

UNIVERSITY OF KENTUCKY

COLLEGE OF AGRICULTURE

Extension Division

THOMAS P. COOPER, Dean and Director

CIRCULAR NO. 182

ANNUAL REPORT

FOR THE
YEAR ENDING DECEMBER 31, 1924



County Agent S. W. Anderson shows to Mr. W. T. Parker the damage from black root on White Burley tobacco in Mr. Parker's field, Nicholas County, July, 1924.

Lexington, Ky.

May, 1925

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.

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

530 SOUTH EAST ASIAN AVENUE

SEAL OF THE UNIVERSITY

CHICAGO, ILLINOIS

1950

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, 1924. In this report will be found a statement of the various activities of the past year, a list of publications and a financial statement of receipts and expenditures.

Respectfully,

THOMAS COOPER, *Dean and Director.*

Lexington, Kentucky,

January 15, 1925.

Honorable William J. Fields,
Governor of Kentucky.

Sir:

In accordance with an act of the Legislature of the State of Kentucky, approved March 15, 1916, I herewith submit the annual report of the Division of Agricultural Extension of the College of Agriculture, University of Kentucky, for the year ended December 31, 1924.

Respectfully,

FRANK L. McVEY, *President.*

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Introduction

Chapter I

The first part of the book is devoted to a general survey of the subject. It begins with a discussion of the historical background of the problem, and then proceeds to a consideration of the various methods which have been employed in the study of the subject. The author then discusses the results of his own researches, and finally makes some suggestions for further work.

Chapter II

The second part of the book is devoted to a detailed study of the subject.

Chapter III

Chapter IV

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Chapter V

CIRCULAR NO. 182

Annual Report of Agricultural Extension

T. R. BRYANT, Assistant Director

The year 1924 was the tenth year of agricultural extension work since the enactment of the Smith-Lever Law, passed by Congress and signed by the President of the United States on May 8, 1914. Periodic reports of the work have been made from year to year, but it seems proper with this annual report to review briefly the trend that the work has taken, and attempt to convey some idea of what should be accomplished in the near future.

A considerable number of the States, Kentucky included, had already done a considerable amount of extension work prior to the passage of the Smith-Lever Law and the funds made available by that law and legislation within the several States in acceptance of its terms were, in the main, devoted to an expansion of the work already undertaken. The Smith-Lever Law very wisely placed extension work, in the various States, in charge of the Land Grant Colleges in each of which was established an Agricultural Experiment Station already in possession of a vast amount of valuable information, which needed to be assimilated and put into practice by the rural population thru actual demonstration. These Experiment Stations, moreover, are still in operation, constantly developing new and useful information, even tho they are at the present time not being given the financial support to enable them to carry out fully the enlarged program of which they are capable.

While the Smith-Lever Law did not go into detail concerning the exact methods to be pursued in getting this work done, still two cardinal principles found general acceptance thruout the Country. One was that a large proportion, if not considerably more than half of the funds were devoted to the employment of resident county representatives to do work in Agricul-

ture and Home Economics within their respective counties, with the counties cooperating in their employment and selection.

The second principle was that, in the main, the teaching was to be performed by the demonstration method, altho the lecture, the exhibit, the printed page and other methods were contemplated and have proved their value.

The public has not been slow to apprehend the value of this work as projected. This is evidenced by the fact that the 3,000 agricultural counties in the United States now have 2,174 county agricultural agents. There are also 851 county home demonstration agents, and a sufficient number of the more progressive counties have additional workers to bring the total number of resident county workers up to 3,427.

These county workers, in the nature of the case, must look after all phases of agriculture and home economics and hence must be supported by specialists in the various branches such as horticulture, dairying, agronomy, foods, etc.

This represents in general the deployment of the forces for the accomplishment of the work contemplated and refers to work with boys and girls as well as with adults. Scarcely any fundamental changes in the plan have become necessary up to the present time.

The United States Department of Agriculture has also maintained a sufficient number of workers to properly supervise and assist in the work, also to act as a sort of clearing house thru which exceptionally successful methods in one State may be properly presented in other States.

Farm organizations of various kinds have proved their value to this work. In fact use has been made of all existing agencies that would assist in forwarding the work. These include schools, boards of trade, parent-teachers' associations, banks, community clubs, boards of health, Y. M. C. A., the public press and others.

