UNIVERSITY OF KENTUCKY

COLLEGE OF AGRICULTURE

Extension Division

THOMAS P. COOPER, Dean and Director

CIRCULAR NO. 171

ANNUAL REPORT

FOR THE

YEAR ENDING DEC. 31, 1923.

Lexington, Ky.

July, 1924

Published in connection with the agricultural extension work carried on by cooperation of the College of Agriculture, University of Kentucky, with the U. S. Department of Agriculture and distributed in furtherance of the work provided for in the Act of Congress of May 8, 1914.

Letters of Transmittal

Lexington, Kentucky, January 2, 1924.

President Frank L. McVey,
University of Kentucky,

My dear President McVey:

I have the honor to present the annual report of the Division of Agricultural Extension of the College of Agriculture, University of Kentucky, for the year ended December 31, 1923. In this report will be found a statement of the various activities of the past year, also a list of publications and a financial statement by the Business Agent of receipts and expenditures.

Respectfully,

THOMAS COOPER, *Dean and Director.*

Lexington, Kentucky, January 15, 1924.

Honorable William J. Fields,
Governor of Kentucky.

Sir:

I herewith submit the annual report of the Division of Agricultural Extension, established under act of the legislature of the State of Kentucky, approved March 15, 1916, containing an account of the activities of the Extension Division, College of Agriculture, University of Kentucky, for the year ended December 31, 1923.

Respectfully,

FRANK L. MCVEY, *President.*

CIRCULAR NO. 171

Annual Report of the Extension Division, 1923

Prepared by T. R. BRYANT

Assistant Director of Extension.

The year 1923 has been one of the most satisfactory from the standpoint of results accomplished since extension work in agriculture and home economics was begun in Kentucky. This is due to several causes. The problems and the methods by which they may be solved are becoming better understood, and extension workers are receiving each year more effective cooperation in the various localities where they work because the purposes of their work are becoming more clearly understood by the public.

The testimony of the multitude of reports continually being received in the Director's office would have a tendency to make one believe that all the difficulties of farming and rural homemaking were being rapidly overcome, and in a sense this is true. The principles of soil improvement, soil management, fertilization, crop production, animal feeding and home improvement are becoming better understood and utilized by an amazing number of people, and yet an investigation of rural conditions reveals facts which show that this work has scarcely more than begun.

Contrary to what one might think, it is a fact that the average Kentucky farmer does not yet take care to test the seed he plants; he still feeds rations that are far from the best for his stock. The live stock are of such quality that they can never hope to reach the top of the market. The cows he feeds are such low producers that milk is produced at an unnecessarily high cost. He does not know which of his hens in the poultry flock are good layers and which are not. He keeps no cost accounts or records of the year's business. He works too hard in the summer and not enough in the winter. He takes very poor care of

farm machinery, and only recently is beginning to learn how to dispose of even a portion of his products in a thoroly businesslike way.

The average farm home has few conveniences to save the time and strength of the housewife, and has no luxuries such as adequate lights, running water, furnace heat and electric power, which the city dweller has come to regard as necessities, and it might be well added that due to poor lighting the average home has never acquired the reading habit which is so essential to real progress.

The sanitary arrangements leave much to be desired and such diseases as typhoid are well recognized as of rural origin.

We must understand that the above statements refer to the average farm and the average rural home. The exceptions are fortunately becoming more and more numerous.

Only the best farmers can succeed. Everyone recognizes that since the war, farming has been placed on a changed basis. Whether we like to believe it or not, farmers are in competition with each other the same as are other manufacturers or dealers.

Until recently farmers gave no adequate study to economy of production and practically none to efficient marketing. Economy in production and marketing has been the chief study of manufacturers at all times. As a matter of fact, the only farmer who can now hope to succeed is the one who studies all angles of his business as do the manufacturers in cities. There will probably always be a considerable number of farmers who barely manage to exist on their farms.

There is no panacea that will insure profit to all who engage in farming. Curtailment of production for the purpose of raising profits is a difficult thing to accomplish and even if success be attained, the success is likely to be short lived by its very nature. Efficiency in production and marketing must be studied year in and year out.

THE FARM HOME.

Our purpose, after all, in attempting to make farming profitable is to enable us to have better homes and to provide the family with greater comforts and advantages. Too much worry is expended upon the alleged fact that too large numbers of boys

and girls leave the farms and go to the cities. Perhaps most of those who go are doing the right thing. Our real concern should be to make country life wholesome and satisfying for those who by choice or by force of circumstances remain on the farm. We should also strive to make home and community life attractive enough to induce bright young people, capable of wise leadership, to remain so that rural districts will not become areas populated by the less capable while the cities draw the brightest of our boys and girls.

The average city home has good lights to read by. It has a bath tub with hot and cold water. It has cement walks, kitchen sinks and indoor closets. Its occupants regard all these as absolute necessities. The average country home has none of these, altho they could be installed at an astonishingly small cost. The price of the cheapest automobile will install running water and so remodel the average farm house that it would be an entirely different place in which to live.

If farming and country life are less desirable than city life, the cause is most likely to be found in the farm home and not in farming as a business.

It is on account of these facts that so great a proportion of the work of the Extension Division is devoted to such matters as home equipment, foods, clothing, household management and other things of direct interest to farm women and to the rural home.

LOCAL LEADERSHIP.

The county agents in agriculture and home economics and the specialists in the various branches, who travel out from the University, have found that in order to make their work properly effective they must have the support of local leadership.

The organization on the basis of community programs of work has been found to be the most effective method of approach. Under this plan each of the usual activities of the community is taken up and discussed. For example, dairying is studied by the people, a number of whom are called to meet with the agent. It is perhaps brought out that the factor which is limiting the profits is low production or high cost of production. A diagnosis of the situation probably reveals that the rations being fed

are either too expensive or are not properly proportioned. A leader is selected to represent the county agent in that locality. It is the duty of this leader to see that the directions prescribed by the agent are carried out with selected herds. Periodical reports of progress are made from time to time as the people assemble. The same plan is followed in other branches and has proved to be very effective.

At the present time it is found that progress is being made in almost direct proportion to the amount and quality of local leadership that is willing to volunteer for such service.

HOW COUNTY EXTENSION WORKERS ARE SECURED.

The University maintains two classes of Agricultural Extension workers. One consists of specialists in such branches as dairying, farm crops, soils, orcharding, vegetable growing, home economics, veterinary medicine, animal husbandry, farm management, marketing, and others. These workers have their headquarters at the University. The other class consists of county representatives who look after matters in general in their respective counties and who have the specialists at their command when necessity arises.

It is difficult for a specialist who must travel all over the State to do effective work in a county unless an agent is located in the county to see that his directions are faithfully carried out.

When the people in a county wish to have a county agent they take the matter up with the University and arrange a meeting for a representative of the University with the county fiscal court or county school board, at which the court or board is asked to set aside an amount of money sufficient to meet half the cost of such an agent.

The University provides the other half of the necessary funds and an agent is selected who is mutually agreeable to the county and the University.

It is gratifying to note that despite unfavorable financial conditions during the past year, there has been a steady increase in the number of county agents. There are now employed in the State a total of one hundred county workers.

Attention is invited to the summary reports by departments on the following pages:

County Agricultural Agent Work

County agent work is centered around the principle that the community is the foundation of the State or nation and community programs built by local people in their respective communities are the foundation and strength of a State extension program. For this reason the supervising officers have assisted to the fullest in building community programs and devising plans, forms and methods for making them most effective.

For three years previous to 1923, the agents have been urged to build community programs with local leaders in charge of each project, but not until 1923 did the plan go into full effect. These community programs have proved equally practical in every part of the state. The rich bluegrass and the hilly mountain counties use the same method of making programs that fit their local requirements.

Instead of the old system under which one man, commonly called community chairman, was burdened with the responsibility of all the projects for the community, and the county executive committee was burdened with the details of each project undertaken in the county, the new plan of community-built program provides for a large responsibility being placed on project committeemen charged with the planning and execution of work along specific agricultural lines. The work includes men, women and children, and is divided among as many local men and women in each community as there are projects undertaken in the community.

Under this plan, for example, all the project leaders in one neighborhood constitute a community committee and each member is charged with the responsibility of carrying thru one of the projects agreed upon and assigned to him. During the past year 439 such community programs were built and 2,478 local leaders were reported.

In numbers there has been a favorable development as on December 31 there were 64 counties with agents at work, three counties with agents appointed to begin in January and three counties with appropriations ready for agents. (See page 13.)

The assistant state agents have been very active in the effort to develop community work and have made many improve-

ments for keeping records and reporting. After trying several plans during the past year and studying the records of the various agents it has been decided to require each agent to furnish on forms supplied: 1st, a list of communities in the county and those having programs indicated; 2nd, a list of major and minor projects as built from the compilation of community programs; 3rd, a sketch of county with outline of communities; 4th, a list of specialists desired for the year, so far as can be determined from the projects planned; 5th, a list giving the names and addresses of the county executive committee working with the county agent; 6th, a list of county project committeemen; 7th, outline of projects with goal, leaders, results, etc.; 8th, a calendar of work by months and projects.

Such plans give uniformity of reporting, yet leave freedom in community program building. Then, in the case of a change of agents, which still remains one of our big problems, some very important information will be ready for the newcomer.

GARRARD COUNTY.

Project	Community	Goal	Result	Leader	Quality of Leader	Spec. Help
Sheep	Buckeye	6 flocks d. & c.	7	H. M. Kurtz	Good	Yes
Docking & Castrating	Bryantsville	32 flocks d. & c.	14	Mrs. R. L. Burton	A 1	Yes
	Paint Lick	5 flocks d. & c.	21	W. W. West	Good	No
	Lancaster	15 flocks d. & c.	16	W. S. Carrier	Good	No
Soybeans in Corn	Lancaster	11 dem.	21	R. L. Burton	Good	No
	Bryantsville	8 dem.	13	J. W. Gulley	Good	No
	Paint Lick	10 dem.	17	S. C. Henderson	Good	Yes
	Manse	Open	7	W. W. West	Good	Yes
Poultry (Culling)	Bryantsville	15 dem.	7	Mrs. N. T. Grow	Good	Yes
	Buena Vista	5 dem.	2	Mrs. L. Brewer	Fair	Yes
	Paint Lick	20 dem.	13	Mrs. Hall	Good	Yes
	Manse	5 dem.	2	Mrs. Tudor	Good	No
	Lancaster	5 dem.	7	Mrs. Jno. Amon	Good	Yes
	Mt. Hebron	5 dem.	3	Mrs. B. Bowling	Good	Yes
Purebred Flocks Started	Bryantsville	Open	5	Mrs. Chas. Dean	Good	Yes
	Lancaster	5 flocks started	6	No Leader		No
Junior Clubs	Paint Lick	10 flocks started	11	Mrs. Shepherd	Fair	Yes
	Lancaster	25 club members	23	Joe Aldridge	Good	Yes
	West Point	9 club members	5	Joe Carcillis	Poor	Yes

GARRARD COUNTY
Calendar of Work
February 13, 1923
Projects

1923	Junior Clubs	Sheep-docking and Castrating	Tobacco—Root-Rot	Purebred Sires	Soybean { Seed Hay	Soybeans in Corn	Poultry—Culling	Poultry—Feeding	Poultry { Purebred Flocks Started	Feltilizers—Corn	Fertilizers—Tobacco	Cover Crops	Limestone	Alfalfa	Community Programs	Conferences	Annual Report	Vacation	Fairs	Total
January	*10* 10			*5* 5				*5* 5												*20* 20
February	*6* 5	*4* 5		*2* 3				*1* 1							*6* 6					*19* 20
March	*5* 5	*11* 2	2	*3* 5	*1*				*2* 3						*2* 3					*24* 20
April	*4* 5	*12*		*1* 1	*1* 2	*5* 4			*2*				*4*							*23* 18
May	*11* 10		*5* 3		*3*	*2* 2				*2* 1	*1* 2									*21* 21
June	*7* 8		*2* 4		*2*	*4* 2									*2*					*15* 16
July	*4* 5		*2* 2				*3* 2			*1* 2	*2*			*4*						*10* 17
August	*7* 5		*1* 2				*5* 5					*2*		*2*				*6*		*13* 22
September	*7* 6		*1* 2		*1*	*3* 2	*1* 2				*1* 2	*2*					*3*			*4* 4	*19* 21
October	*8* 5					*2*		*4* 3				*3* 2							*5* 8	*23* 20
November	*12* 3		*1*			*3*		*2* 3		*3*		*2*	*1*		*3*			*5* 5		*22* 21
December	*3*		*4*			*3*											*4*		*6*	*20*
Days planned	70	7	20	14	8	15	9	15	5	6	6	6	4	6	12	4	5	12	12	236
Days worked	81	27	11	11	2	14	9	12	2	3	2	7	1	0	10	3	5	0	9	209

Roman type indicates number planned. Italics indicate number accomplished.

COUNTIES WITH AGENTS AT WORK.

December 31, 1923.

Adair	Harlan	Marshall
Allen	Henderson	Mason
Ballard	Hart	Meade
Barren	Hopkins	Mercer
Boyd	Jackson	Morgan
Boyle	Jefferson	Muhlenberg
Bracken	Kenton	Nelson
Breathitt	Knott	Oldham
Breckinridge	Knox	Owen
Caldwell	Larue	Owsley
Calloway	Laurel	Pulaski
Campbell	Lee	Russell
Carroll	Leslie	Taylor
Christian	Lewis	Todd
Crittenden	Lincoln	Trimble
Daviess	Livingston	Union
Estill	McCracken	Warren
Fayette	McCreary	Washington
Garrard	McLean	Wayne
Grant	Madison-Rockcastle	Webster
Graves	Marion	Whitley

Counties with Agents to Begin in January

Clay	Nicholas	Shelby-Spencer (Mt. Eden)

Counties with Appropriations Ready for Agents.

Grayson	Green	Hickman

An inspection of the following extracts from the rather lengthy tabulated reports of county agents will serve to give an idea of the variety of undertakings and the degree of accomplishment which has been attained by the agents during the last year:

MISCELLANEOUS EXTENSION.

No. communities engaged in extension work	439
No. voluntary leaders in adult work	1,820
No. voluntary leaders in junior work	658
Membership in county organizations	12,261
No. farm visits made by agents	36,977
No. farms visited by agents	15,694
No. home visits made	3,337
No. homes visited	2,135

Days planned .... 70 | 7 | 20 | 14 | 8 | 15 | 15 | 9 | 15 | 5 | 6 | 6 | 6 | 4 | 6 | 12 | 4 | 5 | 12 | 9 | 209

Days worked ..... 81 | 27 | 11 | 11 | 2 | 14 | 9 | 12 | 2 | 3 | 2 | 7 | 1 | 0 | 10 | 3 | 5 | 0 | 9

Roman type indicates number planned. Italics indicate number accomplished.

No. office calls relative to work	53,923
No. individual letters written	39,843
No. circular letters written	5,086
No. copies of circular letters	135,090
No. articles written for publication	4,302

MEETINGS HELD.

No. training meetings for local leaders	408
Attendance	3,565
No. demonstration meetings	5,194
Attendance	52,643
No. farmers' institutes	7
Attendance	4,395
No. extension schools and short courses	33
Attendance	4,993
No. Junior club encampments and rallies	108
No. club members attended	6,863
Total attendance	44,719
Other meetings	4,145
Attendance	290,991

SOILS.

No. result demonstrations started	1,746
No. completed	1,114
No. acres involved	10,664
No. farms using commercial fertilizer	2,757
Acres involved	41,584
No. farms using home-mixed fertilizer	234
Tons of fertilizer so mixed	4,020
No. farms taking better care of farm manures	1,012
No. farms using lime	1,276
Tons of lime used	32,421
No. farms plowing under for soil improvement	1,489

CROPS.

	No. Result Dems. Started	No. Completed	No. Acres Involved
Wheat	183	133	1,661
Oats	55	42	415
Rye	224	108	1,178
Barley	249	199	1,178
Other cereals	18	18	42
Alfalfa	249	174	1,436
Crimson clover	39	30	231
Clover	344	303	2,109
Velvet beans	19	17	8
Lespedeza	111	79	956
Pastures	117	108	1,272
Irish potatoes	24	20	400
Other crops	36	25	187
Tree fruits	585	462	1,344
Bush fruits	78	63	111
Grapes	103	75	85
Market garden	200	151	224
Flowers	41	31	16

LIVE STOCK

	No. Breed. Assns. Organ. During Year	No. Members	No. T. B. Tests Made	No. Animals Tested
Dairy cattle	16	2,111	4,082	29,383
Beef cattle	17	70	618	5,222
Sheep	2	30	31	1,600
Swine	5	157		
Poultry	12	494	1	85

MISCELLANEOUS.

No. water systems installed	53
No. heating systems installed	14
No lighting systems installed	59

Home Economics

The center of farm life is the farm home. It is the institution which society recognizes as the one which can best develop capable, worth-while men and women, therefore, whatever affects its well-being affects the nation.

Society has a right to demand that the homes which compose communities insure to their children physical health, moral stamina, and the opportunity for such education and mental development as will enable them to think thru and solve their problems. The most obvious condition which confronts the extension service in home economics is the lack of ordinary sanitary conveniences which insure physical health; hence a preliminary study was made to determine the need for focusing attention on improving these conditions. This has brought about cooperation with the county health officer and county school superintendent. Proper disposal of human waste and safe water supply for the home are primary needs in all the communities and the starting points for physical health. With the assistance and interest of the county health boards these are being obtained. There is also much to be done in making the laws of personal hygiene a part of all men's and women's habits of life. To give the farm home the best obtainable knowledge and practises in living has been the main objective in home economics extension.

The work of the home economics division is carried out along the following lines:

I. Nutrition.
II. Foods.
III. Clothing and millinery.
IV. Home improvement.

I. Nutrition.

The information available concerning the health of the children of the state leaves no doubt of the imperative need for direct teaching to girls and women of the principles underlying health and their relation to food, of the effect of its proper preparation upon its value to the body and the wise choice of food as a preventive against undernutrition.

Interest in nutrition work has been evidenced by the

increase from two nutrition groups last year to twenty-six this year, which have been carried on in cooperation with the county health boards, public nursing associations and anti-tuberculosis societies.

A. Nutrition.

The nutrition class is a direct effort to teach correct food habits and to demonstrate by the practis of these habits that the condition of malnutrition must be remedied, if the pupil is free to gain. The nutrition groups have usually been formed after the school has been inspected by a physician or nurse and those children are selected who are more than ten per cent underweight and who have had their physical defects corrected. Six counties have had the medical inspection necessary and twenty-six nutrition groups have been formed. The children are weighed weekly, receive weekly instruction from the home demonstration agent and make their own charts showing their weight curves. They have made most satisfactory progress in increasing their weight. As a rule, the instruction given the nutrition group receives the hearty support of the children's parents as well as their cooperation in seeing that their diets include the foods recommended at school.

Fayette county has made nutrition work its major subject. The schools where these classes are being carried on are all well equipped with scales and also have school lunches. A physical and dietary survey of the entire county is being conducted by the county health department. It was necessary to delay starting the nutrition groups until the medical inspection could be completed and the records made available. The interest and enthusiasm of the rural school children in the nutrition instruction is very gratifying and the parents give their cooperation. The greatest difficulty in dealing with county children is to secure the rest period.

B. School Lunches.

The number of school lunches has increased forty-seven per cent during the year, and it has been thought inadvisable to start any new school lunches without a

paid worker to prepare, serve and take care of the dishes necessary for the lunch, except in schools where the Home Economics teacher has been willing to make the school lunches one of her problems. This means that fewer lunches have been started, but they have a much more permanent foundation. Unless a school lunch is an educational demonstration from the standpoint of the formation of food and health habits and good table manners, it has no place in any school. A determined effort has been made to secure a local leader and a paid assistant for every school lunch, not only to relieve the teacher from the task of supervising the preparation of the food but to interest the mothers of the school children in the undertaking. This has been as successful as could be hoped for. The organization sponsoring this piece of work has generally been the Parent-Teachers' Association, which assumes financial responsibility for equipping it, securing food supplies and serving the lunch. In a number of communities the Parent-Teachers' Association employs a person to do the actual work under the direction of the school teacher. In other schools the fourth-year Girls' Club members prepare and serve the food, under the direction of the teacher.

The school lunch may follow medical inspection of the school children or it may precede and create public sentiment in favor of medical inspection. Its direct results are difficult to measure; they usually manifest themselves in more efficient work on the part of the pupils, fewer behavior problems in schoolroom, reduction of the under nutrition in the school and better attendance records.

The school lunch is an important but not necessarily the determining factor in securing the desirable results. It has, however, served to center community interest on the health of the children, to direct parents' attention to the food habits of their children and to demonstrate effectively the need for improved standards of food preparation in the home.

C. Milk Campaign.

Kentucky's first milk campaign was held October 22-28, the United States Department of Agriculture, the University of Kentucky and Christian County, cooperating. The need for a campaign was shown by the survey, including 2,000 school children in the county, which showed that forty per cent were more than ten per cent under-weight and that only thirty per cent of the total number habitually drank milk. The campaign was carried on according to the plan of the Dairy Division. It was a successful campaign carried almost entirely by local people; how successful, will be determined by the follow-up work that is done. The follow-up work, as it is now planned, is to be done entirely by local people, under the supervision of the County Home Demonstration Agent and Nutrition Specialist. There will be four milk-feeding demonstrations, four nutrition groups and four instruction groups carried on in the county. The enthusiasm of the pepole generally, concerning the campaign, its purpose and conduct, was very inspiring indeed, and their cooperation very gratifying. The total cost of the campaign to the county was $125. We hope to have a similar campaign in Fayette County next year.

II. Food.

A. Bread Contest.

The State Bread Contest is an annual contest conducted to create interest in more and better homemade yeast bread. The results from this year's contest, which is the third annual contest to be held, have been very encouraging. Ten county contests were held. Thirty contestants in the county contests sent bread to the office at Lexington to be entered in the State contests. All the bread was good. Three years ago, eleven loaves were sent to Lexington, not one of which was up to standard. The first and third prizes went to Daviess County and the second was awarded to Calloway. The prizes this year are trips to the Farm and Home Convention and have been given by the Northwestern Yeast Company

of Chicago and the Ballard Milling Company of Louisville.

