Principles and Practice of Judging Livestock, Gay.
Productive Feeding of Farm Animals, Wool.
Types and Breeds of Farm Animals, Plumb.
Productive Swine Husbandry, Day.
Swine Husbandry, Coburn.
Swine, Dietrich.

Dairying

Dairy Cattle and Milk Production, Eckles.
Milk and Its Products, Wing.

Poultry

Productive Poultry Husbandry, Lewis.

Rural Structures, Appliances and Engineering

Farm Structures, Ekblaw.
Practical Talks on Farm Engineering, Clarkson.

Rural Economy and Sociology

The Young Farmer; Some Things He Should Know, Hunt.
Farm Management, Warren.

KNOCKER OR BOOSTER

When the Creator had made all the good things, it seemed there was still some dirty work to do, so He made the beasts, and the reptiles and the poisonous insects; and when He had finished He still had some old scraps left over that were too bad to put into the Rattlesnake, the Hyena, the Scorpion, and the Skunk; so He put all these together, covered it with suspicion, wrapped it with jealousy, marked it with a yellow streak, and called it a KNOCKER.

This product was so fearful to contemplate that He had to make something to counteract it, so He took a sunbeam, put into it the heart of a child, the brain of a man, wrapped it in civic pride, covered it with brotherly love, made it a believer in equality and justice, a worker for and supporter of every good thing in the community and called it a BOOSTER; and henceforth mortal man has had the privilege of choosing his associates.—Anon.

WHY JOHNNIE LEFT THE FARM

[This little poem is published at the request of State Superintendent R. H. Wilson. He asks that each club member memorize it, speak it at school entertainments, in the home and elsewhere.]

Johnnie bought a little pig with money he had earned;
He named her Nell and fed her well, and lots of tricks she learned
But Nellie grew to be a sow; had piggies quite a few;
Then father up and sold them, and kept the money, too.

Johnnie took a little calf as pay for hoeing corn.
He loved that calf, and the calf loved him, as sure as you are born.
But calfie grew to be a cow, as all good calfies do,
Then father up and sold her, and kept the money, too.

Now, Johnnie loved his little pets, but father loved the pelf,
So Johnnie left his father's farm and struck out for himself.
Said Johnnie's pa, one summer day, "I often wonder why
Boys don't like life on the farm, the 'City' is their cry?"

"It always will be strange to me", continued Johnnie's pa,
It only goes to prove, though, how ungrateful children are."
When Johnnie heard what father said, he gave a little laugh,
And thought of his empty childhood and his little pig and calf.

THE CORN CLUB SONG

BY W. M. PERRY

(Tune: "Labor On." Gospel Hymns.)

Oh, the balmy days of the spring's bright flowers,
Hear the Club Boy's song by the dale's green bow'rs;
For the seed is sown with unfal'tring hand
In the bed of the fertile land.

CHORUS—

Working on, working on; in the club we take our stand,
And we'll work with a will through the sunny hours,
Working on with a faithful hand.

Soon the summer comes with its days so long,
And the fields are gay with the Bob White's song,
While the corn is plowed e'er the shades of night
Gives a rest till the morning light.

Now the golden leaves of the Autumn cheer
Tell of harvest-tide and of winter near;
For we gather now all the ears so fine
In the crib for the winter time.

In the field of life we are sowers, all,
And our thoughts the seed, and our deeds recall—
"What we sow we'll reap", says the Truth and Way.
Hence we heed what He says today.