The agricultural population has been regarded as a bulwark of political as well as economic and social conservatism and stability. This position has been occupied and maintained by our rural population by reason, first, of their native ability and intellectual acumen; second, on account of their comparative freedom from undue influence exerted at times of stress

upon those in more restricted regions, and, third, because their educational attainments have compared in the past more or less favorably with those of urban districts.

In the past few decades, however, the cities have seemed to apprehend more fully the value of the acquired ability to be had thru superior education and have made better provision for the education of their young people than have the inhabitants of the rural districts.

This education has extended not only to the branches embraced in the usual curricula of schools and colleges, but also to vocational training in a multitude of forms, all calculated to increase the skill of intellect and hand and thus give to the rising generation every possible advantage.

Already this process has been going on long enough to make its influence felt and a natural symptom has been the slipping out from our rural districts of many of the more alert and aggressive young people, naturally seeking those places where more things are going on, where progress seems more apparent and where they conceive more things to be worthy of their attention.

Thus, by greater effort toward the development of what native ability their people possess, the cities have gotten themselves into a position to seem to be more desirable places than the country, despite the fact that the open country has the greater natural advantages.

This is no new thing. No richer countries in natural resources have ever existed than India, Russia or Mexico, and yet, thru neglect of self development, they have come to compare very unfavorably with such countries as Denmark, Switzerland or Holland, much less favored by nature, but where the people exerted themselves to bring into activity every faculty of mind and hand.

President Pearson, of Iowa State College, is quoted as having recently said: "When we find a much smaller proportion of educated men in agriculture, than in the business with which farmers deal, then we have gone a long way toward peasantry in its worst form."

The Smith-Lever Law is unique in Federal legislation, and

inaugurated a system of work far beyond comparison in scope with anything of its kind ever instituted in any other country. It may be well said to provide fully against the likelihood of the coming into America of a system of peasantry as it is known in the old countries, for it is helping to maintain in our rural districts a capable, intelligent and self-reliant population.

Bearing all these things in mind, it is not surprising that extension work in agriculture and home economics should have found ready acceptance or that it should have been given full opportunity to demonstrate its value to rural people and, thru them, to the Country at large.

The work of the agricultural extension agents has become more or less fully appreciated, but the equally valuable work in home economics has been slower to be apprehended.

The lot of many farm women leaves much to be desired. If unrest exists on farms, its cause is to be found, mainly, not in farming difficulties, but in unsatisfactory conditions in the housing, feeding and clothing of the family and the uninteresting character of community life.

The average farm home could, at a very moderate cost, be made infinitely more convenient and comfortable and the natural advantages of the farm could be much more fully utilized to the comfort and convenience of the family. It is toward these ends that the work in home demonstrations is being directed.

All extension work, in both agriculture and home economics, is based upon the self-help idea and its progress will be in almost direct proportion to the amount of local leadership that can be brought into action.

With full cooperation on the part of local authorities and private citizens, men and women, there is scarcely any limit to the amount of improvement in agriculture, home and community that can be accomplished. The work is just begun. Another ten years of earnest effort will place the farmer and his family in an infinitely more enviable position.

County Agents

C. A. MAHAN, State Leader

Working in the belief that the fundamental basis of County Agent work is to help people to help themselves, the plan of building community programs and assigning local leaders to look after the various projects has been continued with added vigor during the past year. As a result, with the addition of only two counties during the year, the number of community programs has increased from 173 for 1922 and 439 for 1923 to 539 for 1924. In 1923 there were 2,480 community leaders and in 1924 these were increased to 2,914. With the help of these 2,914 local leaders more than 21,000 demonstrations were conducted during the year, or 312 for each county having an agent.

With this volume of work being accomplished the old criticism that Extension helps only the best farmers is being overcome. Many are now reached who were not the best farmers when the work was started with them. That this method has been effective is shown by the volume of results reported in the annual tabulation reports as compared with previous years. Not only have the old projects been enlarged but some important new projects have been developed; for example, the use of marl. Marl has been found in more than 50 counties and one to thirty demonstrators have been secured in each county having an Agent.

Another new project for many communities was the fight against the Mexican Bean Beetle whose entrance into Kentucky is seriously threatening one of the main garden vegetables.

The U. S. purebred sire campaign has been given emphasis this year and Kentucky is now first in this campaign. This is a position much coveted and sought after by all live-stock producing states. Before this campaign was started Kentucky ranked second from the bottom of the list of contesting states.