B. Canning.

General supervision is given to all canning work done. The canning this year was below standard in quantity and quality, because of poor fruit and vegetable crops. A good many demonstrations were given and general information was distributed by the agents. Canning was carried on in twenty-three counties.

Budget canning was tried in Daviess County and proved very successful. Eighteen women planted gardens, according to the needs of their families for the whole year. The garden planning and supervision were carried on by the garden specialist. The surplus of the gardens was canned, dried, brined or stored. Twelve of the eighteen demonstrators turned in records to the Home Demonstration Agent. Each wrote a narrative report, also, about the work which was done and what it had meant to her. The woman who had the best records, as well as the best yield from her garden and results in canning, was given a trip to Lexington to attend the Farm and Home Convention. She is a woman, about 45 years of age, who has never been outside of Daviess County. The trip to Lexington was a real adventure to her. She is one of our very best leaders in Junior club work and has a big vision of what life on the fram can be made to mean to boys and girls. Apparently, it is unnecessary to go away from the farm to get "The Big Idea."

In a number of counties the girls' club members canned the food in the school garden, for the school lunch. More of this kind of community work will be attempted next year. It is significant that the number of homes influenced by instruction in canning has doubled and that the number using better methods has increased fifty per cent.

Institutional Canning.

During the summer of 1922, a request was made

from two of the public institutions of the State, the Boys' Reform School and the Central Hospital for the Insane, for help in canning the small surplus from the gardens. Demonstrations were given at both schools. At the Boys' Reform School, the general handy-man of the institution and seven boys were the group with whom the demonstration was carried on. The results of the day's work, 100 No. 10 cans of tomatoes, were so satisfactory that this year a sealing machine was bought for the plant and canning was made a real part of the work of the school.

The superintendent of the central hospital was so enthusiastic over the results of last year's work that, with the assistance of the county agent of that county, a budget garden of cabbage, tomatoes and beans was planted. One of our former canning club members was hired to plan and superintend the canning and a large amount of the kraut, canned green beans and tomatoes needed by this institution for the winter was canned by the inmates under the supervision of a trained worker at a very small cost. We hope to extend this work to some of the other state institutions during the coming year.

C. Food Work for Girls.

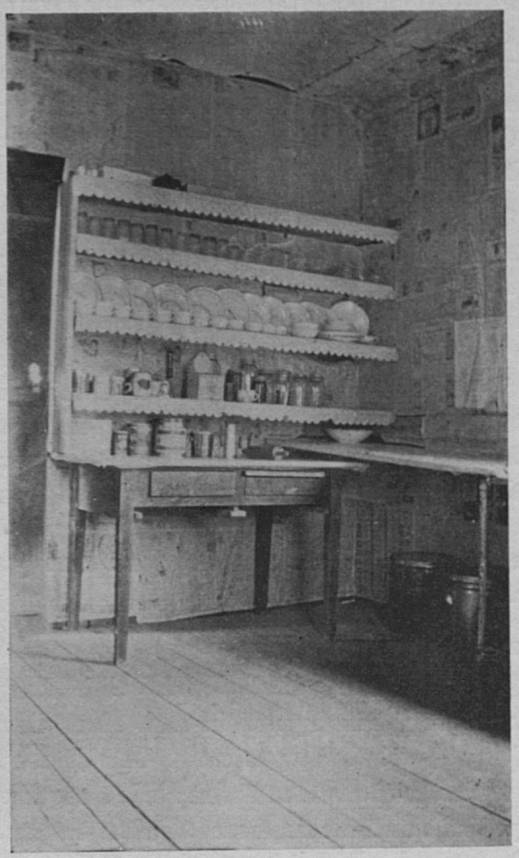
The food work in the girls' clubs has been quite discouraging. The agents, in most cases, have preferred teaching the clothing projects. One of the reasons for this choice has been that the materials required for clothing projects and the necessary equipment have been more easily secured. In some counties satisfactory equipment for food work has been secured by donations and various kinds of sales held at the schoolhouses. By using the demonstration method where demonstrations are given by the members of the clubs, very little equipment is necessary and the results are quite satisfactory.

In McCreary and Harlan counties community demonstration kitchens have been established where both girls and women receive instruction in food preparation.

III. Clothing and Millinery.

A. Clothing Efficiency.

The purpose of this work is to teach women the principles of satisfactory clothing, to improve the quality of workmanship, to raise standards in personal hygiene and health, to demonstrate the relation of clothing to health and to teach easy and time-saving methods of construction. In October, 1923, the clothing efficiency work was revised so as to adapt it more closely to the needs of the average woman and was called "Short Cuts in Clothing." It is planned to give the necessary in-



Demonstration Kitchen, McCreary County.

struction to the woman who does not know how to make clothing and to improve the standards of the woman who does. The plan of instruction is the same as that used in Clothing Efficiency, and those undertaking the project assume the responsibility of becoming community leaders in this work. Twelve counties have received the entire course, forty-seven communities have been represented, thirty-six local leaders in this work have been developed, eighty women have completed the project and have taught eighty-nine other women. One hundred eighty-eight garments have been made under the supervision of the specialist. The plan for the coming year is that the specialist will visit the local leaders who are giving "Short Cuts in Clothing" to their community, will assist them in their classes, will help to keep standards and will also begin new classes in undeveloped counties.

B. Good Taste in Dress.

This project was first developed in October, 1923, and is planned to follow "Short Cuts in Clothing." It is a training course for women who will be local leaders in the project. The method of instruction is the same as in "Short Cuts in Clothing." The purpose of instruction is to teach good taste in dress thru selection of dress material and clothing construction, the renovation and remaking of suits and dresses, and those methods of laundry and dry cleaning appropriate for use in the home and to give an appreciation of the value of color combinations and line in construction of clothes for mature women.

This project has been given in four counties; twenty-three dresses have been constructed or remade. Color and texture of cloth, and design have been discussed and illustrated. The work developed splendid interest in the community and met with unlooked for success and approval.

C. Tailoring.

Last year only one county was ready for tailoring. This year four have completed the work. The women

upon entering the class assume the responsibility of instructing some other person in tailoring. It is planned thru the training of these local leaders to have a number

Tailoring Class, Daviess County.

of persons in every county trained to carry on this project.

One woman from each community was chosen to be in the class and in most cases she had an assistant. As a result of their work, twenty-nine coats and two dresses were made. Most of the coats were exceedingly well made.

D. Millinery.

The millinery work during the past year has been carried on in the same manner as it was the year before, that is, at the first meeting a demonstration and talk on the best selection of hats was made by the specialist, and at the second meeting the women made their hats. The work was given in two or three communities in the different counties. Millinery has been given in fourteen counties, three of which are counties without home demonstration agents. In many of the counties women in the classes have taught others and some have earned

money by making hats for others. The purpose of the project is to teach selection as well as construction and it has undoubtedly resulted in raising standards. This project has also been effective in interesting women in home demonstration work and several women's clubs have been organized as a result of millinery demonstrations. About three hundred hats have been made under the supervision of a specialist, and in several counties the home demonstration agent has conducted classes without the aid of a specialist, so that during the year twelve hundred and eighty-one hats have been made.

E. Dress Forms.

Five hundred and fifty-nine dress forms have been made in connection with the work in clothing selection and construction. They have also been the means of studying the effect of posture on health and efficiency.

F. Clothing Courses for Girls.

The demand for clothing work for girls has become so urgent that the average home demonstration agent has not the time to instruct all the groups, so to meet this need in the county, the home demonstration agent has secured the cooperation of local leaders in clothing and with the advice and aid of the specialists has begun to train these leaders in organization, standards of clothing construction, information on personal hygiene, healthful shoes, care of the clothing and also subject matter. Such training schools for local leaders were begun in December and three have been held. The clothing work is conducted on the same plan as in former years. The number of girls enrolled in the club department and taking clothing courses was 4,597, of whom fifty-six per cent completed their projects.

IV. Home Improvement.

A. Home Conveniences.

During the year great emphasis has been placed upon securing such effective and inexpensive improvements in the home as will increase its comfort and pleas-

ure. Very simple types of water systems have been installed in three times as many homes this year as last and five times as many homes have been screened. Five times as many demonstrators have undertaken and completed one project dealing with "Home Health" as last year.

The work of installing home conveniences has been the major project in McCreary county. The goal set was five simple water systems—ten have been installed. The home demonstration agent writing of one of the installations says: "The best piece of work done during the year was the installation of a hydraulic ram which lifts water to an elevation of 125 feet and delivers it a distance of 600 feet into the home of an invalid woman who can hardly creep from room to room. A simple sink and drainage system adds further to her convenience. The greatest joy to me was the expression of this old woman when the cool, clear water began to flow into her kitchen. She said, with tears in her eyes, 'It does my soul good to see the water come to me.'"

Home economics extension has emphasized the importance it places upon home improvement and home conveniences by undertaking a state-wide campaign in kitchen improvement.

B. Kitchen Improvement Campaign.

Plans were made for conducting a kitchen improvement campaign in twelve counties where there were home demonstration agents. Each county enrolled sixteen women who were interested in making changes in their kitchens before May 1, 1924. The 106 kitchens in nine counties have been scored. The kitchens in the three other counties will be scored in January, 1924. Meetings will be held at the county seats in the various counties during the contest. There will be three meetings, one in February, one in March and one in April. The agricultural engineering department will cooperate and give assistance with reference to installation of water systems. County prizes are to be secured thru the local agent and the state prizes will be secured thru the field

agent. The contest will close May 1 and the kitchens will be scored after that date. A tour of each county will be made at the close of the contest so as to see all the improved kitchens and any other kitchens of special interest. It is planned that this tour will comprise one whole day, with a dinner at some chosen place. Pictures are to be taken of the unimproved and the improved kitchens.

HOME DEMONSTRATION CLUBS FOR WOMEN

The women's work has reached a point where definite results should be secured and programs of work thruout the various counties should proceed very satisfactorily. There are eighty-one home demonstration clubs in sixteen counties where there are or have been home demonstration agents. Out of the eighty-one clubs, twenty-four have received their charters and have adopted definite programs of work, copies of which have been filed. In the past, interest in the home demonstration clubs has died out, due to the fact that the home demonstration agents have not always held their meetings regularly and promptly, and the programs have not been well planned beforehand and with a definite sequence of meetings. To assist the home demonstration agents, a "Manual for Home Demonstration Clubs for Women" (Extension Circular No. 138) has been prepared, including directions for organizing clubs and suggestions for programs. The secretary's book has been printed so that satisfactory records may be kept in all the clubs, emphasizing the importance of regular meetings, and enrollment cards have been printed which are to be filled in by each club member and filed in the offices of the home demonstration agents. The sheets for reports of club meetings have been prepared, so that they may be filled out by club secretaries and mailed to the respective home demonstration agents for their files. Such reports make it possible for the agents to keep in touch with all club meetings which they do not attend.

SUMMARY OF THE WORK OF FIELD AGENTS.

Food and Nutrition—January 1, 1923-December 31, 1923.

School lunch lectures	10
Nutrition lectures	53
Home management lectures	8
Demonstrations	11
Total	82

Home Management—January 1, 1923-December 31, 1923.

Interior decoration demonstrations	22
Table setting and etiquette demonstrations	9
Clothing	7
Foods	6
Conferences with Home Demonstration Agents and Leaders for plans of work for Home Demonstration Clubs for women	9
Number of active Home Demonstration Clubs for women	81
Number of Home Demonstration Clubs having charters	24

Clothing Efficiency—January 1, 1923-December 31, 1923.

Communities given Clothing Efficiency	47
Women taught by Field Agent	80
Pupils taught by women	89
Number of leaders developed	36
Health lectures	20
Sets of tested patterns	74
Garments made	188

Women's and Girls' Clothing—January 1, 1923-December 31, 1923.

Number of meetings held	146
Millinery demonstrations	20
Dress form demonstrations	2
Tailoring demonstrations	4
Total number taught	450
Hats made	300

Report of General Clothing Project—Sept. 15, 1923-Dec. 31, 1923.

Number of clothing demonstrations given	14
Number of meetings addressed	22
Number of women taught	314
Number of local leaders for Girls' Club work trained	26

County Home Demonstration Agents' Work—1923.

It has been difficult this year on account of the public demand for economy in conduct of public business and widespread financial depression which was closely related to agricultural conditions, to secure increased appropriations from fiscal courts and to induce new counties to introduce home demonstration work. There is encouragement in the fact that while three counties were discontinued, three new counties were added, so that the total number remains at twenty-five.

The plan has been to strengthen the work in the county, to develop local leadership in girls' and women's work and to build up community organizations which offer an opportunity for the individual to develop. Special emphasis has been placed on interesting women in home demonstration work, and the results have been gratifying, for within the year the enrollment in definite projects has shown an increase of 184 per cent, 245 women as local leaders have cooperated in furthering this work, and 145 demonstration clubs have been organized, which is an increase of 61 per cent over the previous year.

An effort has been made to secure from each agent a well thought-out and carefully prepared plan for the year's work in the county. As a preliminary basis for this, each agent answered a questionaire sent to her, on the basal facts of her county. The purpose of this was to stimulate the agents to thinking directly in terms of their county's needs, to analyze conditions as they found them and to develop a program of work which would help to solve the most outstanding problems. On the basis of their analysis of the counties' needs, the program of work for the next year has been developed, and certain projects will receive greater emphasis. In Christian county, where an intensive milk campaign was conducted in October, the program of work will consist of Nutrition as a major project and Home Improvement as a minor.

The number of community houses established thru the efforts of home demonstration agents has more than trebled within the year. These are used not only for the meetings of the women's and girls' clubs, but also as a center for all community activity. These houses are indeed an encouraging indication of

the place which home demonstration work is taking in the thought and life of the community. One of the most interesting developments of this kind is the community house and rest room at Ashland, Boyd county. The building has been given by the city. Thru donations from the merchants a very attractive room has been furnished. The Ashland Women's Club has raised a fund to pay the salary of a hostess. This building serves as the headquarters for home demonstration work. The plan is to develop a municipal market in the city square just beside the community house. The plan for the coming year has been made with this in view, and also gardening, increased poultry raising, better butter campaign, the organization of a market board, etc. The rapid growth of Ashland is demanding such a market. Also, it is hoped that it will stimulate Boyd county farmers to action. Thus far they have been content to let the more progressive Ohio farmers, from just across the river, supply Ashland's needs.

The clothing work has meant much to the women and girls of the State; six thousand and eighty-one have received instruction and have constructed garments, learned the principles underlying good buying, have been taught the relation of clothing to health and what are sensible standards for dress. Every woman who has received instruction has promised to teach some other woman. The beginning has been made in helping women to consider their clothing from the viewpoint of health, beauty and usefulness, rather than from fashion. The saving to the homes, represented by the garments made, has amounted to thousands of dollars and allowed it to be spent in improving home conditions and sending girls to high schools and colleges.

A significant demonstration of the interest that "Clothing Efficiency" held for women has been made in one of the counties where many women belonging to the Home Demonstration Club worked in the field during the day, marketed their produce in the city in the early morning, and yet in the midst of their busy days have taken one day a week to work with the specialist and home demonstration agent in clothing efficiency. The enthusiasm of these women for constructing simple dresses, their interest in healthful shoes and corsets was unbelievable. Thru the cooperation of local persons and the factory, forty-six of the wo-

men in the classes were fitted with correct corsets for the first time in their lives.

The home demonstration agents have given a large share of their time in the adult work to instruction in food selection and preparation, and to child care and feeding. The number of community demonstrations in child feeding has increased from 13 to 78, 2,521 children have been benefited thru these demonstrations, 854 homes have improved their practises in care and feeding of children. The selection and preparation of food has commanded unprecedented interest among the women and 4,257 homes have definitely improved their food standards and selection. The meaning of this instruction to the health and efficiency of the family cannot be measured. Community and county fairs and exhibitions have been fostered or organized. These serve to stimulate interest in local products, educate to higher standards of production, and awaken the community to its own possibilities for development.

The Girls' Club demonstration teams have been a constant incentive to the girls; they have quickened the interest in the work and have held a challenge for each local club.

The following figures give some idea of the extent of the work done, altho neither ideals, standards of living nor attitude towards one's task can be measured in either numbers or dollars.

MISCELLANEOUS DATA.

Total enrollment, women	5,525
Total enrollment, girls	4,887
Total number of girls completing projects	2,297
Number of visits to Home Demonstration Club members	3,170
Total number of meetings	3,392
Total attendance	95,877

FOOD AND NUTRITION.

Number of schools serving hot lunch thru influence of Home Demonstration Agents	100
Number of homes influenced to serve better food	2,690
Number of homes adopting better practises in food preparation	1,567
Number of homes using more milk	1,773
Number of homes using more eggs	981
Number of homes using more green vegetables	1,544

Number of child feeding demonstrations	76
Number of children involved in the demonstrations	558
Number of homes influenced to change practises in child feeding	854
Number of homes assisted in correcting undernourishment	3,088
Number of quarts of vegetables canned	101,196
Number of quarts of fruit canned	106,911
Number of pounds of meat canned	2,085
Number of homes influenced to adopt better practises in food preservation	5,187

CLOTHING.

Number of demonstrators enrolled—	
Girls	4,591
Women	1,490
Number of garments made by club members	8,093
Number of hats made	1,281

HOME IMPROVEMENT.

Number of homes improved by screening	2,561
Number of kitchens improved by rearrangement of equipment	123
Number of water systems installed	181
Number of septic tanks installed	79
Number of girls' rooms improved	51

POULTRY.

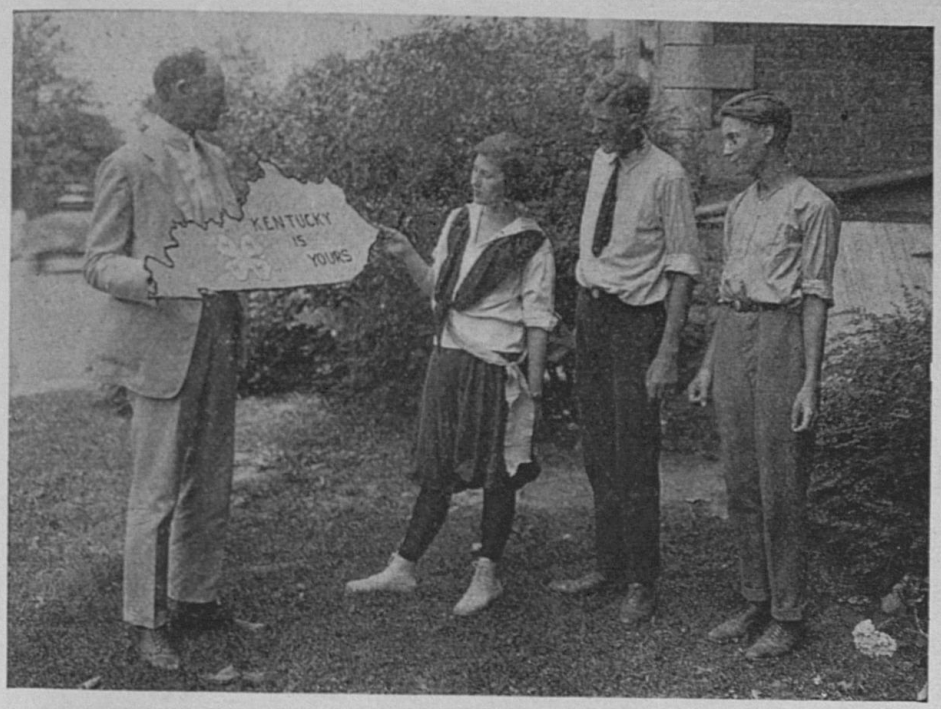
Total number of demonstrators enrolled—	
Girls	264
Women	249
Number of fowls involved	3,773
Value of fowls produced	$4,411.11
Value of products produced	$1,240.00
Number of farms culling flocks	266

Junior Agricultural Club Work

The work of the Junior Club Department might conveniently be divided into three phases: Educational, Recreational and Economic.

EDUCATIONAL PHASE.

Each club member is required to do a project in a farm or home practis and is given instruction in the best and most pra-



Dean Thomas Cooper and the officers of the Kentucky Association of Junior Clubs.

tical way to do it. The work is supervised by county and home demonstration agents and local club leaders. In the local club organization the club members learn parliamentary rules and how to conduct themselves in groups. They also learn the first principles of cooperation. Thirty camps for club members were conducted last year. Four instructors from the University and one from the Y. M. C. A. gave courses in agriculture, home economics and character building. The camps last four days. The 385 Junior Club members who attended Junior Week were given

an opportunity to become familiar with the equipment of the University. The educational phase is really the fundamental one of club work, altho the others are important.

RECREATIONAL PHASE.

Play is necessary in the life of every healthy boy and girl. The club department fosters and encourages wholesome play and games. Play is part of the regular program of every organized club. Group games, plays, stunts, songs and yells are taught in the local clubs, at the camps and at Junior Week. In the recreational program every member is given a chance to express himself.

ECONOMIC PHASE.

Each club member is required to keep an accurate account of the cost of producing his product, including the time required to do his work. When the project is complete the book is balanced, showing cost of producing the product, value of product and profit or loss.

The following figures and statistics give a fair idea of the scope of Junior Club activities:

Each agent filled out a county plan of club work in harmony with the needs of his county. The county agricultural and home demonstration agents, assisted by the county committees of club work, cooperated in adopting and promoting the plans accepted. By assembling the individual plans under proper headings, a state plan of work was constructed and arranged in calendar form.

STATE PLAN OF CLUB WORK.

A. January, February, March, April, May.

1. Club literature to facilitate and promote club work.

a. Instructions in club projects. Thirty projects are offered, twenty of special interest to boys and ten of special interest to girls. Subject matter covering all the boys' projects has been printed. Circulars have been prepared covering the subject matter for six projects for girls. A government circular is used to cover the

three canning projects, while one project for girls remains to be written and printed.

b. Literature for leaders.
Circular 117, A Manual on Junior Agricultural Clubs.
Circular 91, Hints on Programs for Junior Agricultural Clubs..
Circular 136, The Community Plan for Junior Extension Work.
The following circulars are used in the merit course work:
Circular 54, Soils.
Circular 56, Crops.
Circular 130, Marketing Farm Products.
Circular 96, Judging Farm Animals.
Circular 124, Wood Working Merit Course.
Special literature for Radio Clubs.
Collections, Books, Own Your Own Room.
Farm Management (in preparation), Home Improvement and Health.