The number of counties with Agents has been increased from 64 reported for last year to 67 for this year. In addition to these, Spencer, Franklin and one or two others are now making steps toward taking up the work. To meet these vacancies and changes which usually occur about the end of each year, 6 Assistant Agents are now employed and have been placed with trained Agents to spend a few weeks for training and observation, before being offered to counties as full time Agents.

NEW RECORD BOOKS FOR PLANS AND RESULTS

Early in 1924 each Agent was required to fill in a blank furnished by this office showing the plan of work for the county, as based upon his community-built programs, indicating in each case the projects, with the leaders and goals for each. At the end of the year these were returned to the Agents to have them fill in the results accomplished so as to check these with the goals planned. This is considered the best system of recording plans and determining the results secured by County Agents thus far devised. This is a good method of making a picture of the work for the County Agent, as it stresses the need of community-built programs and the community leaders for each; it calls for a summary of work by projects. Of equal importance is the blank for budgeting the time among the various projects. To do this an Agent will feel the need of a number of well-made community programs and he will know both what he is planning to do and when these things are to be done.

This report form facilitates supervision, as the plans for a whole county are condensed into a few pages and the inspection requires only a few minutes to a county. One of the greatest values of one of these is that in the event of a change of Agents the new Agent may know at once the communities, the projects being carried on in each community, and the local leaders to look to for help in those communities with each project.

To give an indication of the volume of work done by the County Agents and local leaders, assisted by the Extension Specialists, a few figures taken from the annual tabulated reports are given below:

No. counties with Agents	67
No. communities building extension program	539
No. community leaders in community-built programs.....	2,914
Total number of local leaders, including community leaders, selected in community-built program	4,149
No. demonstrations (result and method) by County Agents and community leaders	21,471
No. result demonstrations carried thru year.....	11,622
No. farm visits made by Agents	40,786
No. farms visited	16,900
No. home visits made by Agents	4,940
No. homes visited	3,008

No. office calls relative to work (office)	47,849
(Telephone)	27,352
No. individual letters written	46,347

Meetings Held

No. training meetings for local leaders	408
Attendance of local leaders	2,063
No. demonstration meetings held	4,927
Attendance	89,750
No. farmers institutes and short courses	429
Attendance	8,062
Junior Club camps assisted	34
Total attendance (including adults)	36,482
Other meetings	2,874
Attendance	180,409

Miscellaneous

No. breed associations organized, dairy cattle	88
No. breed associations organized, other stock.....	15
Total number members in purebred sires campaign.....	2,087
No. farms installing drainage systems	71
Acres drained	2,045
No. water systems installed	43
No. lighting systems installed.....	33
No. farms clearing land	279
Acres of land cleared	2,087

	No. Result		No. Acres
	Dems. Started	No. Completed	Involved
Corn	430	250	1,599
Wheat	125	66	994
Oats	78	67	282
Rye	83	69	435
Barley	173	146	2,566
Alfalfa	612	510	3,215
Soybeans	1,201	928	8,119
Sweet clover	310	251	1,460
Crimson clover	36	19	133
Clover	378	212	2,530
Cowpeas	216	202	1,508
Lespedeza	243	164	1,449
Pastures	184	175	1,675
Other legumes	42	16	61
Irish potatoes	603	512	801
Sweet potatoes	20	16	9
Cotton	409	304	514
Tobacco	1,141	782	3,458

Other crops	122	122	1,152
Tree fruits	614	470	1,646
Brush and small fruit.....	83	66	104
Grapes	54	34	33
Market gardening	91	121	86
Home gardening	199	115	
		<hr/>	<hr/>
Totals	7,447	5,617	33,829

Home Economics

MYRTLE WELDON, State Leader

The aim of home economics extension work in Kentucky is to extend to home makers the opportunity to study home making problems under trained leadership, to increase their skill, add to their information and develop their appreciations to the end that they may apply the contributions of science and art to their chosen profession, home making, and may more effectively contribute to the well-being of their communities. One sociologist has estimated that the home maker employs the skill and information of thirty-two different vocational and professional groups outside the home. She is a cook, a baker, a food preserver, a food producer, a dietitian, a baby specialist, a child specialist, a home nurse, a scrub woman, a laundress, a seamstress, a dress-maker, an interior decorator, a buyer, and so on. If her home is to be beautiful she must have an appreciation of beauty as well as an understanding of the principles of color and design. If her home is to be healthful she must have higher standards of health as well as an understanding of the principles of hygiene, sanitation and nutrition. She must be able to care for the sick, to meet emergencies. She must know something about equipment, its selection, arrangement and use. If her home is to be efficiently run and managed she must intelligently study her tasks, her methods of work; she must organize her time in order that the mechanical tasks of housekeeping may be accomplished with a minimum expenditure of time and energy and that there may be a reserve to devote to the mental, moral, social and spiritual phases of home making. The home maker of the future should provide not only food for the growing body which will build strong bone and muscle and blood, but also mental, moral and spiritual food which will build alert and active minds, strong moral fiber and a finer faith. She should have the social and educational welfare of her community at heart.