2. Certificates of merit were issued to 258 club members who finished their work during the year.

3. Charters. When a club is regularly organized, having elected officers, local leader and submitted a plan of work, a club charter is issued. The agents reported that they had 1,250 clubs organized in the state before January 1, 1923. Fifty-two charters were issued between December 1, 1922, and December 1, 1923.

4. Plans were perfected to promote the following events, results being recorded under the month in which the event happened:
   a. Junior Week, June 18-23, 1923.
   b. Demonstration team contests. Two contests, one for girls and one for boys during Junior Week.
   c. Junior Club Camps, July and August.
   d. State Fair exhibits, September.
   e. State Judging Contest, State Fair.
   f. Fat swine show for club members, Bourbon Stock Yards, Louisville, September 7th.

g. Baby Beef Show, Bourbon Stock Yards, Louisville, November 22-23.
h. Free trips to International Live Stock Show, Chicago, December 2-9.

5. Miscellaneous aims.
a. Standardization of club projects. Thirty-eight agents will ask their club members to grow the same breed of animal or the same variety of crop adopted for their adult work.
b. Plan of work. Eleven counties plan to rank as star counties; 18 superior and 15 standard. The remainder are not able to adopt standard requirements.
c. Cooperative marketing. Thirty-four agents plan to market some of their club products cooperatively. Eighteen of them will ship in car-lots. Six counties having home demonstration agents will plan to market some of the products from the girls' work cooperatively.
d. Financing club work. Forty-two agents report banks will finance their projects.

B. JUNE.

The principal event this month was the holding of Junior Week at the University of Kentucky, June 18-23, 1923. The object of this event is to give an opportunity to club members to visit the University and learn something of its work. A program of instruction, recreation and inspiration was arranged. (Copy of program is attached.) Many of the club members who attended won scholarships offered by newspapers, merchants and bankers. Three hundred and eighty-five club members, twenty leaders and forty-eight extension agents attended for the entire week. One of the principal events of Junior Week was the State Demonstration Team Contests. Twenty-three county teams were entered in the contest from twenty-two counties. Premium money amounting to $600 was offered by Louisville business men. The counties having entries in the Boys' Demonstration Team Contest were Lewis, Marshall, Crittenden, Pulaski, Marion, Jefferson, Carroll and Boone. Counties having

Dinner time at Junior Week.

Basket Making

entries in the Girls' Demonstration Team Contest were Daviess, Ballard, Calloway, Logan, Muhlenberg, Christian, Henderson, McCracken, Simpson, Campbell, Taylor, Carroll, Jefferson, Graves and Lee.

C. JULY, AUUGUST.

1. Camp sites were inspected for suitability, sanitation and convenience and the following camp schedule was arranged:

Four series were planned with a camp manager in charge of each series, the camp manager being an assistant from the club office. The first county mentioned below, under each date, indicates the county where the camp was held, while those in parentheses indicate the counties sending delegations.

2. SCHEDULE OF CAMPS. 1923.

	Series I.	Series II.	Series III.	Series IV.
July 2-6	Marshall (Graves)	Marion	Simpson	Breathitt
July 9-13	Crittenden	Washington	Breckinridge	Leslie
July 16-20	Webster (Union, Henderson, Hopkins)	Nelson	Lewis	Knox (Harlan, Whitley)
July 23-27	Christian (Todd)	Barren (Hart)	Carroll (Trimble)	Owsley (Lee)
July 30-Aug. 3	Muhlenberg	Warren	Boone (Kenton)	Knott (Perry)
Aug. 6-10	McLean	Boyle	Campbell	Jackson
Aug. 13-17	Daviess	Pulaski	Garrard	Laurel
Aug. 20-24		Wayne		Rockcastle (Madison)
Aug. 27-31				Morgan

3. CAMP STATISTICS.

	1921	1922	1923
Number of camps held	22	24	31
Club members enrolled	1,833	2,119	2,340
Local leaders	106	113	174
Total attendance	1,939	2,232	2,514
Cooks	60	64	97
Instructors used	122	162	139
Visitors attending	6,890	14,975	30,800

JUNIOR WEEK—JUNE 18-23, 1923.

Daily Program.

6:00 A. M. Reveille.
6:40 Inspection of rooms (Mr. McKenney and Miss Burnam).
Setting-up exercises (Mr. Garside, University Campus).
7:00 Breakfast.
7:45 March to classes.

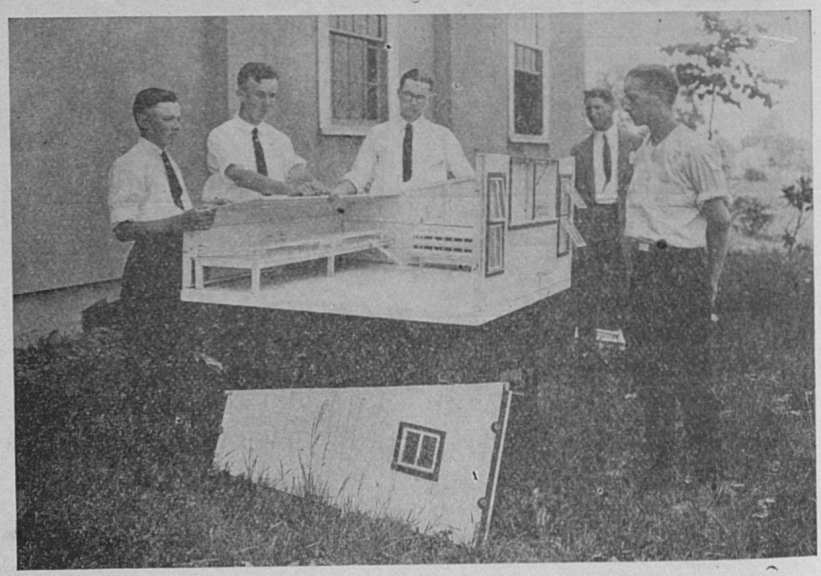
BOYS—(Mr. McKenney in charge). GIRLS—(Miss Burnam in charge)

A. M.	Monday	Tuesday	Wednesday	Thursday	Friday
8:00	Registration Patterson Hall	Lecture Dr. Funkhouser	Lecture Dr. Funkhouser	Lecture Dr. Funkhouser	Lecture Dr. Funkhouser
9:00	Each boy will be assigned to one of the following classes for the week's instruction. 1. Animals on the Farm. Prof. Good. 2. The Old Farmstead. Prof. Roberts. 3. Machinery on the Farm. Mr. Kelley. 4. Making Money from Poultry. Prof. Martin.			Each girl will be assigned to groups doing special work instructed by Home Economics Department.	
11:00		Tuesday	Wednesday	Thursday	Friday
		President McVey	Dr. Gray	Dean Cooper	Mr. Giovannoli
12:00	Dinner (Armory) Rest period.				

P. M. 1:30 Inspection of University	BOYS' DEMONSTRATION TEAM CONTEST Mr. Fish in charge (Judging Pavilion) GIRLS' DEMONSTRATION TEAM CONTEST Miss Burnam in charge (Chemistry Lecture Room and Little Theater).
4:00 Report on University Campus	Recreation, Group Games and Contests. Mr. McKenney, Director, assisted by Miss Lula M. Cassidy, Atlanta, Georgia.

5:30	Shower baths.	7:10	Moving pictures (Chapel).
6:00	Supper (Armory).	8:10	Entertainment (Chapel).
6:40	Sunset service (Campus).	9:30	Taps.

SUNSET SERVICE		SATURDAY	
Monday	Rev. Ragland	6:00 A. M.	Reveille.
Tuesday	Rev. Combs	6:30	Inspection.
Wednesday	Rev. Gray	7:00	Breakfast.
Thursday	Rev. Massie	7:30	Good bye.
Friday	Rev. Fortune		



State Champion Boys Demonstrating the Construction of a Good Poultry House.

TYPICAL CAMP PROGRAM

CARROLL COUNTY CAMP

KELLIS GROVE, KENTUCKY

July 23-27, 1923.

E. E. FISH, MANAGER

DAILY PROGRAM.

6:00 A. M.	Bugle	Star Spangled Banner
6:10	Flag raising.	
6:30	Setting-up exercises.	
7:00	Breakfast.	Songs and yells

GROUP INSTRUCTION.

Four H development.....Wm. N. Ewald, State Y. M. C. A.
Nature study .....J. F. Graham, State Department of Agr.
Special problems for boys.....Y. M. C. A. and Extension Instructors
Special problems for girls.....Y. M. C. A. and Extension Instructors
Agriculture.....W. W. Magill, College of Agriculture
Home Economics.....Miss Lulie Logan, College of Agr.

11:00 A. M.	Medicine ball.
11:15	General assembly lecture.
12:00 Noon.	
1:30 P. M.	Leaders' conference.
1:45	Play and recreation.
4:30	Rest.
6:00	Supper.
7:30	Vesper service.
8:00	Campfire.
9:30	Bed.

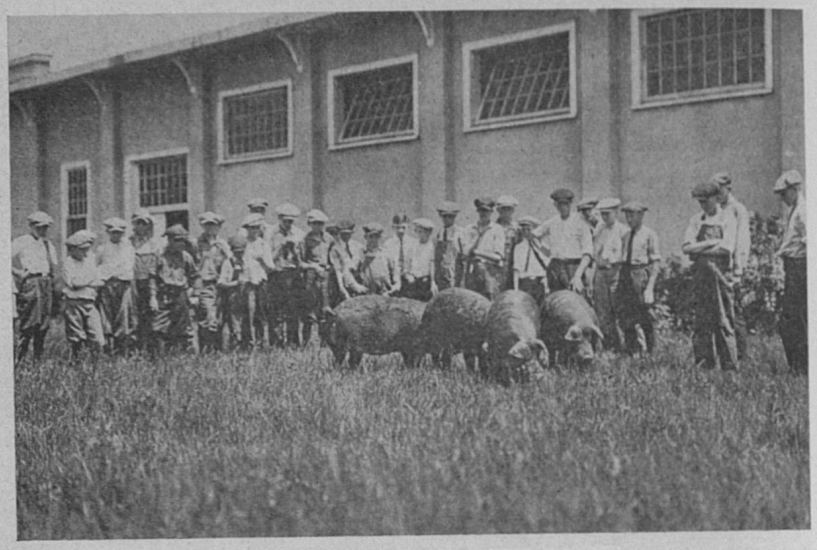
D. SEPTEMBER, OCTOBER.

1. Junior club exhibits at Kentucky State Fair, September 10-15.

   a. Seventeen hundred dollars in premium money was offered by the State Fair Association to be awarded to boys and girls with winning exhibits in swine, sheep, dairy and beef cattle, poultry, sewing, canning and foods.

   b. The Boys' Judging Team Contest was featured with teams of three members each entered from 29 counties. Three hundred and fifty dollars was offered in premium money by the State Fair Association.

2. A fat swine show for club members was held at the Bourbon Stock Yards September 7. Five car-loads of hogs were shown. We had entries from Crittenden, Caldwell,



Club Members Judging Hogs at Junior Week.

Todd, Hart, Trimble, Barren and Mercer counties. The champion car-load entered by Todd county sold for $11.50 and the average price for the sale was $10.72 per hundred.

3. Club exhibits at county fairs. Forty-nine counties reported that they had a separate club department at their county fairs. A club show was held in 171 communities. Members from the club department assisted in judging and managing many of these county and community shows during September and October.

4. Play day tours. Club picnics or play days were held in 162 communities. Twenty-eight counties conducted club automobile tours, either locally or including adjoining counties. The object of these tours was to inspect the work of other club members and to observe good farming methods of adults.

5. Achievement day exercises. Thirty-four counties held achievement day exercises and ninety-six communities held special exercises to award certificates to club members completing their work.
6. County conferences to instruct local leaders. The club department arranged a series of conferences in cooperation with the county and home demonstration agents for the purpose of instructing local leaders in the plans and methods for organizing and promoting club work in their communities. Twenty-three county conferences were arranged to be held during November, December, January and February.

E. NOVEMBER, DECEMBER.

Baby beef show club for members. Four hundred and nineteen baby beeves were entered by 260 boys and girls from fifteen counties in the second annual fat and feeding stock show, Bourbon Stock Yards, Louisville, November 22-23. The champion car-load of animals was exhibited by club members. The car-load sold for 17c per pound and the average price for all the animals shown by club members was $11.50 per hundred.

JUNIOR WORK.

Number of voluntary county, community or local leaders actively engaged in forwarding the extension program	876
Number of boys' and girls' clubs	1,250
Number of standard clubs	438
Number of community clubs	614
Number of club members completing	7,672
Number of demonstration teams trained	140
Number of members continuing in club work	9,131
Number of club members entering college this year as result of club work	150
Number of junior judging teams trained	53

PROGRAM SUMMARY.

Junior Club Work—	
Number of communities participating	1,297
Voluntary Leaders—	
Number assisting	920
Days assistance rendered	2,575

Days specialists helped	3,009
Days agents worked (office and field)	5,162
Number of method demonstrations	1,530
Number of result demonstrations	4,455
Meetings at demonstrations—	
Number	2,311
Attendance	163,845
Other meetings in relation to projects—	
Number	1,145
Attendance	65,431

ENROLLMENT OF CLUB MEMBERS, 1923.

		No. Completing	Percentage
County Agents	11,476	5,403	47
Home Demonstration Agt.	8,085	3,728	46
	19,561	9,131	46

REPORT ON CLUB ENROLLMENT AND VALUE OF PRODUCTS

1923.

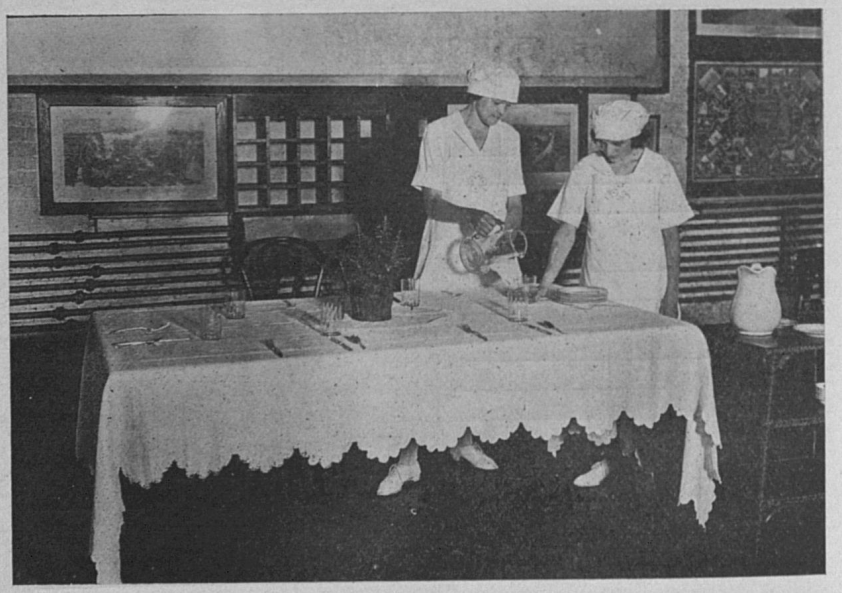
County Agents.

Project	No. Enrolled		Value	
Swine	2,538		$12,702.50	
Dairy Cattle	301		5,415.00	
Beef Cattle	394		2,969.00	
Poultry	3,979		9,113.50	
Sheep	98		364.50	
		7,310		$30,564.50
Corn	610		$13,832.75	
Irish Potatoes	417		10,694.65	
Sweet Potatoes	15		159.00	
Beans	23		976.00	
Soy Beans	54		1,325.00	
Tobacco	289		4,697.52	
Horticulture	222		1,812.50	
Food Preparation and Preservation	65		55.00	
Agricultural Economics	119			
Clothing	558		583.13	
Miscellaneous	1,124		220.18	
		3,496		$34,355.73
FARM MAKERS				
Swine	54		$570.00	
Dairy Cattle	35		5,600.00	
Poultry	268		460.00	
		357		$6,630.00
Corn	65		$2,440.00	
Irish Potatoes	26		1,209.70	
Sweet Potatoes	23		1,600.00	
Tobacco	55		2,400.00	
Horticulture	18		378.00	
Food Preservation	103		45.00	
Miscellaneous	23		24.19	
		313		$8,096.89
		11,476		$79,647.12

REPORT ON CLUB ENROLLMENT AND VALUE OF PRODUCTS FOR 1923.

Home Demonstration Agents.

Project	No. Enrolled	Value
Poultry	276	$1,240.00
Food Preparation—Bread Making, Meal Preparation, School Lunches	1,539	
Food Preservation—Fruits, Vegetables	1,266	23,598.30
Vegetables Gardens—Fruits, Market Gardening	142	5,307.47
Alfalfa	10	14.00
Irish Potatoes	5	125.00
Sweet Potatoes	5	125.00
Tobacco	30	2,500.00
Clothing	4,597	14,972.33
Household Management	45	112.00
Miscellaneous	170	150.00
	8,085	$48,144.10



Demonstration on Table Setting.

Total Enrollment

	No. Enrolled	No. Completing	Per-centage	Value
County Agents	11,476	5,403	47	$79,647.12
Home Demonstration Agents	8,085	3,728	46	48,144.10
	19,561	9,131	46	fi127,791.22

Animal Husbandry

BEEF CATTLE.

A better knowledge of cattle feeding and the more general use of pure-bred sires are outstanding needs in beef cattle production in Kentucky. The attention of the beef cattle specialist this year has been directed to these two problems.

CATTLE FEEDING.

Though much progress is being made in cattle feeding in Kentucky, a large part of the beef cattle going on market could have been fattened at less cost. Those who had a loss could have lessened it very materially or made a profit by better feeding methods. In order to disseminate a knowledge of beef cattle feeding, meetings were held thruout the cattle feeding sections of the state, visits were made to the feed-lots and six county meetings or feed-lot tours were conducted. In addition, eighty beef cattle feeding demonstrations were carried on in sixteen counties and field meetings were held in McLean, Nelson, Oldham, Madison, Daviess and Fayette counties. Timely information on feeding was given out thru newspaper articles and news stories.

When credit was given in the feeding operations for the amount of manure and pork produced, the average feeder made a profit for both winter and summer finishing of steers. On the dry-lot-fed cattle, when the cost of feed alone was considered and no credit allowed for manure or pork produced, many feeders lost money. When credit was given for manure and pork, practically every man who followed approved feeding methods made some profit. The average profit per steer in this case was $2.63 for winter feeding and $15.10 per head for those finished on grass. There is a wide variation in the cost of gains between those that used proper feeding methods and those that did not. For the winter fattened cattle, the cost of 100 pounds gain varied from $9.55 to $31.63. For the grass fattened cattle, the variation was $5.60 to $31.00 cost for each 100 pounds of beef. The excessively high costs were due to feeding too much cottonseed meal or overcrowding in the case of winter feeding, and too much corn being fed in the case of those who wintered the

cattle and finished on grass. These points were brought out by the record work and were given out to the farmers at the feed-lot meetings. The following table gives the summary of forty of the droves:

CATTLE FEEDING RECORD FOR SEASON 1922-23.

Total of 40 Droves to Dec. 1, 1923.

	Winter Fed and Fattened on Grass	Winter Fed and Fattened
No. of cattle on	912	816
Av. size of drove	57	34
No. of droves on feed	16	24
Length of feeding period, days	287	116
Av. weight per steer	833	853
Total gains per steer	338½	213½
Av. daily gain (whole period)	1.18	1.84
Av. feed cost per 100 lbs. gain	10.41½	15.03
Initial cost per cwt.	6.63	5.89½
Av. sale price	8.76	7.59
Necessary sale price over feed cost to break even	7.77	7.73
Margin received net on home wt.	2.13	1.69½
Margin needed to break even on feed	1.14	1.84
Profit or loss on feed per steer (feed alone counted)	10.54	1.49
Manure and pork included	15.10	2.63

BETTER SIRE CAMPAIGN.

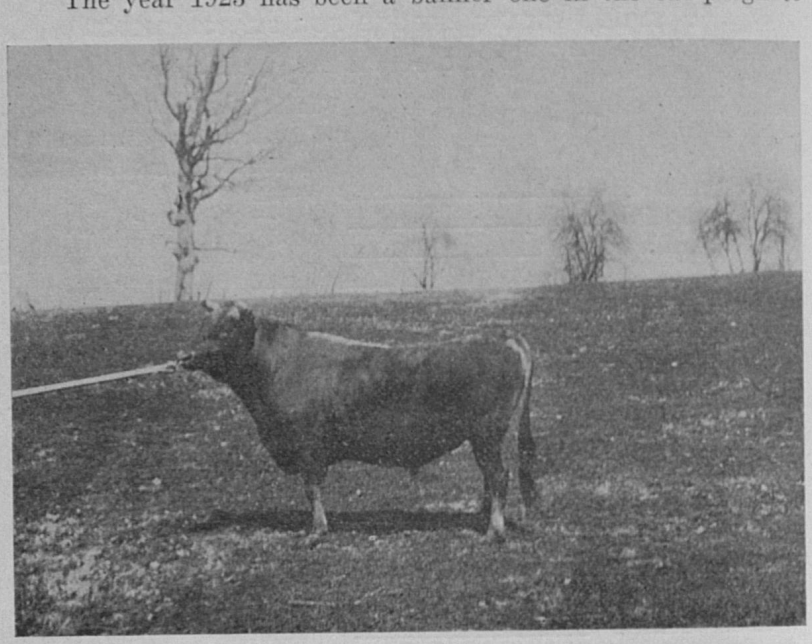
1923 was a year of marked progress for better sires work in Kentucky. The enrollment of live stock producers who used only pure-bred sires more than doubled over the previous year's enrollment. January 1, 1923, 750 Kentucky farmers were enrolled in the pure-bred sire movement. The enrollment now is 1,640. Kentucky has passed one other state and is now in third place among the states.

Intensive campaigns were conducted in Oldham and Union counties, while many other counties gave the work prominence in their programs. For the coming year, practically every county plans to do some better sire work. Some counties will place special emphasis upon bringing pure-bred sires into coun-

ties, while others will even go so far as to try to get rid of all scrub and grade sires in certain classes of live stock.

The total enrollment of farmers who have agreed to use only pure-bred sires in all live stock production is 1,640.

The year 1923 has been a banner one in the campaign to



A Bull used in Laurel County Cooperative Bull Association.

standardize Kentucky spring lambs. This campaign which was started in the spring of 1920 is divided into three divisions as follows:

1. Castrating and docking lambs.
2. Controlling stomach worms.
3. The more general use of pure-bred rams.

A survey of 1919 showed that fewer than 10,000 trimmed lambs were marketed from Kentucky. In 1922, some 60,000 trimmed ewe and wether lambs went to the various markets from this state. In 1923, the fourth year of the campaign, between 150,000 and 200,000 trimmed lambs, mostly from central and northern Kentucky, were marketed by Kentucky breeders. 236 demonstrations in docking and castrating lambs were conducted during the past year. 11,900 lambs were castrated in these dem-

onstrations; 2,340 farmers were present and had an opportunity to use the knife so they could do their own work. Aside from this, several county agents coöperated with the College by putting on castrating and docking campaigns in their counties. These agents held more than five hundred demonstrations last year. Foremost among the agents who were active in this campaign were H. F. McKenney, Grant county, W. R. Gabbert, Fayette county, C. E. Houk, Garrard county, and C. L. Hill, Nelson county. Unfortunately, many of the best sheep counties of Kentucky are without agents; consequently, it was necessary for the field man to work these counties alone.

This campaign has proved so successful that the U. S. Department of Agriculture reports that Kentucky leads the native lamb states in the campaign to eliminate the "bucky" lamb and several other states are planning campaigns modeled after that of Kentucky. Reports from every market where these lambs were marketed last year show a decided improvement in Kentucky spring lambs. Several of the leading packers have voluntarily written the College expressing their appreciation for what the work has meant in improving the product received at their plants. They say that the trimmed lambs they purchased from Kentucky at a premium of fifty cents to $1.25 a hundred were the cheapest in the long run. The wether lambs gave a higher percentage of high-class cuts and dressed out from two to four per cent more than the buck lambs.

Local buyers showed an active interest in the campaign last year. In some of the counties, local lamb buyers paid an average of one-half a cent a pound more for trimmed lambs and made money by doing so, as they had a smaller number of seconds and received a premium on their spring lambs when shipped to market in car lots. Records obtained from several markets show that there were from two to six per cent of seconds among the trimmed lambs, while the untrimmed lambs ranged from sixteen to thirty-three per cent seconds. This alone meant a considerable gain to the breeders of the state. Also, the trimmed lambs averaged from two to three pounds more than the untrimmed lambs. Records on 36,000 lambs sold on one market this year showed that the wether lambs sold for more than $2.00 above the price paid for buck lambs. This, of course, takes into consid-

eration the number of seconds, the increase in weight and the premium paid for the trimmed lambs.

STOMACH WORMS.

The stomach worm parasite is the worst pest of the sheep industry. Owing to a mild winter and a wet spring, the pest has been much worse than usual this year. This parasite was more noticeable among late lambs that had been kept over as feeders.

An intensive campaign was carried on in several Kentucky counties this year in showing farmers how to control this pest by drenching. At first both bluestone and nicotine sulfate were used; later the bluestone was given up and nicotine sulfate alone was used, as it seemed to be more efficient. Either treatment, however, gives good results if used often enough. 31,300 sheep and lambs were drenched in connection with demonstrations. About 1,600 farmers were present at these demonstrations.

Farmers who started with the treatment in time and followed the directions of the College obtained good results. Thousands of Kentucky lambs sold as tops this year that would have gone as seconds and culls had they not been treated. The experience of this year's work shows that the farmers would have little trouble in controlling stomach worms if the flocks were treated within a few weeks after lambing, again in about ten days, then twice during the summer and again in the fall. Lambs, however, should be given their first treatment when they reach a weight of about fifty pounds and the treatment should be repeated every month thereafter until they are ready for market. In this way the lambs would avoid infestation to any great extent and in most cases would go on the market in much better condition than would be possible if no treatments were given.

PUREBRED FLOCKS.

Altho pure-bred rams in Kentucky have doubled in number during the past four years, less than half the flocks of the state are headed by pure-breds; yet the ram is half the flock and experiments show that pure-bred rams are from twenty to forty per cent more efficient than grades in getting good lambs. There has not been a time during the past four years when the demand for pure-breds did not exceed the supply, and year after year

more breeders in other states are looking to Kentucky flocks for new blood. In order to meet these demands, the College has encouraged the building up of more pure-bred flocks. The plan has been to get good grade breeders who have been successful in producing lambs and wool to buy a few good, pure-bred ewes, from five to ten usually, and gradually go out of the grade business as they build up the pure-bred flocks. The College has been instrumental in establishing more than forty flocks of this kind this year. The pick of some of the best Southdown flocks in America found Kentucky homes this year.

THE SPRING LAMB IMPROVEMENT CONFERENCE.

The culmination of this year's work was the spring lamb improvement conference held at Lexington December 13th. Leading live stock men and traders from New York, Chicago, New England and the south were on the program. Several hundred breeders and traders from Kentucky were in attendance and the trading interests of Louisville, Cincinnati, Chicago and the east were represented.

SUMMARY.

Demonstrations	371	Attendance	3,920
General meetings	21	Attendance	1,940
Total	392		5,860

SWINE.

The activities of swine extension work this year have been directed toward the more economical production of pork by better feeding, breeding and management of hogs and improved methods in cutting and curing pork for the general farm.

Feeding Demonstrations.

This year 22 demonstrations have been carried on with farmers who were feeding out hogs for market, and 27 with those who were "hogging down" corn. The feeding demonstrations were similar to those of last year. They have been especially valuable this year in showing Kentucky hog feeders the value of good management and balanced rations when hog prices were low. In one community there was a difference of $1.33 per hundred on the cost of pork produced by two of the demon-

strators. One was feeding a properly balanced ration while the other was not. On the corn, tankage and mineral ration, which was fed in conjunction with good pasture, 16 pounds of pork were produced per 56 pounds of grain; while on the corn and mineral ration, fed on poor pasture, only 10 pounds were produced. The man who fed the poor ration feeds several hundred hogs a year for market. It is needless to say that the results of these demonstrations made a believer out of him and will be the means of saving him hundreds of dollars in the future.

Many of the demonstrations are being conducted in the mountains, where corn alone is practically the only ration fed. The demonstrations are influencing the farmers to use tankage and minerals in connection with corn for pork production. In addition, the value of pastures is being pointed out to the people of this section, with the result that more and better pastures are being grown and used.

The hogging down demonstrations have been carried on this year for the purpose of securing a wider use of soybeans in corn for "hogging off" and increasing the use of mineral mixtures in conjunction with this combination. These demonstrations show that the lowest profits are obtained when corn alone is hogged off. Of the 27 demonstrations conducted this year, the range in price per bushel of corn harvested by hogs was 61c to $1.12. The return of 61c was secured by a man who used no supplement with his corn. The range of pork produced per acre was 275 to 650, the average being 479 pounds.

Cutting and Curing Pork.

Fourteen demonstrations were conducted this year in showing farmers the best methods of cutting and curing pork for the general farm. As a direct result of these demonstrations and our farmers' meetings 105 farmers reported to the College that they were carrying out our recommendations. We feel sure that there were more than 300 who followed our instructions. Wherever possible at the meat cutting demonstrations, farmers have not only been shown our method of cutting up pork but have been given a chance to use the knife. We advise splitting the backbone, thus facilitating the cooling out of the carcass and converting the backbone into pork chops which are worth 5 to 10c per pound more than the old cut. Some butchers make even a

greater difference between the two cuts. If cut this way the surplus fresh meat can be more readily disposed of because the public is educated to the use of pork chops. We recommend that the upper third of the shoulder be removed and made into sausage or cured for seasoning. If the whole shoulder is cured, it becomes strong. Fourteen hundred and sixty-nine farmers were in attendance at these demonstrations.

Our method of curing meat prescribes that sorghum molasses be used in connection with salt; also that the meat remain in salt for a shorter period than is customary on the average farm. Thus the meat is tender and juicy as contrasted with the hard, unpalatable product cured with salt only. This method has met with much favor among the farmers who tried it.

Internal Parasites.

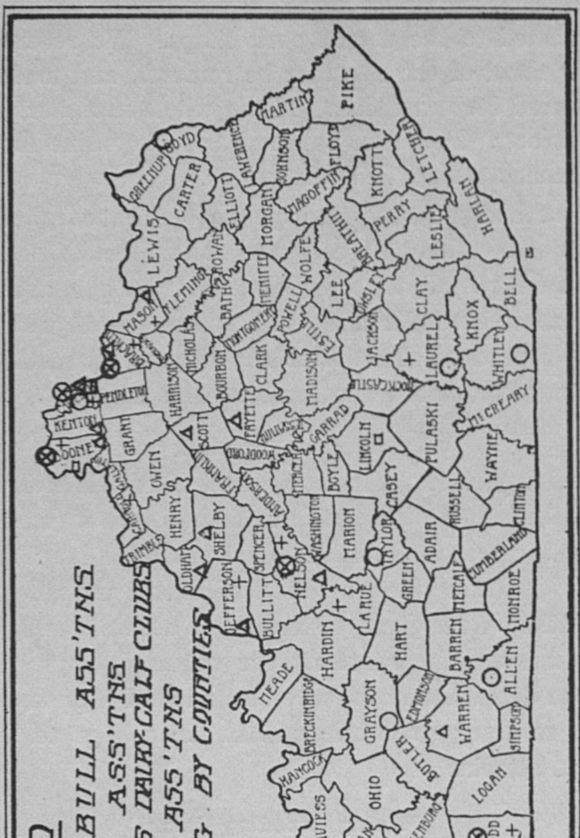
Internal parasites, the most common of which is the round worm, which inhabits the small intestines, are a great handicap to profitable pork production. Last spring a large percentage of Kentucky's hogs were infested with this parasite; hence 30 demonstrations were given on farms for administering the oil of chenopodium capsule treatment for worms in hogs. The farmers at these demonstrations were also advised how to observe the necessary sanitary precautions with their hogs to keep down subsequent attacks.

Placing Breeding Stock.

During the year assistance was rendered in placing 48 purebred pigs to be used as breeding stock in the mountains. More than 50% of these animals were given personal inspection before being shipped.

DAIRYING.

One of the principal lines of dairy extension work during the year has been the placing of purebred bulls in counties where purebred sires are scarce. Assistance was given farmers of Allen county in purchasing 4 registered Jersey sires, while in Breckinridge county two registered Holstein bulls were bought on the community bull plan, by farmers of the Harned and Cloverport communities. Cooperating with county agent Robent T. Harri-


LEGEND
○ = CO-OPERATIVE BULL ASS'NS
□ = COW TESTING ASS'NS
+ = BOY'S AND GIRL'S DAIRY CALF CLUBS
⊗ = COUNTY BREED ASS'NS
△ = OFFICIAL TESTING BY COUNTIES

son, of Harlan county, the farmers were assisted in buying 2 Ayrshire bulls on the community bull plan.

In Campbell county, 16 dairy heifers were placed with 16 boys and girls and a calf club was definitely organized.

In cooperation with county agents Link, Sutton and Wicklund, a new cow-testing association was organized with 21 farmers owning 275 cows in Campbell, Boone and Kenton counties. The Lincoln County Cow Testing Association composed of 23 members owning 425 cows was organized with the assistance of County Agent C. B. Elston.

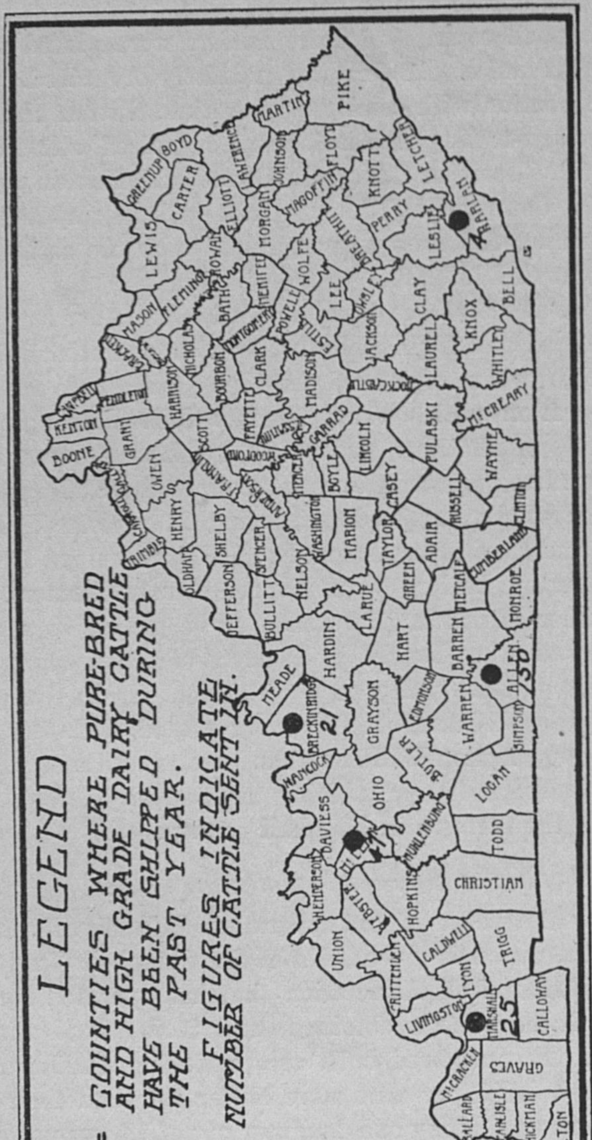
The special effort has been made during the past year to place registered and high grade cattle with potential dairymen in communities where registered and high grade cattle are scarce. Thru cooperation with County Agents Phil Watlington and Robert Ford, of McLean county, 47 registered Jerseys were placed with farmers in that county. County Agent Nageotte, of Breckinridge county, assisted in placing 21 registered Jerseys with his farmers. County Agent Fred Wilson helped locate 12 registered Jersey heifers with Laurel county farmers. The largest number of cattle (150 head) to be placed in a county during the year were bought by farmers of Allen county thru the assistance of County Agent W. G. Trice. In Taylor county 15 bred registered Jersey heifers were placed with the assistance of County Agent William Johnstone, and County Agent Harry Cottrell assisted in placing a car-load of high grade Jerseys with the farmers in Marshall county.

Value of Cooperative Bull Associations.

To show the value of a Cooperative Bull Association the following illustration is given. From the Campbell County Cooperative Holstein Bull Association that has operated for four years, records have been obtained, and it is found that the daughters of the pure-bred bulls are producing 44.45 per cent more milk and 32.01 per cent more butter fat than their dams did at the same age. Only one daughter out of 12 was not an improvement on her dam.

Value of Cow Testing Associations.

The value of cow testing associations is illustrated by figures from the Campbell County Cow Testing Association, where


LEGEND
● = COUNTIES WHERE PURE-BRED AND HIGH GRADE DAIRY CATTLE HAVE BEEN SHIPPED DURING THE PAST YEAR.
FIGURES INDICATE NUMBER OF CATTLE SENT IN.

we find that for the past year the cows have averaged 8,293 pounds of milk and 286 pounds of butter fat, clearing $85.42 per cow. When this association started in 1919, the average in milk production was 5,910 pounds of milk and virtually the same men belong to it today as did at that time. President Alfred Eisen says, "The results and improvement are the results of our work in the cow testing association." Another dairyman, Louis Clark, states, "I sold three grade heifers, two for $100 and one for $150, on the strength of the cow test records they had behind them." President Alfred Eisen during the past year averaged 9,500 pounds of milk per cow for his herd of 16 cows. The previous year these same cows produced 6,800 pounds of milk.

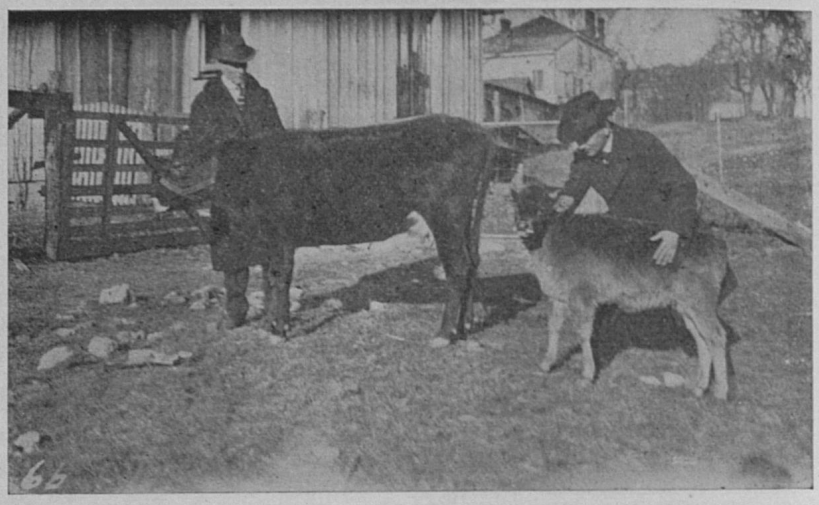
Value of Official Cow Tests.

Frank Perraut, of Perraut Brothers, Dover, doing register of merit test work under the supervision of the Extension Division, writes: "From September 10 to December 23, 1923, I sold $2,837.50 worth of Jerseys. The largest part of this stock was only a few months old. There is no question to it, unless you are doing register of merit testing you have to sell your stock pretty cheap." On February 8, 1923, Mrs. Hiram Fulcher, Pembroke, Ky,, stated: "During the past five months I have sold $450 worth of surplus bulls, one of which was a four-months-old calf that I sold for $150. This is due, of course, to the register of merit test work." Adam Kalb, Brooksville, writes: "Thank you for helping me in the register of merit test work. I did not know how beneficial it was to feed a balanced ration until I tested my four cows."

Cream Grading.

During the year the cream grading project was carried on mainly in the 14 counties in the extreme northern portion of the state. This project deals with an effort to improve the quality of cream sold by farmers, and thus raise the price received for cream. With assistance rendered by creameries and cream buyers, 28 grading demonstrations were held in 14 counties, with cream buyers and farmers present. An equal number of follow-up meetings were held in the rural districts of those counties. Records have been kept to determine the effect of this work in the territory covered. One creamery, drawing 80 per cent of its

cream from this territory, reports it is paying the farmers 8c a pound more for cream than at the same period last year, due to improvement in the cream sold by the farmers. There has been a similar campaign in various sections of America and as a result a better quality of butter is being produced, which has



A Cow and Her Heifer by a Pure Bred Sire

caused a greater consumption and a higher price. Since many Kentucky farmers supply a fine quality of cream they are profiting from the higher price. During the summer the highest prices paid by the creameries were paid for cream delivered to their buyers within four days, from the time it was produced, but during the winter, weekly deliveries are permitted. This cream grading work has resulted in benefits to farmer and creamery alike, for one day in September, 1922, six churnings of second grade butter were made at the creamery mentioned above and one churning of first grade. The same day this year, 5 churnings were made of first grade and one of second. Note the difference, a result to be attributed very largely to the instruction in clean cream production given by the dairy extension man.

Miscellaneous Work.

Addresses and dairy demonstrations have been made at movable schools in McLean, Boone, Henderson, Ohio, Grayson

and Crittenden counties. Dairy specialists have judged dairy cattle at several county fairs and acted as assistant superintendents of dairy cattle at the State Fair, and one specialist acted as superintendent of the dairy products department at the Kentucky State Fair. A dairy extension exhibit was made at the State Fair.

POULTRY.

During the calendar year of 1923 five poultry projects have been under way, namely: (1) Standardization of community breeding; (2) culling and selection; (3) farm flock demonstrations; (4) certification of poultry flocks; (5) winter egg laying project.

Standardization of Community Breeding.

This project involves the distribution of purebred hatching eggs during the spring months. One pullet is returned in the fall for each setting received, and is sold at auction. The money received for the pullets goes to pay back the money furnished by the cooperative agency for the purchase of the eggs. This is usually a bank, produce company, business firm or farmers' organization. Several of the county poultry associations financed this work during the past year, the members putting out the eggs from their flocks and dividing the money received for the pullets in the fall. This project has been carried on continuously since 1915. The sale of hatching eggs by individuals and county poultry associations has increased greatly each year as the project becomes more generally understood and adopted. This report does not include any eggs sold for cash but only those that were put out on the return pullet plan.

During the spring of 1923, 100,885 purebred hatching eggs were distributed in 13 counties. In four counties the work was financed by a local bank, in one county by the produce company and in the other eight by the county poultry associations. Most of these eggs were distributed to people having mongrel stock. White Rock eggs were distributed in 2 counties, Rhode Island Reds in 2, Barred Rocks in 6 and White Wyandottes in 3.

During the fall of 1923, thirteen pullet auction sales were held. Considerable interest was shown at each of these sales and all but a very few of the 6,525 pullets were sold to farmers

who had become interested in purebred poultry thru this project. The price received for pullets was not as high as in former years, the average being about eighty cents each. The low average was due to the fact that about twenty per cent of the pullets were culled and sold on the market. The produce dealers cooperate

A Demonstration Flock, Oldham County.

in this work by loaning coops, giving the use of their buildings and in some cases offering a premium on mongrel hens that were brought in before the sale, provided the money would be spent at the auction sale in buying purebred pullets.

As a direct result of the standardization program, 34 county poultry associations have been organized during the past four years. The three purposes of these associations are: (1) The study of up-to-date methods of poultry keeping, (2) holding an annual poultry show, and (3) the sale and marketing of hatching eggs and breeding stock. The smallest number of members in any one of these associations is 18 and the largest 103. The members are practically all farm men and women who have become interested in poultry thru the standardization work.