One of the outstanding accomplishments of the year is the organization of the Home Makers' Association in twelve counties. The Association is an organization of the women who wish to identify themselves with the home economics extension service and receive the benefits of the home economics extension

program. The object of the organization is to increase the interest and participation of the women in the program, to give them a real feeling of responsibility, to get them thinking and working together. The County Home Makers' Association, besides offering to the rural women of the county a means of working together, demands for them the recognition which they have long deserved and enables them to link their work with the existing organizations for the purpose of upbuilding their communities.

Another development which deserves mention is the increased use of local leadership. It is conceded by educators and sociologists that real progress is achieved only when the individual or community is mobilized to solve its own problems. Only thru the development of local initiative, local participation, local responsibility, can any lasting or far-reaching results in extension education be achieved. The county organization and subsequent county-wide extension program have done much to encourage a feeling of responsibility and to promote leadership in carrying on the extension program. Quoting from the annual reports of the county workers: "The women are awake to the benefits of a county-wide program. This alone has done more towards the development of leadership than any method that has been tried in this county. We find the leaders eager to do the work assigned to them and, in some cases, this leadership could have been developed sooner had we placed confidence in the women. We feel that it is a decided step ahead in extension work and it has been proven in the county that better results will be gotten and better follow-up work will be done if a local leader is trained and in turn gives the work to her community than if the subject matter is given by someone else."

PROGRAM OF WORK

The extension projects carried on in Kentucky this year may be classified under three main divisions, Clothing, Food, and Home Improvement.

Clothing

MILLINERY

Millinery has continued to be a very popular project in the

home economics extension program. The women like to do things with their hands, they are gratified with the results which they can see, they can count results in terms of dollars and cents saved, and the making of a hat is a real opportunity for creative activity and self-expression on the part of the women. Since September, 1924, all millinery work has been carried on by leaders trained by the specialist at a three-day training school. The women were taught the principles of selection, constructive processes, making and placing of trimmings. The leaders returned to their communities and helped the interested women make hats. Excellent reports have been received from the counties. The women have assumed the responsibility of leadership beyond all expectation. One of the most gratifying



Leaders in millinery wearing hats made in class. McCracken County.

results is the quality of work done. The millinery work does not look like amateur or home made work. Many of the women have never been able to wear such becoming hats before. One county reports that in the spring when the specialist gave the work to the community groups 76 hats were made and in the fall when the work was given to the local leaders who, in turn, repeated the work to their communities, 200 hats were made. Such a comparison is indicative of the more far-reaching effects

of locals leadership. A circular on "Hat Selection, Renovation and Construction" has been prepared by the specialist in charge of this program.

TAILORING

Five counties have done some work in tailoring. The project has been conducted for the first time this year thru local leaders' training schools. The leaders met with the specialist four successive days at some central point in the county. At this time each leader made a coat and received instruction in various tailored finishes which can be used on many garments. Reports from the counties show new coats made, coats remodeled, children's coats and boys' suits made as a result of this project. Here, again, the women are surprised at the results which they can obtain.

CLOTHING EFFICIENCY

The object of this project was to teach women time and labor saving methods in clothing construction. Considerable emphasis was laid on posture, exercise, shoes, corsets, the hygienic properties of clothing and the relation of clothing to health. This project was primarily a course in construction and was followed by a "development course" which considered problems of color, design, style, appropriateness and more difficult and complex constructive processes.

CLOTHING SELECTION

In building a clothing program a long-time program of four years' work has been considered. The women are appreciating the fact that selection is fundamental to all clothing work. Whether the woman sews or buys her clothing ready made, she has the problems of selection of the color, the design, the material, the buying of accessories, corsets, shoes, hose, etc. Consequently, the beginning course is a course in clothing selection, followed by elementary and, later, advanced clothing construction. The ultimate aim of clothing work is:

1. To develop an appreciation for the beauty of simplicity in clothing and a feeling for real value.
2. To enable women to make simple and attractive clothes that do not bear the stamp of "home made."