Educational work of the associations is becoming very popular. One association held a three-day poultry school, where talks and demonstrations were given each day by a poultry specialist from the College of Agriculture. Other associations held tours to study the successful methods being practised by the members. One assocation held these tours once each month thruout the summer. Others held as high as three and four tours during the summer months.

The county associations form a nucleus from which the county agents and poultry specialists may develop the poultry projects in the respective counties. The county associations have grouped themselves together into a Kentucky Poultry Association which has a program devoted to the advertising and development of the poultry industry in Kentucky and legislation that is favorable to the poultry industry.

Culling and Selection.

In many sections of the state culling is becoming a general practice with the farmers. For that reason new territory is sought out each year, either by going into counties where demonstrations have never been held, or into new communities in counties where the work has been carried on before. As a result of this method most of the people reached in 1923 were not familiar with the work. The demonstrations are given in such a way that anyone attending can go home and cull his own flock.

This year the culling campaign was carried on between July 16 and September 12. During this time the poultry specialists held 273 culling demonstrations in 52 counties. There were 4,076 people in attendance at these demonstrations, 14,367 hens were handled and 4,440 discarded as culls. The demonstrations were given in 8 counties which had no county agents, in order to introduce extension work to the people. Two of these 8 counties have made appropriations for county agent work since the close of the culling campaign.

In addition to the demonstrations given by the poultry specialists, the county agents gave 580 demonstrations. There were 6,490 people in attendance at the demonstrations, 34,900 birds handled and 10,618 marked as culls. Also, 1,086 farmers reported that they culled their own flocks by using the method learned at the demonstrations they attended this year. Doubtless

several times this number culled their flocks, but failed to report the fact.

The following report received from one county shows the results that can be expected from well directed culling work:

"A certain produce house in Maysville has bought over 4,000 hens while the culling campaign was in progress in Mason

A Culling Demonstration.

county and only six eggs were obtained by the firm from these hens while in its possession. The hens were kept for a week to ten days and in some cases for two weeks before being shipped to Cincinnati and were fed well and had every opportunity to lay while under the care of this firm. In previous years this same firm got a large number of eggs from the hens that the farmers sold as "culls." This proves that the farmers in Mason county had been selling good hens to the produce men during August and September, and not until this year have they found out what to sell. This information came from the culling demonstrations (42 in number) which were held in Mason county during August and September."

The following report from a county agent shows the result of several years of work in one county: "Culling has become a general practis in this county. Most purebred flocks are culled as a general practis and an average of about 20 per cent are discarded annually."

Farm Flock Demonstrations.

During the year 1923, one hundred and thirteen farmers in 37 counties in the state, have kept complete cost account records on their poultry flocks. These flocks serve as demonstrations of the proper methods of housing, feeding, breeding and flock

After the Poultry Specialists' Visit—Ready to Remodel the Old House.

management in their respective communities. Sixty-six of these farmers have completed their records for the year. These farms are visited in tours and field-day meetings that are held thruout the year. During the past spring six field-day meetings were held on demonstration farms to study proper methods of incubation and brooding. The attendance at these meetings ranged from 35 to 150 persons. The program usually included an inspection and study of the methods used on the farm where the meeting is held, during the morning, and talks and discussions during the afternoon. Local poultrymen are urged to appear on the program whenever possible.

Certification of Poultry Flocks.

This is the second year for this project. It was undertaken in order to improve the quality of stock and increase the egg production of the poultry flocks in Kentucky.

The project consists of the selection and mating of special breeding pens and the distribution and sale of cockerels produced from these pens. Certification is limited to farmers who

have served as demonstrators for at least one year and secured a satisfactory egg production. The flock is gone over carefully during October and November, at which time the outstanding, high-producing hens of the flock are banded with a sealed leg-band on which is stamped, "Certified U. of K. 1923." These

A Demonstration Flock, Hopkins County.

certified hens are mated to a male bird out of high producing blood lines to produce cockerels which are eligible for certification. Cockerels from this mating that show exceptional vigor, good breed type and productive qualities are certified and are available in turn for distribution in the state.

During the fall of 1923 hens have been certified in 48 of the 113 demonstration flocks. Sixteen of these certified flocks are White Leghorns, 10 Barred Plymouth Rocks, 6 Rhode Island Reds, 5 White Wyandottes, 7 White Plymouth Rocks, 3 Brown Leghorns and 1 Buff Plymouth Rock. These flocks are distributed in 29 counties.

Winter Egg Laying Project.

During the winter of 1922-23, 1,407 farm flocks in the state were entered in the winter egg-laying project. The owners of these flocks kept production records thruout the five winter months and served to demonstrate proper methods of feeding

and housing in their respective communities. As a result of this project and the demonstration flock project a large number of new poultry houses have been built and many old ones remodeled. A number of persons who enrolled their flocks last year in the winter egg laying project have agreed to serve as demonstrators for the coming year.

Poultry Housing Demonstration.

Monthly poultry pointers containing timely suggestions are sent thruout the year to each of the persons enrolled in the winter egg laying project. The county agents report that this project has done more to stimulate proper methods of housing and feeding than any other work they have undertaken. It is also creating considerable interest in record keeping, which in time will be applied to the rest of the farm the same as they are now doing with their poultry.

Miscellaneous Work.

Besides the work with the five projects that are now under way, the poultry specialists gave talks at 163 meetings, to a total attendance of 8,959 farm men and women. These figures do not include culling demonstrations. Seven hundred and sixty-five farm visits were made, 223 of these being to demonstration farms.

During the summer, 26 caponizing demonstrations were

held to give this work a trial. Figures will be obtained as soon as these capons are sold and if this phase of the poultry industry proves profitable, more work will be done along this line.

In order to interest farmers in the construction of suitable houses for their poultry, five poultry house construction demonstrations were held. At these demonstrations a house is actually built by those attending, under the direction of the poultry specialists and the county agent. Before the demonstration, the foundation is put in, the lumber obtained and as much as possible cut ready to use. More of this work will be carried on in the future.

In order to obtain some definite information on satisfactory methods of raising turkeys, turkey demonstration flocks have been established. Turkey brooding records were kept by 35 persons well distributed in the state. The information contained in these reports will be tabulated and used in future recommendations to turkey raisers.

VETERINARY WORK.

During the last year the work of the extension veterinarian has been carried out on the same general plan as in previous years. Emphasis has been given in particular to the importance of farm sanitation and other preventive measures for the control and prevention of infectious, contagious and parasitic diseases of live stock.

Educational work on tuberculosis eradication, since the last report of the extension veterinarian, has been carried on in several different counties in the state, namely: Todd, Henderson, Boyd, Caldwell, Trigg, Graves and Mercer. This work consisted principally of lectures, illustrated with moving pictures and demonstrations that would bring out the economic importance of the disease and the relation between bovine and human tuberculosis, together with an explanation as to the method and plan by which the cattle in a given county may be tested officially by federal and state men or by local veterinarians authorized to make official tests.

Considerable time has been given to the problem of infectious abortion in cattle and swine. The work on this disease has been carried out in herds on farms where the disease actually existed. Our method of procedure has been to visit the farm, se-

cure a history of the herd in which abortions have occurred and collect blood for laboratory tests. In those cases where it was demonstrated that the trouble was of an infectious nature owners were advised as to the application of sanitary and other preventive measures.

Animal Showing Clinical Evidence of Johnne's Disease which was Later Confirmed by Bacteriological Examination.

Among the other diseases and conditions of animals which the extension veterinarian has been called upon to handle, either thru county agents or directly from live stock owners, are to be mentioned, Johne's disease, or infectious bacterial enteritis; black scours of cattle, the control and prevention of roup and chicken pox in chickens by vaccination, outbreaks of forage poisoning, hog cholera, black leg, infectious mastitis of cattle, and various forms of parasitic infestations of swine and sheep.

Interest in the sheep industry has resulted in frequent and numerous requests for information as to the cause and prevention of diseases in sheep. The parasitic diseases in sheep which have given the most trouble are stomach worms, nodular disease and lung worms. The treatment of sheep for stomach worms has been worked out quite satisfactorily. Lung worms in sheep are very prevalent. Since there is no satisfactory treatment, the prevention and control of the disease becomes one of strict farm

sanitation and pasture rotation. The same is true for nodular disease.

The visits to farms and counties where losses of live stock from disease had reached serious proportions, have made it possible to hold post-mortem examinations and to collect material for laboratory examination that the true nature of the trouble might be determined as definitely as possible.

SUMMARY OF VETERINARY EXTENSION WORK.

Counties visited	47
Total number of visits to counties	110
Consultations	815
Farms visited	147
Consultations with veterinarians	108
Consultations with County Agents	79
Post mortems held in field	32
Meetings addressed	49
Farms disinfected	2
Attendance at meetings	5,853
Counties in which tuberculosis eradication work has been done since the last report	7
Herds tested for contagious abortion of cattle	23
Number of head tested	252
Herds of swine tested for contagious abortion	6
Number of swine vaccinated	172
Herds vaccinated for Black-leg	1
Number of head vaccinated	8
Herds tested for Johne's disease	1
Number tested for Johne's disease	34
Junior Agricultural Camps attended	2
Forage poisoning, herds	2
Herds cleaned up of intestinal parasites	2
Herds vaccinated for Cholera	3
Number of head vaccinated	79
Fowls vaccinated for roup	450
Demonstrations of the removal of round worms in swine	195
Veterinary meetings attended	1
Extension Workers' Conference attended	1
Conferences on contagious abortion attended	1

AGRONOMY

Soil Improvement.

Work in soil improvement is carried on under the following projects:

1. Long-time rotation work.
2. Soil erosion control by terracing.
3. Use of limestone.
4. Use of acid phosphate.
5. Use of mixture of acid phosphate and small amount of limestone.
6. Use of rock phosphate.
7. Conservation of farm manure.
8. Winter cover crops.
9. Legumes for soil improvement.
10. Drainage demonstrations.

In many cases, several of these projects may be combined in a demonstration; as, for example, long time rotation work, the use of limestone, acid phosphate, legumes and manure. However, there are cases in which only a single demonstration is undertaken. Some of the typical results of soil improvement work are given below:

Use of Soil Experiment Fields as Demonstrations.

While these fields are conducted by the Experiment Station, they have served as highly effective demonstrations. A series of meetings were held at some of the soil experiment fields in the latter part of May and the early part of June, at which farmers were shown the results of the various methods of soil treatment and at which talks were given on soil improvement. Meetings were held at the Greenville, Hopkinsville, Russellville and Campbellsville fields, with average attendance of 200.

The results shown on the Hopkinsville field are especially noteworthy. The wheat yields of Christian county have been low for a number of years and farmers generally believed that there was some large factor aside from fertility that was causing the low yields. The experiment field was established primarily to study the causes and to find a remedy if possible. The first crops were harvested this year. The following results were obtained on wheat.

In the spring of 1922, one piece of ground was treated as follows: Ground limestone was applied at the rate of two tons per acre and acid phosphate at the rate of 200 pounds per acre. The ground was seeded to cowpeas, which were turned under, followed by wheat with 200 pounds more of acid phosphate. Yield of wheat, 32.2 bushels per acre. (Currell's Prolific.)

At the same time four pieces of ground were limed at the rate of two tons per acre and treated with 400 pounds of acid phosphate per acre. The four pieces were planted to corn, tobacco, soybeans and oats, respectively. All these crops were harvested. The land was broken after oats and disked after the other crops. Currell's Prolific wheat was sown after all of them at the same time, 200 pounds of acid phosphate per acre being used at seeding time. The yields of wheat were:

1. After corn ..... 9.3 bu. per acre
2. After tobacco ..... 16.9 bu. per acre
3. After soybeans ..... 10.6 bu. per acre
4. After oats ..... 13.2 bu. per acre

Compare these yields with 32.2 bushels following cowpeas turned under.

These results show conslusively that the lack of plant food is a big factor in keeping down yields on this soil. Mos tof the soils of the county need not only lime and phosphate but nitrogen, which must be gotten by growing legumes.

On these fields clover was a practical failure where limestone and phosphate were not used, while good crops were grown where they were used.

Meetings were held in the fall at the Fariston and Mayfield fields. County agents take many parties of farmers to the fields for inspection.

An exhibit of the results on the Fariston experiment field was made at the Laurel County School Fair at London, September 29, at which there was an attendance of about 3,000 persons. The exhibit consisted of actual crop yields from an untreated plat and the one treated with limestone and acid phosphate. The following tabulation was distributed to the visitors to the exhibit. The accompanying photograph shows the corn yields exhibited.

Results from Limestone and Acid Phosphate on Fariston Experiment Field.

Crop Increases and Value of Increases on Limed and Phosphated Land

Treatment	Corn, bus. per acre, average 7 crops	Soybean hay, lbs. per acre, average 7 crops	Wheat, bus. per acre, average 4 crops	Clover hay, lbs. per acre, average 6 crops	Value* of crops	Cost of treatment	Net return per acre	Per Ct. interest on investment
Limestone and acid phosphate**	39.4	3,367	12.1	1,554	$65.26			
No treatment	9.4	1,109	3.3	64	15.98			
Increase for LAP***	30.0	2,258	8.8	1,490	49.28	$15.00	$34.28	228

*Corn, 60c per bu.; wheat, $1.00 per bu.; soybean and clover hay, $12.00 per ton.
**Limestone, 2 tons per acre per rotation, $5.00; acid phosphate, 800 lbs.
***LAP=Limestone and acid phosphate.

After two rounds of rotation, limestone is left off. There should be enough lime in the soil to last from 16 to 20 years.

After two rounds of the rotation, phosphate has been reduced to one-half of the former application.

A similar demonstration was made at the State Fair, using the average of nine experiment fields. The following tabulation was given to the visitors of the exhibit:

Results from Limestone and Acid Phosphate on Nine Kentucky Experiment Fields.

Crop Increases and Value of Increases on Limed and Phosphated Land

Treatment	Corn, bus. per acre, average 63 crops	Soybean hay, lbs. per acre, average 54 crops	Wheat, bus. per acre, average 63 crops	Clover hay, lbs. per acre, average 64 crops	Value* of crops	Cost of treatment	Net return per acre	Per Ct. interest on investment
Limestone and acid phosphate**	42.8	3,869	17.7	3,294	$86.36			
No treatment	31.2	2,419	8.0	1,052	47.55			
Increase for LAP	11.6	1,450	9.7	2,242	38.81	$15.00	$23.81	159

*Corn, 60c per bu.; wheat, $1.00 per bu.; soybean hay and clover hay, $12.00 per ton.

**Cost of treatments: Limestone, 2 tons per rotation, $5.00; acid phosphate, 800 lbs. per acre in 4 year rotation, $10.00; 600 lbs. per acre in 4 year rotation, $7.00. These costs conform approximately to present prices.

After two rounds of a rotation on the experiment fields, limestone has been left off. There should be enough lime in the soil to last from 16 to 20 years.

After two rounds of the rotation, phosphate has been reduced to one-half of the former application.

The Lone Oak (McCracken county) Experiment Field was badly infested with wild onions when work was begun on it in 1913. The rotation of corn, soybeans, wheat and clover and the methods of culture employed have failed to reduce the infestation appreciably, even on the plots producing the heaviest yields of crops. Experimental work on the field will be suspended and an effort will be made to eradicate the onions by fall plowing and intertilled crops. This is a demonstration that is arousing much interest and will, if successful, be of great value, for there is much land in western Kentucky heavily infested with onions.

Soils Demonstrations with Farmers.

Dr. R. E. Stephenson, extension specialist in soils, re-

signed, effective April 1, and was succeeded by Mr. S. C. Jones August 1. Dr. Stephenson made special efforts in Daviess, Henderson, Muhlenberg and Oldham counties to encourage the use of rock phosphate on farms where limestone could not be used. About 200 tons of rock phosphate was used in these demonstrations in connection with manure.

Marls for Liming Soils.

A highly important piece of work done by Mr. Jones was the discovery of the value of Silurian marls for liming soils, with the subsequent survey of their outcroppings and analyses of samples by the Chemistry Department of the Station.

Marls are soft, clayey or chalky materials, rich in lime and magnesia which, like burned lime, slake down very readily when exposed to weathering agencies.

Mr. Jones, on September 20, 1924, while working with Mr. C. L. Hill, county agent in Nelson county, observed and commented to Mr. Hill about how sweet clover and alfalfa were growing so luxuriantly on the slopes and flats below these clay beds. At this time Mr. Hill made known the fact that he had previously had two samples of these marls analyzed at the Experiment Station and that one of them contained calcium and magnesium carbonate to the extent of about 58 per cent.

A further investigation of these marls was immediately begun. Samples were collected from various outcroppings of the extensive marl beds in different sections of Nelson county which, on analysis, were found to be rich in calcium and magnesium carbonates, which will be referred to in this report as calcium carbonate.

On September 26, six days later, Mr. Jones visited Lincoln county and was informed by C. B. Elston, County Agent of Lincoln county, that one farmer in his county, Mr. J. T. Rigsby, had begun the previous year to apply these marls to his land. On visiting Mr. Rigsby's farm it was found that he had limed about 8 acres of land, then in corn, with Silurian marls. The corn on the marled land was apparently decidedly better than that on the unmarled land. Mr. Rigsby said that the county agent of Garrard county several years previously had collected samples of marls from his old farm two miles north of Preachersville in the southern edge of Garrard county which, when analyzed,

were found to be richer than the Nelson county marls had been found to be. Mr. Rigsby stated that still more recently his brother, while a student at Berea College, had analyzed samples of marls from the same locality and found practically the same content of these constituents.

Since learning these facts, field and laboratory studies of the calcareous clay or marl beds found in the Silurian formation in some twenty counties in Kentucky have been made with a hope that these calcareous clays might contain lime enough to take the place of ground limestone or burned lime for liming the soils in the communities where these marl beds are found. We are pleased to say that our hopes have been fully realized as we have found more or less extensive marl beds in every county containing Siulrian rocks where wehave been, rich enough in calcium carbonate to be economically used in liming soils.

The Silurian formation in Kentucky occurs, to a greater or lesser extent, in some twenty-four counties lying immediately around the border of the Bluegrass region from Lewis county on the Ohio river on the east to Jefferson, Oldham and Trimble counties on the Ohio river on the west, except a section including a part of Marion, all of Boyle and a part of Lincoln counties. A number of these counties, namely, Trimble, Oldham, Jefferson, Bullitt, Nelson, Lincoln, Garrard, Madison, Estill, Clark, Montgomery, Bath, Fleming and Lewis, contain large areas where Silurian rocks furnish the soil formations and surface outcroppings and the soils in more than half of this area are badly in need of lime, while the adjacent territory contains hundreds of thousands of acres even more in need of lime.

The Silurian formation is made up of beds of limestone containing varying amounts of calcium and magnesium carbonates, varying in thickness from locality to locality and at different horizons from a few feet to some 40 feet in the thickest beds. These limestones are interbedded with clay or marl beds that vary likewise in thickness from a few feet in some sections to 40 to 100 feet in thickness in other sections, with horizons coming in, in practically every locality, especially on the hillsides along streams, of a thickness of 10 to 15 feet or more.

These clays or marls contain both magnesium and calcium carbonates with other constituents such as calcium sulfate, mag-

nesium sulfate with potash in many instances present as insoluble silicate.

These marls weather very readily and extensive exposures are often seen in the form of badly gullied or barren, denuded lands that are considered by the owners as worthless possessions.

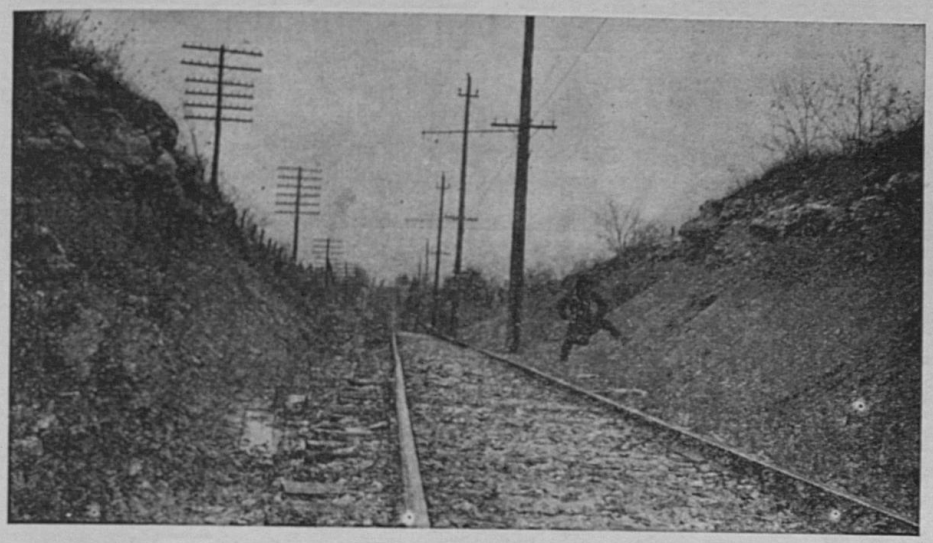


Fig. —. Marl bed 12 ft. thick (Waldron Shale) just west of Judson Station on Louisville-Shelbyville Interurban line in Jefferson County. Sample from this bed had a neutralizing value equal to 60.1 per cent calcium carbonate.

Extensive areas of this kind are found in parts of Lincoln, Garrard and Madison counties. In fact, such exposures to a greater or less extent are easily found in the hillsides and along the roadsides in every county where these clay beds occur.

The samples of clays collected in Estill county were practically all collected from what is known as the Estill Clay Bed (very low in lime) which outcrops in the central part of the county. On the west side of Estill county will be found marl beds outcropping lower down in the formation which are much richer in lime. Only one sample was collected from the lower beds. It contained 37.7 per cent of calcium carbonate. The Estill beds are also developed in the counties north of Estill county. Several samples from these poor beds are included in those from Clark, Fleming and Bath counties.

The chief advantage in marl over ground limestone in liming soils is that they can be dug out and spread without grind-

ing, thus entailing no expense on the part of the farmer other than his own effort, when found on his own farm. If obtained from his neighbor's farm, this expense should be very small.

As these marls contain, on an average, about half as much lime as ground limestone, they should be spread at about twice the rate of ground limestone. Where two tons of ground limestone would be used, the marls should be spread at the rate of about 4 tons per acre.

Calcium Carbonate, or Limestone Neutralizing Value, of Marls from the Counties Surveyed.

County	No. Samples Analyzed	Average Calcium Carbonate, or Neutralizing Value, Per Cent.*
Bath	11	32.6
Bullitt	3	66.4
Clark	6	35.7
Estill	10	10.2
Fleming	15	28.1
Garrard	7	55.9
Henry	3	59.4
Jefferson	9	60.2
Lewis	7	35.2
Lincoln	17	51.7
Mason	4	35.5
Marion	1	60.1
Montgomery	10	48.6
Madison	11	54.4
Nelson	19	40.9
Oldham	11	58.6
Pulaski	2	60.8
Shelby	3	50.1
Trimble	4	51.9

*From analyses made by the Chemistry Department of the Experiment Station.

Terracing and Drainage.

Some very important demonstration work has been done on terracing and drainage by Mr. E. G. Welch. It is believed that terracing should be generally used in all parts of Kentucky where the soil is at all subject to washing. The results of dem-

onstrations thus far have been highly satisfactory. The following excerpt from the reports of Mr. Welch will serve to show the importance of this work.

Mr. Welch has assisted county agents with terracing demonstrations in nine counties, all but one being in western Kentucky. These counties are McLean, Calloway, Marshall, Christian, Breckenridge, Boyle, Daviess, Hart and Powell. County agents in Christian, Calloway, Hart and Marion counties have put on terracing demonstrations without the aid of a specialist.

The results of two terracing demonstrations in Christian county will serve to illustrate the results secured from the majority of terracing demonstrations. In the fall of 1922, with the cooperation of County Agent H. G. Cress, a terracing demonstration was held on the farm of W. W. Woosley, fourteen miles from Hopkinsville on the Princeton road. A very fertile field having a red clay soil and an average grade of 10 per cent was staked for a mangum or broadbase terrace. During the demonstration the two upper terraces were constructed. In the spring of 1923 Mr. Woosley completed the remainder of the terraces plowed the ground and set the field to tobacco. The owner of this land, Mr. Woosley, had been afraid to break the sod on the field on account of the probable erosion, but with the field terraced, he reports that even tho there were several heavy rains during the growing season, there was practically no erosion on the terraced land, while adjoining fields with much less grade, were badly gullied.

County Agent Cress established another terracing demonstration on the farm of H. E. Bebee, of Pembroke, Ky., in the summer of 1923. The field of eight acres was terraced with five mangum terraces, each terrace having a slope of four-tenths of a foot per hundred feet. The land had an average grade of 5 per cent. The soil is a dark clay loam that washes very easily. Mr. Bebee says he had tried every known method of handling the field without terracing and could not possibly control erosion. Just after the terraces were completed an unusually heavy rain washed out bridges over small streams and flooded corn fields on the farm but caused very little damage to the terraced field. Mr. Bebee plans to terrace practically every field on his farm.

Drainage.

Seventeen special surveys were made for drainage demonstrations in ten counties during the past year. In addition to these demonstrations 30 other farms were visited with county agents in connection with drainage work.

Terracing Demonstration in Hart County.

The cost of drainage work has varied from $35 per acre for ten acres in Rockcastle county, to $64.75 per acre for only two acres in McLean county. On account of the small acreage involved and adverse conditions of installation, the latter cost per acre is much higher than it would have been under more favorable conditions. The high freight rates on tile have increased the cost of drainage considerably and prevented its installation in many parts of the state where it is needed. We have found many drainage systems in western Kentucky that have been installed for several years. These systems fail to remove sufficient soil water to permit a normal crop growth during a wet season, because they were not properly installed. This year a drainage system was installed on a small area on the farm of the Green River Chair Company at Calhoun, in McLean county, to demonstrate the best practises for their particular type of soil. The past season many of the old systems did not properly

drain the soil, while the demonstration system mentioned worked perfectly, according to Mr. Meyers, manager of the company. This same demonstration shows to a marked degree the necessity of good drainage for alfalfa land and that agricultural drain tile will furnish such drainage even in land with a very tight

School Boys Assist in Drainage Survey, Livermore, Ky.

clay subsoil when properly laid at an average depth of 30 inches below the surface of the ground.

Records kept by Mr. Owens, of Boone, Kentucky, show that the land he classified as "worthless" produced 50 bushels of corn this past season after tile draining at a cost of $35.00 per acre and the use of 100 pounds of acid phosphate to the acre. An adjoining field, very similar to the drained field, received an application of 150 pounds of acid phosphate but was not tile drained. The average yield the past season was 12 bushels of corn to the acre.

In last year's report a Muhlenberg county drainage demonstration was mentioned in which the records showed that the increase from tile drainage practically paid for the cost of the installation the first year. The farmers of Muhlenberg county have recently established a drainage district, constructed a dredge ditch and have contracted for about 15 miles of open ditch for surface drainage. They are planning to install a large amount

of drain tile. One demonstration recently established thru the cooperation of County Agent W. H. Rochester covers about 90 acres adjoining the new dredge ditch and another approximately 30 acres. These two projects will be carried thru the coming year.

Lime Burning Demonstrations.

In the early spring of 1923, the writer assisted farmers in the construction of several limekilns in Hart, Boyle and Lincoln counties. The average cost figures of preparing limestone for field use by burning were as follows:

Cost of Burning Limestone.

Capacity of kiln in tons of rock	60
Capacity of kiln in tons of burned lime	30
Cost of Items:	
Quarrying rock, @ 50c per ton	$30.00
Excavating, 32 hours @ 15c	4.80
Cutting wood, 20 cords @ $1.00 cord	20.00
Building kiln, 113⅓ hours @ 15c	17.00
Filling kiln, 80 hours @ 15c	12.20
Burning, 168 hours @ 15c an hour	25.00
Value of wood (standing), 20 cords @ $1.00 per cord	20.00
Cost of dynamite (included in cost of quarrying).	
Total cost	$129.00
Cost of preparing a ton of limestone for field use by burning	$2.15

As a result of these demonstrations we came to the conclusion that a large number of farmers in Kentucky, who have a plentiful supply of limestone, wood and cheap labor, but cannot secure crushed limestone at a reasonable figure, can burn limestone profitably.

The demonstrations were given publicity thru the press and the subject was discussed with county agents in group conferences. Up to date we have mailed out 64 blueprints showing the plan of kiln, together with mimeographed instructions describing the construction and burning of the kiln.

FARM CROPS.

Soybean Production.

Information obtained from county agents indicates that the acreage of soybeans planted in corn was practically doubled this

year, as it was last year, and that the average for hay was largely increased. The estimated acreage is about 120,000.

Some of the outstanding soybean counties are Boyle, 1,000 acres; Lincoln, 1,000 acres; Breckinridge, 800 acres; Crittenden, 1,500 acres.

There were in all 942 soybean demonstrations with farmers.

Front View of Limekiln showing "Eyes."

Kiln After Burning.

Corn Variety Demonstrations.

One hundred and sixty-nine corn variety demonstrations were conducted thru county agents with farmers.

The records show Pride of Saline, a white variety, as the leader again this year, with local varieties second and Boone County White third.

Wheat Standardization.

Eighty-three crops of wheat for seed were inspected for purity of variety and freedom from weeds. They were distributed in seventeen counties. The amount of inspected seed available from them was approximately 42,000 bushels. Most of it was Ashland, a pure strain of Fultz wheat developed by the Kentucky Experiment Station.

Wheat Variety Demonstrations.

Fifty-five of these demonstrations were conducted. The yields were obtained from 34 of the demonstrations. The average yields of these tests were as follows:

Currell's Prolific	19.6 bushels per acre
Ashland	18.2 bushels per acre
Fulcaster	18.0 bushels per acre
Local varieties	18.1 bushels per acre
Turkey	15.0 bushels per acre

The results of variety tests for two years show Ashland, Currell's Prolific and Fulcaster to be the leading varieties, with little difference between them.

Kentucky Experiment Station Root-rot Resistant Burley Tobacco.

The major portion of the crops extension work was devoted to demonstration with Kentucky Experiment Station Root-rot Resistant Burley Tobacco. Fourteen hundred and sixty-one packages of seed were sent out to county agents in the burley belt for distribution for demonstrations, and 524 packages were sent direct the farmers. Demonstrations were made in 72 counties. Records of results were obtained in 553 demonstrations.

In 50 per cent of the cases the resistant strain was superior to the farmer's local strain.

In 41 per cent of the cases it was equal to the farmer's local variety.

In 9 per cent of the cases the farmer's local strain was better.

These results mean that at least half of the soils on which these demonstrations were conducted were infected with black

Cotton Field in Fulton County.

root-rot disease; that the chances for increased yields from the use of root-rot resistant tobacco are one in two, while the chances for a lower yield is one in ten.

In those cases where the local variety was better the evidence points to the presence of another root-rot disease to which some of the local varieties have some resistance.

A large acreage of resistant tobacco was grown in the burley district. The calls upon the Experiment Station for trial lots of the seed far exceeded the supply. A large amount of seed was sold by growers who produced seed from seed obtained from the Experiment Station.

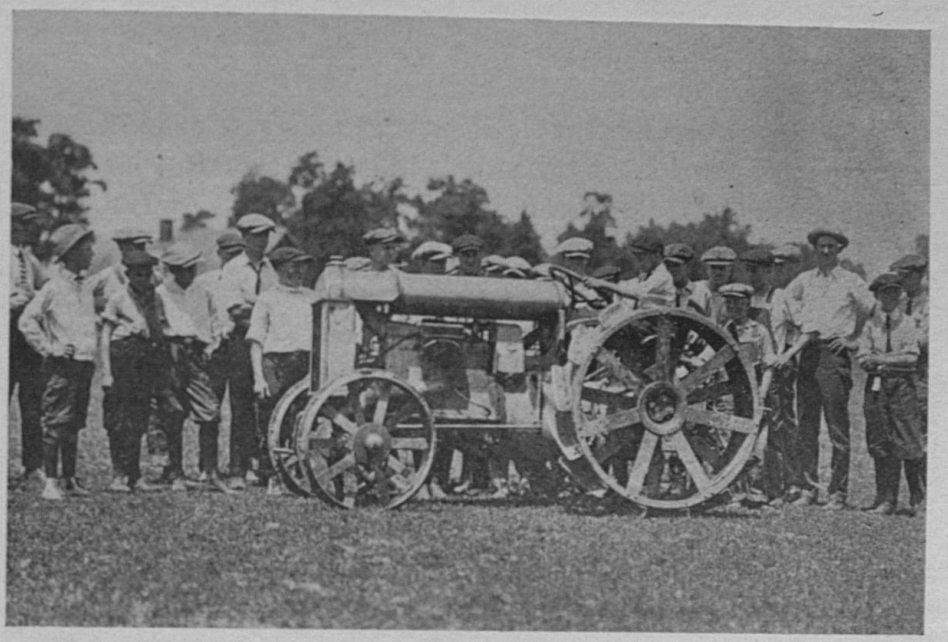
The following summary shows something of the extent of the crops extension work.

Root-rot resistant tobacco demonstrations	1,985
Soybean demonstrations	942
Wheat variety demonstrations	55
Wheat fields inspected for pure seed	83
Corn variety demonstrations	169
Growers of Pride of Saline corn	27
Japan clover demonstrations	111

Cotton Gin, Fulton County, Kentucky.

A Crop of Kentucky Experiment Station Root-Rot Resistant Tobacco and the Ordinary Non-resistant Type.

Sweet clover demonstrations	459
Demonstration visits	389
Other farm visits for a definite purpose	114
Meetings addressed	82
Total attendance	5,772
Average attendance	74



Getting Acquainted with the Farm Tractor.

Farm Engineering.

In addition to the terracing, drainage and lime burning demonstrations conducted by the farm engineering specialists, the following important pieces of work have been done:

The project in sanitation has been carried on thru the cooperation of county agents and home demonstration agents by establishing 54 demonstrations in the proper methods of disposing of sewage, and efficient economical water supply systems. This work has been done in 24 different counties in the state. All but two of these demonstrations have been established on farms.

At the special request of the fiscal court of Oldham county, complete water supply and sewage disposal systems were designed for their courthouse in LaGrange. The plans called for an underground rectangular reinforced concrete cistern with a capacity of 22,500 gallons of water for use in the courthouse and

for fire protection. The cistern is filled from water falling on the roof of the courthouse. The water is circulated thru the courthouse by an automatic electric pump and pneumatic tank. The sewage disposal consists of a septic tank and subsurface disposal beds of agricultural drain tile. The complete system was installed at a cost of $1,800.

Assistance was also given to the fiscal court of Carlisle county in the construction of a septic tank and disposal bed for their courthouse in Bardwell. The sewage from the courthouse had previously run in an open ditch thru the town.

In addition to the demonstrations established, 74 visits were made to farmers for special conferences concerning their problems.

Thru the cooperation of county agents and local hardware dealers and plumbers, five two-day demonstrations were held in the county seats of Calloway, Laurel, Muhlenberg, Carroll and Washington counties. The total attendance at these demonstrations was 690. The simple hot and cold water systems described in our Circular No. 139, was installed either in the display room of a merchant or in the county agent's office, the material required being furnished by local dealers. A number of publicity stories were run in the county papers, describing the simple water supply system and inviting farmers to inspect the installation. The operation of the system was explained to interested persons and their own individual problems discussed with them.

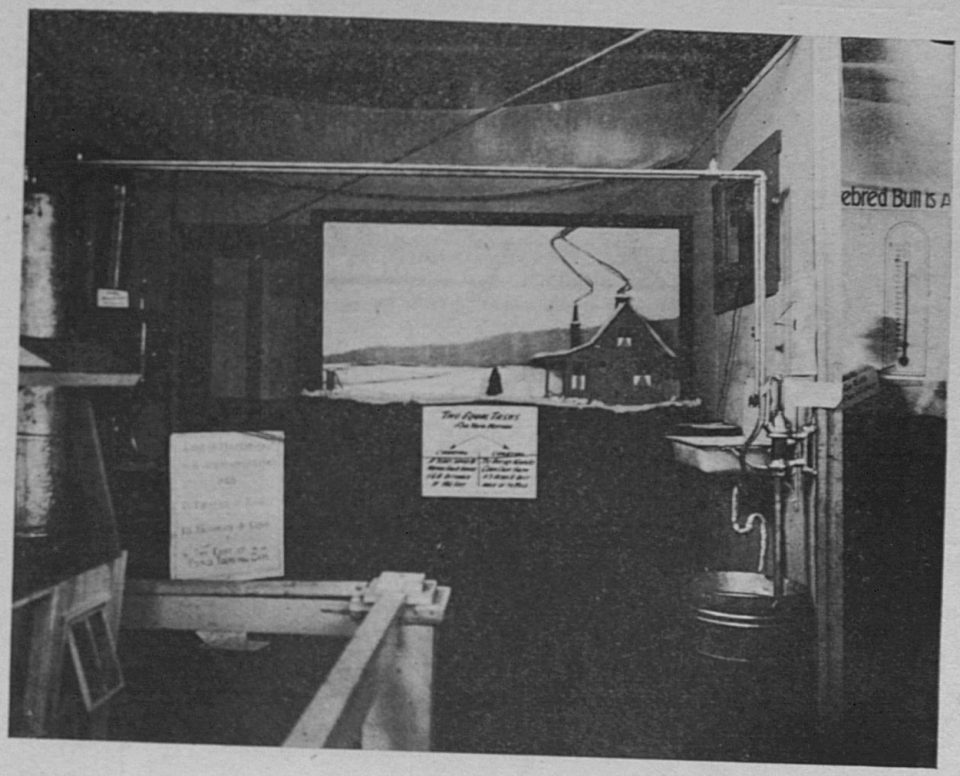
An exhibit was prepared for the State Fair in Louisville which attracted considerable attention. A simple hot and cold water system was installed complete in every detail so that visitors could inspect and operate the system. The attention of the visitors was attracted to the educational features of the exhibit by a small mechanically driven model representing an old woman who traveled from a house to a well, got a bucket of water and returned to the house.

Farm Buildings.

One of the important services rendered by farm engineering is the preparation of plans for farm buildings.

Total number of sets of plans sent out	535
Total number of sets of plans sent within State	443

Total number of sets of plans sent into other states	92
Number of counties in Kentucky receiving plans	85
Number of persons in Kentucky receiving plans	245
Number of persons outside of State receiving plans	46



State Fair Exhibit—Simple Hot and Cold Water System.

Number of special building projects started	20
Total number of persons assisted during the year with their building problems, thru correspondence, plan service, field work, etc.	524
Number of farms visited (Kelley 12, Welch 27)	39
Number of office consultations (Kelley 25, Welch 54)	79
Number of new building and equipment plans prepared for distribution, 23 sets, or a total of 51 sheets.	

It is difficult to obtain an accurate report of the total number of buildings built in the state as a result of the building plan service, but if only 50 per cent of the plans sent out were used, buildings costing approximately $150,000 were erected as a result of this project. These buildings will have a great influence in the various communities in creating a desire on the

part of others for modern, sanitary, labor-saving farm buildings. One county agent reported that in his county 25 poultry houses were built from the one set of blueprints sent him by the department.

Horticulture

The Extension Service of the Horticulture Department for 1923, as for several years past, has been devoted mainly to two lines—vegetable gardening and pomology, with a traveling specialist giving his entire time to each of these general projects.

Occasional trips have also been made by other members of the staff to various points, upon request, to make addresses upon horticultural topics or to aid in the making of plans for ornamental planting, mainly upon school grounds.

VEGETABLE GROWING.

The extension work in vegetable growing in 1923 was conducted under three main subdivisions—Irish potatoes, canning tomatoes and home gardens.

Concerning Irish potatoes, the end sought is increased yield thru the use of good seed and of varieties suited to Kentucky conditions. To determine what varieties are best to use, a late variety test was conducted by 38 demonstrators in 11 counties as follows: Kenton, Campbell, Boone, Oldham, Lawrence, Daviess, McLean, Warren, Marshall, McCracken and Fayette. The introduced varieties were Rural New Yorker, Russet Rural and Green Mountain, to replace, if worthy, the Hoosier Boy, a selection in McCormick. Russet Rural gave an average increase of 38 per cent, or 46 bushels per acre, over Hoosier Boy and was declared to be far superior in quality, bringing $4.75 per barrel on Cincinnati market as against $3.00 for Hoosier. Rural New Yorker and Green Mountain were found not suited to our conditions this year. In Campbell county, where Russet Rural is 3 years old, 30 per cent of the late potato acreage which comes under our notice (about 60 acres) is planted to Russet Rural, 30 to Bull Moose and 40 to Hoosier Boy. Bull Moose was introduced four year ago, prior to which time, Hoosier Boy was the only late variety.

Concerning good seed there are two lines of procedure, namely: Selecting good potato growers and assisting them in becoming established in growing the local seed supply and, where communities of growers exist, certifying the crop which may thus compete in more distant markets.

In the following counties one or two men are cooperating to the extent of rogueing out the diseased plants from the seed plot and otherwise carrying on selection for high yield and varietal purity in the varieties named: Campbell, Russet Rural and Bull Moose; Kenton, Bull Moose and Irish Cobbler; Boone,

Filling Hopper of Two-Man Potato Planter, Jefferson County, Ky.

Bull Moose and Early Ohio; McCracken, Russet Rural and Burbank; Warren, Hoosier Boy and Irish Cobbler; McCracken, Irish Cobbler, Triumph and Russet Rural. A total of 26 acres of seed was grown in 1923.

The other phase of seed growing, that of producing certified seed has been established in one new county and expanded in the counties where it was already in vogue. The variety is Irish Cobbler. A resume of this industry follows:

Jefferson County	27 members, 78 acres, 5,290 bushels for sale
Shelby County	2 members, 16 acres, 2,500 bushels for sale
Oldham County	6 members, 14 acres, 1,600 bushels for sale

To date, the Jefferson county association has sold 600 bushels, the Shelby association 1,200 and the Oldham association 600.

Tomato Work.

The canning tomato project received new impetus, due to

the prevalence of leaf spot which caused a reduction of 76 per cent of the expected yield, based on the 1922 crop.

The projects are as follows:

1. Spraying with Bordeaux and arsenate of lead as control for spot and tomato worm.
2. Fertilization with commercial fertilizer and manure.

It will be recalled that, due to weather conditions and other causes, the 1922 tomato crop was good, while that in 1923

Spraying Potatoes with Knapsack Sprayer.

amounted in most cases to only a fraction of the 1922 crop. Seven cooperators, with one-half acre each in each project, showed that spraying with Bordeaux resulted in an 85 per cent yield, based on their crop of 1922 when the leaf spot was negligible. On unsprayed portions of the same fields the average yield was from 20% to 33% of that secured in 1922. On the fertilized portions of the test plots as much as 60 per cent of their 1922 crop was produced; where spraying and fertilization together were done the crop was about 90 per cent of that of 1922. The results indicate that the following are the most profitable treatments in their order of excellence, the first being best.

1. Rye cover and 4 tons of manure and 400 pounds of acid phosphate, in the row.

2. Rye cover and 600 pounds of 4-10 fertilizer formula.
3. Rye cover and 600 pounds of 3-8-5 fertilizer formula.
4. 4 tons of manure and 400 pounds of acid phosphate.
5. 400 pounds of acid phosphate.

The counties cooperating are: McCracken, Graves, Carlisle, and Ballard, and the acreage of the cooperators was 2,000 in

Sweet Potato House Built According to the U. S. Department of Agriculture.

1923. The main achievement is that the canning companies have agreed to enlarge the experimental plats, furnishing materials free or at cost, and at least one company, Cowles Canning Company, Bardwell, is considering the paying of premiums on tomatoes raised with commercial fertilizer amendments to the manures now used, based on the 1923 project results.

The Home Garden. The home garden project was undertaken in cooperation with the Home Economics Department at Lexington and thru the county home demonstration agents in Calloway, Jefferson, Christian and Daviess counties. It consisted in presenting plans for planting a garden to furnish a year's supply of vegetables to fill a budget submitted by the Home Economics Department. Follow-up work was of the nature of visits to centrally located gardens, in which were held field meetings, where insect control, improved practises or better varieties succession planting and things of that nature were discussed.

Miscellaneous projects were:

1. Seed treatment of Irish potatoes for scab, with upward of 150 growers in 14 counties, 2,000 acres.
2. Dusting seed potatoes with sulfur as a further disease control: In Jefferson, Oldham, Kenton counties; over 7 tons of sulfur handled thru Farm Bureau.
3. Seed treatment of sweet potatoes for black rot: 100 per cent of men with whom contact was made, with an acreage upwards of 300.
4. Variety test of early lettuce. Of the twenty-one varieties included, New York or Wonderful proved the best and only satisfactory variety.
5. Variety tests of early tomatoes. Of the fourteen varieties included, the best were Heldeberg Globe Earliana, Penn State Earliana, and Wing's Early Red Sunrise. Then came various other strains of Earliana and Bonny Best.
6. Tests of yellow resistant cabbage: Wisconsin All-Seasons demonstrated its excellence again, giving over 90 per cent marketable heads, and showing over 95 per cent resistance.
7. Tests of wilt-resistant tomatoes: U. S. Depart. of Agriculture Norton gave over a 90 per cent wilt-free stand, but yielded poorly except in humid portions of the State. Under dry conditions Norduke did better, but showed a tendency to excessive vine growth where moisture was plentiful. In Kenton County, where pink tomatoes are grown for Cincinnati market, Illinois selection of Imperial gave an excellent account of itself.

Sixty cooperators in 11 counties participated in this project with a total of approximately 25 acres.

POMOLOGY.

The work in pomology has been directed along three main projects: (1) Management of commercial orchards; (2) orchard renovation; (3) planting new orchards.

The orchard management project has been carried on in 16 of the leading fruit counties. This work consisted largely of demonstrations with nitrogenous fertilizers, cultivation, mulching, cover crops, using complete spray schedule and, in the case of peaches, the paradichlorobenzene (P.D.B.) treatment. San Jose scale spread rapidly in Kentucky orchards in 1922. A campaign was started in 1923, advising the use of oil spray to kill the scale. As evidence that more dormant sprays were applied

in 1923 than 1922, one firm which handles spray solutions reports 105 barrels oil spray sold in 1923 as against 60 barrels in 1922. Another firm reports 80 in 1923 against 40 in 1922.

The demonstrations with P. D. B. carried on in 1922 were so successful on both young and old trees that the sales of P. D .B.

Paradichlorobenzene Treatment for Peach Borer—Note the P. D. B. in a Circle Around Tree.

this year have more than trebled. The total amount used in 1922 was estimated at 2,000 pounds, while in 1923 one firm in Kentucky which supplies less than one-fourth of the state, reports sales of over 2,000 pounds.

A definite yearly program of work was outlined for each of the three leading fruit counties, as follows:

I. MEETINGS.

(1) February: Organization meeting; adoption of program.
(2) March: Scab, scale, leaf curl.
(3) April: Coddling moth; aphis; fertilizers.
(4) May: Blotch; coddling moth.
(5) June: Summer pruning; cultivation.
(6) July: Cover crop; State Fair.
(7) August: Picking, packing and grading; peach borer.

(8) September: Storage; marketing.
(9) October: Fall planting; variety reports.
(10) November: Scale control; oil spray.
(11) December; Pruning and fertilizers.
(12) January: Organization meeting; reports and program.

Peach Tree Being Given the P. D. B. Treatment for Peach Borer—Note that the Circle of P. D. B. has been Covered with Earth.

II. Summer Tour.

III. National Apple Week. With cooperation of newspapers and commission men.
(a) Eat Kentucky apples.

IV. Spraying.
(a) Test of materials.
(1) Lubricating oil emulsion.
(2) Sulfocide.
(3) Spreaders.
(4) Calcium arsenate.
(b) Test of apparatus.
(1) Nozzles, rods, guns, etc.

V. Fertilizer Test Plots.

(a) Plots supervised by field agent in orcharding.

VI. Soil Improvement Demonstration.

(a) Lime and sweet clover.
(b) Mulching.
(c) Clean cultivation and cover crops.
(d) Commercial nitrogen.

Field Meeting, Mr. States' Orchard, Henderson County, Kentucky.

VII. State Fair Exhibits.

(a) County exhibits.
(b) Individual exhibits.

VIII. County Apple Show or Window Displays.

The various counties were visited periodically and timely advice was given. The orchard seems the most successful way of placing the results of recommended orchard management and demonstrations before the growers. Upon eight such tours this year more than 740 fruit growers attended. The two most important tours were in Henderson and McCracken counties, more than 500 fruit growers attending in the two counties. In the Henderson county tour 250 were present each day, grow-

ers being present from 18 counties of Kentucky with several from Indiana and Illinois.

Among the demonstration orchards was that of a general farmer, John Slaughter, route 1, Henderson county. This farmer purchased a 140-acre farm three years ago on which there

Stayman Winesap Apples, Henderson County, Kentucky.

was a 12-acre, 18-year-old orchard. He was especially interested in raising hogs and dairy cows but was influenced to follow a recommended program of orchard management. During the past three years his sales of fruit have been $1,600, $1,700 and $1,800, while according to his own statement his annual expenses for the orchard have been less than $400 per year, which includes interest on investment, spray material, fertilizer, depreciation on spray machinery, labor, etc. By attending the regular monthly meetings and annual tours, Mr. Slaughter has become a well informed orchard man.

As a result of a local fruit growers' association organized in Jefferson county in 1923 for educational purposes, D. L. Karcher, Jeffersontown, saved a 12-acre orchard from the San Jose scale, and by following a recommended orchard management program he harvested and sold $1,400 worth of apples. This was the first year his orchard had ever made him a dollar of profit. Mr. Karcher is now convinced that orcharding is

a profitable side line for truck gardening and has ordered a new power sprayer. He has also planted 12 acres of young orchard. Eight other commercial fruit growers in this county have cooperated in orchard management.

Apple scab has for several years been causing a severe loss

Demonstration in Orchard of Mr. D. N. Futrell, McCracken County.

in the Henderson section. During the "Better Spraying Campaign" of last spring an additional spray, the "pre-pink" was added to the regular spray schedule. Altho no accurate figures can be cited to show the advantages gained by applying this extra spray the leading growers claim the loss from scab is far below normal.

One of the outstanding accomplishments of the Henderson County Fruit Growers' Association this year was the organization of a community apple grading and packing association. A dozen of the leading growers packed their crops thru this organization. The plans for a packing association were developed at the regular monthly meetings thru the spring and summer. This organization plans also to market the fruit within a few years.

Among the cooperators in the orchard renovation project who turned in their year's results are the following: J. O. Spicer, Burna, Livingston county, has 38 trees, 17 years old, and has been a cooperator for three years, producing annual crops. This year he harvested 160 bushels of fancy fruit. After

keeping 20 bushels of the best fruit for home use, he sold the remainder at $1.00 to $2.50 per bushel, realizing $240. For spray material Mr. Spicer spent $5.00; used 4 tons of manure at $4.00 per ton, or $16.00; worked ten days pruning, manuring,

Winesap Tree—Notice Heavy Foliage due to Application of Five Lbs. Nitrate of Soda in Early Spring.

spraying, harvesting, at $3.00 per day, making a total cost of $51.00, leaving a profit of $189.00.

A. M. Key, Cave City, Hart county, harvested 56 bushels of fine fruit from his small orchard of twenty-one twelve-year-old trees. After keeping 14 bushels for home use the remainder was sold for $87.00. The expenses were as follows: Spray ma-

terial $2.00, labor for spraying, harvesting, etc., $8.00, depreciation on spray outfit $1.50. Total cost $11.50, leaving a profit of $75.50.

The project of planting new orchards has been pushed in two sections—Hopkinsville and Paducah. At the former place ap-

Young Orchard with Mulch under Trees, Middles Cultivated.

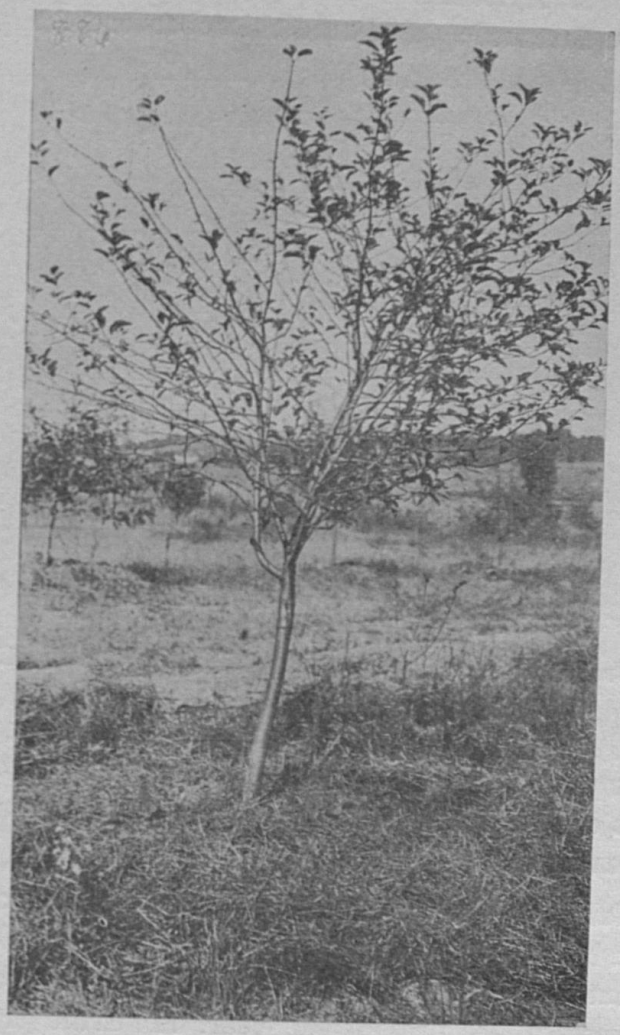
proximately 8,000 Transparent apple trees have been planted. These are being planted by more than 25 men, the acreage per farm runs from 2 to 15. The plan is to specialize on the one early variety, Transparent, so that carload shipments can be made to northern markets when the trees come into bearing. Around Paducah the Elberta peach is being pushed as a commercial proposition. More than 20,000 trees have been planted.

In both the above projects the men were organized into a fruit growers' association by the Extension Service, and a nursery committee was selected to work thru the Farm Bureau and purchase nursery stock. By using this method of obtaining trees, considerable money was saved and the farmer had the advantage of dealing with reliable nurserymen.

Considerable effort is being made to eliminate the traveling tree peddler who usually represents some unknown nursery company or some nursery which has a bad reputation.

At the request of the commercial peach growers in McCracken, Henderson and Jefferson counties, a peach pruning

demonstration, to be continued over a period of several years, was started in the three counties. One-year-old orchards were selected in each case. Six trees were pruned severely, six mod-



Young Tree Mulched with Grass to Conserve Moisture.

erately and six very lightly or not at all. Photographs were taken of the first-year pruning. Winter pruning meetings will be held at each of the orchards.

In the Rhodes and Harvison orchard at Bowling Green, an orchard of 2,000 four-year-old trees, bought for Transparent, proved to be a worthless variety. Following a demonstration last March in methods of top grafting, about half the orchard

was partially top grafted. This work will continue until the entire block is transformed into Transparents.

An exhibit was made at the State Fair in connection with the College of Agriculture display. In this exhibit the following were featured: (a) Paradichlorobenzene for peach tree

Peach Orchard under Good Culture, Webster County, Kentucky.

borers, (b) government oil emulsion for San Jose scale control, (c) sulfur lime dry-mix for scab and brown rot on peaches. Specimens of good and infected fruit were on display with the control measures.

The four days' Fruit Growers' Short Course conducted at Lexington by the University in November, with the cooperation of the Kentucky State Horticultural Society, proved to be one of the successful features of the year. 125 fruit growers from all sections of Kentucky, and a number from adjoining states were in attendance. One grower, after four days of instruction, declared that the course had been worth hundreds of dollars to him. The program was planned so as to meet the needs of the commercial grower, without being too technical for the amateur.

The general make-up of the program was as follows:

First Day—Starting the Orchard (selection of nursery stock varieties, site, planting.)

Second Day—Developing the orchard (cultivation, fertilizers, pruning.)

Third Day—Insect and disease control; storage houses and marketing; orchard heating.

Fourth Day—State Horticultural Society day and general discussions. The afternoons were devoted largely to field and indoor demonstrations of various operations of interest to fruit growers.

Farm Economics

The work of the Department of Farm Economics has been directed to teaching and demonstrating to farmers the economic principles of production, including the organization and administration of the farm for the greatest possible continuous profit and setting forth the economic principles involved in the disposition of farm products included in the marketing projects.

FARM MANAGEMENT.

The farm management extension work was confined mainly to the following areas: Mason, Kenton, Fayette, Bourbon, Shelby, Jefferson, Larue, Washington, Nelson, Christian, Todd, Union, Ballard, Carlisle, McCracken and Marshall counties. The greatest amount of time was spent in Mason, Fleming, Larue, Bourbon, Kenton and Union counties.

Business Analysis Surveys. Farm management schools had been held during the previous year in Larue at which approximately 50 farm records were started, which were followed up during the year by the county agent. In the early part of 1923 the records were closed and were supplemented by additional complete business analysis survey records, so that a total of 91 records was obtained in the county for the farm business of 1922. A factor sheet was then made showing the various efficiency factors of the best farms as compared with the average of the entire number of farms. These factors included productive days' work per man and per horse, net returns per productive animal unit, net returns from live stock per productice animal unit and per $100 worth of feed fed, receipts per 100 acres, expenses per $100 receipts, size of business, crop index and other factors. Later in the season the records were returned to the farmers and a tour was conducted by the farm management specialist and the county agent, during which the farms which had proved outstandingly successful were visited.

The most important project which was carried out during the year was a farm business analysis survey carried on in Mason and Fleming counties. The extension specialist was assisted in getting business analysis records by representatives of the research division of the Department of Farm Economics and altogether nearly 300 business analysis records were ob-

tained. Factor sheets have been worked out for individual farms and these have revealed very striking facts relative to the wide variation in net profits made by different farmers under similar natural and economic conditions. They also showed a striking variation in efficiency as measured by the productive

Part of the Group which Went on the Farm Management Tour in Mason County.

work units accomplished per man and per horse. This survey showed the kinds and acreage of crops and kinds and numbers of the different classes of live stock which gave most profitable results in this locality.

At the close of the survey a farm management tour was held during which the eight most profitable farms as shown by the survey were visited and the organization and farm practis on these farms were studied by the visiting farmers.

A considerable interest has been aroused in this area and numerous farmers have requested that a business analysis project be put on for a period of 4 or 5 years, during which time records would be kept and the business summarized and analyzed at the end of each year, improved farm practises would be introduced as a result of the facts brought out by the analysis, this to be a demonstration of the improvement extending over

a period of years to be accomplished by putting into effect the facts brought out by the farm record work.

Farm Management Schools and Movable Schools. Twelve farm management schools were held during the year, with a total attendance of 183 persons. One movable school was attended and lectures were given on various phases of the farm organization and farm management problems. Addresses were made at the meetings of farm bureaus, commercial clubs, farmers' clubs, luncheon clubs, etc.

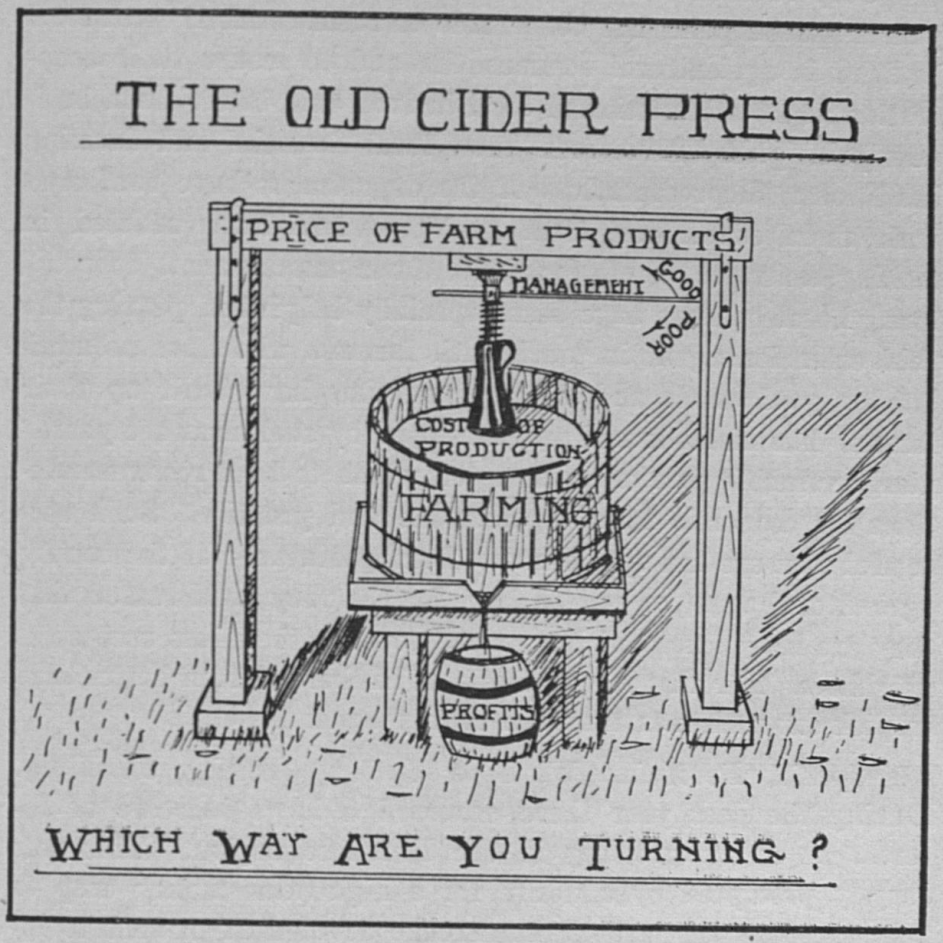
Farm Accounts. A new edition of the Kentucky farm account book was prepared and distributed to the number of approximately 1,900 copies. The representatives of the farm management section supervised the taking of farm inventories and starting entries of receipts and expenses on approximately 600 farms.

Cost of Production and Farm Organization. Demonstrations in cost of production records were continued during the year in Fayette, Spencer, Christian and Fleming counties and new records started in Harrison and Bourbon counties. These demonstrators are keeping detailed records of all costs on the various crops and live stock enterprises under the supervision of representatives of the farm management section.

Farm Management Tours.—Besides tours held in Larue and Mason counties as mentioned above, tours were held in Kenton and Spencer counties. Groups of farmers in automobiles in company with the county agent and farm management specialist visited the farms which are outstanding in their profitable organization and farm practises. These farms were studied in detail. At the noon hour dinner was spread on the lawn of one of the farms visited and an hour and a half spent in social intercourse and in listening to lectures on the principles underlying profitable farm organization and management.

Fair and Exhibits. An exhibit was made at the State Fair which impressed the principle of low cost production. This was represented by a large cider press which showed how profits are increased as production costs are forced down. Practical means of reducing production costs were enumerated in a circular which was handed out to the visiting farmers.

Farm Layout. Assistance to 12 farmers was given in the problem of laying out their fields and farmstead in such a way as to get more efficient results. During the year a reconnaissance survey was made of four farms operated by the State Board of



Charities and Corrections, located in Fayette, Franklin, Jefferson and Shelby counties. A study was made on these farms of resources for crop and live stock production and a detailed report made recommending a system embodying the proper kind of acreage of various field crops and truck crops and numbers of the various classes of farm animals required to meet the needs of the institutions and in keeping with present conditions of soil fertility. These recommendations have been put into effect and the state board has indicated that very favorable results have been obtined.

Farm Leases. There has been an increased call for advice on the question of equitable and satisfactory farm leases and to meet this need a reprint was made of the mimeographed circular on farm leasing contracts in Kentucky.

Cooperative Work With Local Bankers. During the past year a special point has been made to form contacts with local bankers in agricultural communities and to secure their cooperation in the stimulation of local interest and better farm business principles. These men know local financial and farming conditions. Representatives of the department have conferred with them concerning local problems and have assisted in making contracts with prospective farm management cooperators. Local bankers have been especially helpful in putting the field extension agent in touch with farmers who have accumulated a good estate and at the same time have built up their farms. The methods and practises used by such men are particularly valuable as a criterion upon which to base recommendations for economic farm organization and practise. Such successful men are less apt to make the acquaintance of the county agricultural agent or call on him, for the very good reason that they are less in need of his assistance than their less successful neighbors. For this reason the local banker is often better able to pick out such men than the county agent.

Special Extension Work in Cotton Growing Territory. During the past year there occurred a large increase of interest in cotton growing in the Purchase region. This was largely prompted by a desire for a high-value money crop to take the place of part of the acreage devoted at present to tobacco. Growers of the latter crop have become discouraged by the wide prevalence of wildfire and other diseases and by prices regarded by many as too low to be profitable. A period of 10 days was spent by the extension agent in farm management in Fulton, Hickman, Ballard and Graves visiting farmers and advising on the cotton crop as a factor in profitable farming. Two cotton meetings were attended and addresses made by the specialist and a report was prepared on the status of the cotton crop and its possibilities as a profitable enterprise in a diversified farming system.

Extension Work in Community Organization. Extension specialists of the department assisted in community organization work in Fayette county thruout the year just closed, during which time outstanding results were accomplished in community projects such as rural health, education, libraries and rural beautification. These results have attracted wide notice and persons interested in rural community improvement in numerous states have made inquiry as to the methods employed. A number of Kentucky counties have requested help in organizing similar community councils for promoting the social, educational, moral and economic organization of the community.

Miscellaneous Activities. These included interviews with farmers who came with questions involving phases of the farm economic problem. Similar problems were presented by letters which were answered by members of the department during the year. Other activities were assistance given by staff members in promoting Farmers' Week, rural life conferences and the preparation from time to time of press articles dealing with problems of agricultural economics.

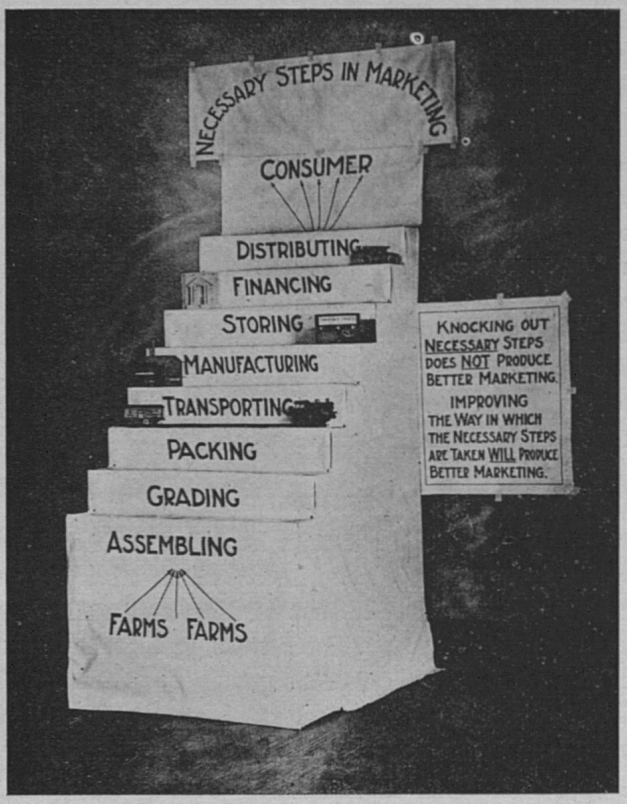
MARKETING.

During the year 1923, one man has given half of his time to extension work thruout the year. A second man has been on full-time extension work since the first of May and a third man has been devoting his time to problems relating to tobacco handling and marketing since the first of August. The Chief of the Section of Markets also has devoted considerable attention to the extension phase of the marketing work.

The extension work in marketing during the year has included the formulation of suitable plans of organization for cooperative associations, the giving of information regarding grading, handling and marketing methods, the location of outlets and the carrying on of educational work to give the farmers a better understanding of marketing, organization and related questions..

The assistance given in connection with the organization of cooperative marketing associations consists of studying the local situation to note whether the existing conditions indicate organization advisable; preparing and explaining plans of or-

ganization and operation suitable to the needs of the problem; giving information to the prospective members on possibilities and limitations of the undertaking and aiding in the completion of the organization procedure. Organization assistance was given to poultry, dairy, fruit, live stock, wool and seed pro-



Marketing Demonstration Exhibit at Kentucky State Fair.

ducers in various counties, in response to requests from county agents and farmers. Assistance has been given in dairy marketing problems in Allen, Breckinridge, Calloway, Caldwell, Grayson, Henderson, Larue and Warren counties; poultry work in Calloway, Crittenden, Marshall, Graves, Hart, Simpson and Warren counties; work with live stock producers in Boyle, Daviess, Hart, Lincoln and Union counties. Help was given in connection with the reorganization of a cooperative live stock

commission association in the Evansville market. Assistance also was given to a group of farm women in Fayette county in the formulation of organization plans for the selling of farm produce such as eggs, poultry, butter and vegetables to the consumer.

The plan of conducting tobacco grading demonstrations, which was undertaken for the first time in 1922 has been continued with the active cooperation of the Burley Tobacco Growers' Cooperative Association in central Kentucky and the Dark Tobacco Association in western Kentucky. Under this plan the association furnishes tobacco graders who attend community demonstrations arranged by county agents in their respective counties. More than 500 such demonstrations were held in November and December in over 40 counties. Ideas on better methods of stripping and sorting tobacco are in this way disseminated in a large number of communities. This is a line of educational work relating directly to better marketing since it results in better graded tobacco.

The importance of tobacco in Kentucky is such that plans are being made to give greater attention to extension work in this field. Such work will not only include work on grading, but will also give consideration to other factors, which improve uniformity and quality.

The importance of cooperative marketing as a means of bringing about better results in farming has been gaining much recognition in recent years. There is still, however, a widespread lack of understanding of the fundamental principles underlying farmers' marketing organizations. Best results can not be obtained from cooperative marketing unless there is a general understanding among the members of the limitations as well as possibilities, and especially of their relationship to the association. In order to be of definite service in this field, the Section of Markets outlined during the year a comprehensive educational program on cooperative marketing and distributed copies of this outline together with references on the subject to county agents. This outline is being made the basis for community programs of discussion on cooperative marketing.

Aid has been given in many instances in response to definite requests in the location of markets for certain products. Possi-

ble outlets have been suggested and names of representative dealers have been given. Much other information on marketing methods and problems has been given by correspondence in reply to inquiries.

Representatives of the Section of Markets have been called upon to take part in many meetings both in connection with organization of cooperative marketing associations and in general educational work in marketing. About 170 meetings, with a total attendance of upwards of 8,000 persons, have been held during the year.

A marketing exhibit was arranged for the State Fair. This emphasized the importance of careful grading and showed the relationship between quality and market price for specific commodities. This display also included a graphic representation of the effect of supply and demand on price and emphasized what cooperative marketing can do and what it cannot accomplish.

MOVABLE SCHOOLS.

In 1923 twenty-nine movable schools were held, with a total attendance of 2,355. At each of these schools one subject of major importance to the men and one subject of importance to the women were discussed. These schools were of one, two or three day duration and where conditions warranted a night meeting was held with a general lecture on some phase of agriculture. Stereopticon slides and charts were used and demonstrations given by the extension workers in presenting their subjects. In some instances certain groups of people signed up for specific subjects, and under such circumstances one extension worker gave a series of lectures and demonstrations to this group. Records were taken of the attendance by having each person sign a registration card. On these cards was a list of the publications, and bulletins and circulars wanted were sent from the college. So many requests for these schools were received that it was impossible to fill all of them. At each school the people were urged to sign up, if possible, to put into actual practise some of the things recommended by the extension workers.

Motion Pictures. Seven new pictures were added to our collection. These pictures deal with live stock, soils, crops, animal diseases, and the use of milk, with one or two scenics.

Motion pictures were distributed in 71 counties in the year 1923, and were shown to a total of 16,740.

Stereopticon Slides. Five new sets of stereopticon slides running from 27 to 40 slides in each set, were added to our collection. These new slides deal with tobacco, better sires, soybeans and legumes, Sudan grass and limestone.

Stereopticon slides were used in 64 different counties.

State Fair. At the State Fair held in Louisville, September, 1923, the following departments, Farm Management, Home Economics, Horticulture, Marketing, Animal Husbandry, Agronomy, Agricultural Engineering, County Agent Work, Junior Agricultural Club Work, had exhibits. Each of these exhibits represented in a graphic way some fundamental fact which that particular department was emphasizing. Larger crowds were

present and more interest was manifested in the exhibits than ever before.

Farm and Home Convention. The annual farm and home convention was held at the College of Agriculture, January 30, 31, February 1 and 2. The meetings were arranged in three sections: One where demonstrations and discussions were given in live stock, soils, crops and agricultural economics; another was given to the discussion of poultry problems, and a third dealt with the subjects of rural home, church, school and community.

The average daily attendance for the section with live stock was 335, for the poultry section 115, and for rural home, church, school and community, 188.

PUBLICATIONS.

Continuing the activities of the two years previous, the Section of Public Information this year has prepared and sent to the press a total of 1915 stories and articles. Daily, weekly and agricultural papers, as well as the various press associations have shared in the distribution of the stories which have ranged in style and length from squibs of 50 to 75 words to feature stories of several thousand words, with which illustrations have been furnished.

Of these 1915 stories, 1399 may be classified as follows: Animal husbandry, 122; botany, 10; county agent, 488; dairy, 63; entomology, 18; farm economics, 50; home economics, 30; horticulture, 120; junior agricultural club work, 86; movable schools, 34; poultry, 170, soils and crops, 190; and veterinary, 18.

In addition, 156 stories dealing with these various subjects have been prepared especially for weekly papers, and 360 stories, including those on local meetings and things of local interest about the College of Agriculture have been prepared for the two Lexington papers. This last service, also, has included the handling of all stories dealing with Fayette county agent work for the two local papers.

As in former years, the majority of stories sent out by the section have gone to daily and weekly papers and to press associations, altho classified mailing lists are maintained to take care of stories of special interest to certain classes of publications. A total of 598 stories has been sent to the one press association in the state. All of these are included in the figures given above. Most of them have been used in the state mail service of the press association but those with spot news value have been due on the wire.

Most of the stories distributed by the section have been sent out thru three main channels. One of these is a service designed especially for dailies and the larger weeklies and semi-weeklies. Most of the papers getting this service have regular farm pages or farm sections and are given stories on timely and practical farm and home subjects. Another service is designed largely for daily papers and carries only stories with a straight news

value that are of interest thruout the state. The third service is designed especially for weekly papers.

Classified mailing lists are maintained to serve specialized agricultural journals. No attempt is made to send the stories to these papers regularly, the material being sent only when something of special interest to this particular group comes up.

Among the journals that have used special feature stories, prepared during the year by the section, are the Bankers' Monthly, The Indiana Farmers' Guide, the Jersey Bulletin and The Southern Agriculturist.

One of the special services rendered by the section during the year has been the handling of news on special meetings and events out in the state. Included among these have been the State Fair and the Milk for Health Campaign recently put on in Christian county. The editor was present at each of these and handled all the news on the College of Agriculture activities for the local papers. In the case of the milk campaign all the news during the week was handled by the editor.

During the year, 1923, the Extension Division issued 31 publications. Of this number 24 were new publications and 7 were revised editions or reprints.

The titles of these publications are classified as follows:

Junior Club Work.
Circular No. 99.—Swine Breeding Project (Junior Agr. Clubs).
Circular No. 116.—Elementary Clothing Project (Junior Agr. Clubs).
Circular No. 130.—Marketing Farm Products.
Circular No. 140.—Team Demonstration Outlines I.
Circular No. 141.—Team Demonstration Outlines II.
Circular No. 142.—Team Demonstration Outlines III.
Circular No. 149.—Team Demonstration Outlines IV.
Junior Week and Junior Club Announcements.
Circular No. 156.—Team Demonstration Outlines V.
Dairy Work:
Circular No. 143.—Feeding the Dairy Cow Without Silage.
Circular No. 144.—Clean Cream Production.
Circular No. 145.—1. Care of the Cream Separator.
2. Variation in Cream Tests.
Circular No. 146.—Standardizing Milk and Cream—Use of Lactometer.
Circular No. 147.—Dairy Troubles in the Spring of the Year.
Circular No. 148.—Difficult Churning.

Animal Husbandry:

Circular No. 151.—Care and Management of the Ewe and Lamb.
Circular No. 152.—Stomach Worms in Sheep.
Circular No. 153.—Purebred Rams are Profitable.

Reports:

Circular No. 150.—Annual Report of the Director of Extension.

Poultry:

Circular No. 157.—Artificial Brooding of Chicks.

Home Economics:

Circular No. 154.—Table Service and Table Etiquette.
Circular No. 158.—Wife Saving Kitchens.

Agronomy:

Circular No. 155.—Production, Care and Use of Farm Manure.

Horticulture:

Circular No. 159.—The Peach Borer and the Paradichlorobenzene Treatment.

Farm Management:

Circular No. 160.—Increase Profits by Keeping Down Cost of Production.

The revised editions and reprints are as follows:

Circular No. 70.—Alfalfa (revised edition).
Circular No. 81.—Crimson Clover, Its Possibilities in Kentucky. (Second edition.)
Circular No. 85.—Docking and Castrating Lambs (revised).
Circular No. 110.—Hatching and Raising Chicks (revised). (Poultry Project Jr. Agr. Clubs.)
Circular No. 115.—Cooperative Marketing (reprint).
Circular No. 125.—Pitcher Pump Installations (revised).
Circular No. 127.—Outlines for Canning (reprint). (Junior Agricultural Clubs.)

LIST OF EXTENSION WORKERS.

January 1—December 31, 1923.

ADMINISTRATION.

*Thomas Cooper, Dean and Director.
T. R. Bryant, Asst. Director.
†F. J. Keilholz, Editor.

AGRONOMY.

*George Roberts, Head of Department.
*E. J. Kinney, Field Agent in Agronomy.
Ralph Kenney, Field Agent in Crops.
†R. E. Stephenson, Field Agent in Soils.
‡S. C. Jones, Field Agent in Soils.

AGRICULTURAL ENGINEERING.

*J. B. Kelley, Field Agent.
Earl G. Welsh, Field Agent.

ANIMAL HUSBANDRY.

*E. S. Good, Head of Department.
Wayland Rhoads, Field Agent in Beef Cattle.
*L. J. Horlacher, Field Agent in Sheep.
R. C. Miller, Field Agent in Sheep.
Grady Sellards, Field Agent in Swine.

COUNTY AGENTS.

C. A. Mahan, State Agent.
B. G. Nelson, Assistant State Agent.
E. J. Kilpatrick, Assistant State Agent.
N. R. Elliott, Assistant State Agent.
A. C. Burnette, Agent in Charge of Negro Work.
J. W. Whitehouse, Assistant State Agent.
L. M. Amburgey, Boyd County.
S. W. Anderson, Jefferson County (Assistant).
G. C. Baker, Lawrence County.
R. O. Bate, Lewis County.
†J. Robert Bird, McCracken County.
L. C. Brewer, Union County.
T. L. Britton, Leslie County.
John Brown, Fayette County (Assistant).
Harry Cottrell, Marshall County.
H. G. Cress, Christian County.
†Lloyd Cutler, Webster County.
†A. J. Chadwell, Wayne County (Assistant).
G. W. Bacot, Christian County (Assistant).
E. Frank Davis, Whitley County.
C. B. Elston, Logan County.
E. H. Duckworth, Marshall County (Assistant).
†Robert Ford, McLean County.
P. M. Frye, Owsley County.
W. R. Gabbert, Fayette County.
J. B. Gardner, Calloway County.
†Morris Gordon, Hopkins County.
I. C. Graddy, Todd County.
†Z. L. Galloway, Fleming County (Assistant).
R. M. Greene, Breckenridge County.
Robert Harrison, Harlan County.
H. J. Hayes, Wayne County.
Robert Heath, Washington County.
C. L. Hill, Nelson County.
J. O. Horning, Barren County.

Harold F. Link, Campbell County.
Frank Leslie, Hopkins County.
J. E. McClure, Daviess County.
†B. B. McInteer, Meade County.
†J. W. Jones, Larue County.
H. F. McKenney, Grant County.
Donald W. Martin, Henderson County.
A. K. Murray, Todd County (Assistant).
R. J. Matson, Boone County (Assistant).
C. E. Miller, Boyle County.
J. L. Miller, Taylor County.
L. F. Morgan, Morgan County.
Gordon B. Nance, Oldham County.
L. C. Pace, Livingston County.
†Thomas Payne (Colored), Simpson County.
W. R. Reynolds, Jackson County.
W. H. Rochester, Muhlenberg County.
N. C. Shiver, Caldwell County.
†R. W. Scearce, Grayson County.
John R. Spencer, Mercer County.
W. D. Sutton, Boone County.
R. V. Trosper, Breathitt County.
Fletcher Walker, Adair County.
E. A. Whalin, Ballard County.
C. A. Wicklund, Kenton County.
W. C. Williams (Colored), Christian County.
Fred B. Wilson, Laurel County.
†W. C. Wilson, Pulaski County.
Lucien Woodhouse, Hart County.
W. B. Woodward, McCreary County.
†C. L. Taylor, Boyle County.
G. C. Routt, Carroll County.
T. H. Jones, Lee County.
†H. J. Childress, Marion County.
J. E. Kuykendall (Colored), Warren County.
Henry Laine (Colored), Madison County.
Earl Mayhew, Knox County.
J. C. Nageotte, Breckenridge County.
†R. B. Rankin, Morgan County.
R. F. Spence, Madison County.
O. R. Carrithers, Knott County.
H. K. Warth, Crittenden County.
E. H. Darnaby, Trimble County.
J. V. Coleman, Larue County.
‡C. E. Houk, Garrard County.
‡H. D. Triplett, Caldwell County.

‡Campbell Wade, Owen County.
‡Homer J. Kline, Warren County.
‡Walter G. Trice, Allen County.
‡W. C. Johnstone, McCracken County.
‡O. L. Cornn, Whitley County.
‡Kimber Bowles, Estill County.
‡J. A. Wesson, Meade County.
‡Clyde Watts, Carroll County.
†Ben G. Marsh, McCracken County (Assistant).
‡R. E. Sleppy, Campbell County (Assistant).
‡F. D. Wharton (Colored), Shelby County.
‡R. H. King, Madison County (Assistant).
‡M. — Sasser, Pulaski County (Assistant).
‡P. R. Watlington, McLean County (Assistant).
‡C. O. Dickey, Fayette County (Assistant).
†R. O. Wilson, Union County (Assistant).

FARM MANAGEMENT.

*W. D. Nicholls, Head of Department.
†C. U. Jett, Field Agent.

HOME ECONOMICS.

Maybelle Cornell, Head of Department.
‡Mary E. Sweeny, Head of Department.
†Margaret Whittemore, State Leader of Home Demonstration Agents.
Margaret D. Jonas, Assistant State Leader.
Lulie Logan, Assistant State Leader.
Eleanor Enright, Field Agent in Foods.
Irene Piedalue, Field Agent in Clothing.
Mary M. Miller, Field Agent in Foods.
Catherine Christian, Field Agent in Clothing.
†Madge Bennett, Christian County.
Lillian Cole, Campbell County.
†Elizabeth Cornelius, Jefferson County.
†Geneve B. Edwards, Logan County.
Rose B. Craft, Knott County.
Octavia Evans, Daviess County.
Jennie C. Grubbs, Boyle County.
Zilpha Foster, Muhlenberg (Assistant).
Jennie C. Grubbs, Boyle County.
Ida C. Hagman, Graves County.
†Jacqueline Hall, Harrison County.
†Maude Meguiar Alexander, Simpson County.
Ida Moore, McCracken County.
Roxie C. Perkins, Harlan County.
Elizabeth Roberts, Boyd County.

Sidney Standifer, McCreary County.
Catherine Taylor Johnson, Oldham County.
Gladys Waddell, Lee County.
Rheda W. Oury, Calloway County.
†Cora Lee Wood, Muhlenberg County.
Laura Spence, Laurel County.
†Joyce Syler, Garrard County.
†Annie B. Goddard, Mercer County.
†Laura M. Seward, Ballard County.
†Lillias Warren, Knott County.
†‡Orie W. Newman, Woodford County.
‡Ethel Nice, Garrard County (Assistant).
‡Fannie E. Cocke, Christian County (Assistant).
†Mary Marks, Henderson County.
‡Jessie Yancey, Fayette County.
‡Sally Coleman, Muhlenberg County (Assistant).
†Annie B. Priest, Graves County (Assistant).
‡Mary L. Daugherty, McLean County.
‡Vashti Cave, Oldham County.
‡Ouida Midiff, Lee County (Assistant).
‡Lulu Holmes, Ballard County.
‡Virginia M. Hobbs, Mercer County.
‡Anna M. Streed, Henderson County.

HORTICULTURE.

W. W. Magill, Field Agent.
J. W. Gardner, Field Agent.

JUNIOR CLUBS.

Carl Buckler, State Leader, Junior Club Work.
J. M. Feltner, Field Agent.
M. S. Garside, Field Agent.
Anita Burnam, Field Agent.
Garnet McKenney, Field Agent.
E. E. Fish, Field Agent.

DAIRY.

E. M. Prewitt, Field Agent.
*J. O. Barkman, Field Agent.

MARKETS.

*D. G. Card, Field Agent.
J. W. Jones, Field Agent.
‡E. C. Vaughn, Field Agent.

POULTRY.

†H. R. Jackson, Field Agent.
J. R. Symth, Field Agent.
†Berlie Winton, Field Agent.
*J. H. Martin, Field Agent.
‡J. E. Humphrey, Field Agent.

VETERINARY SCIENCE.

T. P. Polk, Field Agent.

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*Devotes only part time to extension work, the remainder to Experiment Station and resident teaching.
†Resigned during year.
‡Appointed during year.

RECEIPTS AND DISBURSEMENTS FOR FISCAL YEAR ENDED JUNE 30, 1923.

Receipts.

Federal Smith-Lever	$152,241.30
State Smith-Lever	142,241.30
Federal Supplementary	45,100.93
Total	$339,583.53

Disbursements.

	Administration	Publications	County Agents	Home Dem. Agents	Clothing	Foods	Movable Schools
Federal Smith-Lever	$9,255.15	$6,879.00	$61,918.68	$22,943.08	$2,558.25	$3,156.80	$1,002.46
State Smith-Lever	14,604.15		24,378.37	33,860.50	3,349.17	3,758.33	
Federal Supplementary			45,100.93				
	$23,859.30	$6,879.00	$131,397.98	$56,803.58	$5,907.42	$6,915.13	$1,002.46

Junior Clubs	Agronomy	Dairying	Animal Husbandry	Markets	Farm Management	Poultry	Horticulture	Veterinary Sci.	Rural Engineering	Total
$10,357.60	$3,004.75	$2,007.32	$4,419.32	$1,311.95	$2,936.88	$5,238.56	$3,347.33	$3,590.87	$2,172.26	$146,100.26
16,810.98	6,349.98	3,024.99	9,324.98	2,112.49	3,749.66	6,636.68	4,858.32		3,281.66	136,100.26
										45,100.93
$27,168.58	$9,354.73	$5,032.31	$13,744.30	$3,424.44	$6,686.54	$11,875.24	$8,205.65	$3,590.87	$5,453.92	$327,301.45

UNIVERSITY OF KENTUCKY

COLLEGE OF AGRICULTURE

Extension Division

THOMAS P. COOPER, Dean and Director

CIRCULAR NO. 172.

WHY SOME FARMS PAY

Lexington, Ky.

September, 1924.

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