3. To make possible for these women the achievement of that poise, confidence and consequent usefulness which comes with the realization of being well dressed.
4. To develop a true conception of what is meant by being "well dressed."
5. To develop a spirit of cooperation and helpfulness thru the use of local leaders.
6. To bring about better understanding and cooperation between dry goods merchants and their rural customers.

The clothing selection program has not yet been completed in any instances so results are incomplete. Results of this program cannot be counted in terms of garments made. They will tell in the constructive courses which are to follow, better selection of ready made clothing and better dressed women. Six counties are taking the work in clothing selection. The women have been very much interested in studying their own figures, discovering their irregularities and in discovering the design and color most becoming to their figure and complexion. Already excellent results can be noted.

DRESS FORMS

One county reports that, "Instead of 'have you a little fairy in your home' we might say, 'have you a dress form in your home?'" It would be interesting to know how many miles of gummed paper have gone into the making of these very usable and inexpensive substitutes for a very expensive piece of equipment. Four hundred and sixty-nine dress forms have been made this year. These have been made by women trained by the home demonstration agents.

BASKETRY

The women in a number of counties have been interested in learning to make baskets for home use, for decorative purposes and for sale. Some very excellent basket work has been done and the project has been very interesting to the women.

Food

The food work during 1924 has been carried on along four main lines, preparation, preservation, production and nutrition.

FOOD PREPARATION

The aim of this project is not merely to teach home makers

new recipes, but to give them a knowledge of the principles of cookery and meal planning, to improve thru better preparation the quality of food which goes on the family table. The specialist holds six one-day training schools for leaders. During the course the cookery of vegetables, fruits, sugars, fats, meats, milk and starches, is considered. At the close of each meeting a review is held so the specialist can be sure the work is carried back to the communities accurately.

FOOD IN RELATION TO HEALTH

It is an accepted fact that food bears a marked relationship to growth, vitality, resistance to disease and general health. The prevalence of malnutrition and of many other ailments and low standards of health due to faulty diet make the nutrition project of fundamental importance. Three counties are carrying on a long-time project in nutrition, the object of which is to give the women an appreciation of the relation of food to health and to give them the information necessary to provide a healthful diet for their families and ultimately to raise the standards of health in the home and in the community. It is hoped that some of the immediate results of this program will be increased consumption of vegetables, fruits and milk and decreased consumption of meat, fried foods, rich pastries and sweets. The report from one county is encouraging, "The effect of this study is easy to find when one comes in contact with the women, and eats in their homes. Women of mature age have limited their amount of coffee and meat, have begun to serve cooked fruits, a thing they never did before, and to plan their meals rather than just cook foods available. They are beginning to consider the body needs."

SCHOOL LUNCH

School lunch work done by extension service this year has been largely advisory. It has been the effort this year to work thru the Parent-Teachers' Associations. In two counties the Parent-Teachers' Association from each community sends a representative to a training school once a month at which time the work is given on nutrition, particularly as related to the child and as applied to the school lunch. The result has been a school lunch more suited to the needs of the child and better

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prepared. One county reports eighteen school lunches carried on by Parrent-Teachers' Associations. Some school lunch work has been done in every county employing a home demonstration agent.

NUTRITION CLASSES IN SCHOOLS

During the first part of 1924 three counties were carrying on a nutrition project with classes of malnourished children in the rural and town schools. These children followed a regular food and habit program under the supervision of the specialist and home demonstration agent. Records were kept of the food habits, gains in weight, habits of rest, sleep, play, etc. During the course of the project the children were given instruction at regular intervals. Results have been seen in increase in weight, improved school attendance, better scholarship, better discipline, improved personal health habits, increased consumption of milk, fruit, vegetables. A report from one county is as follows: "The results of weighing and measuring children are quite astonishing. Of 850 children in rural schools, 727 were underweight, 325 more than 10%. At the second survey, 420 were underweight and 184 more than 10%. This means that 786 of the original 850 children gained during the winter and spring months, a time when children are particularly addicted to colds and other diseases. In the spring, reports were secured from 56 rural schools in which 1619 children were enrolled. These reports showed that fifteen times as many children brought milk to school as before the nutrition classes and milk campaign held in October, 1923. In schools where the weights were taken every week, the gain of the milk drinkers varied from one-fourth to one and one-fourth pounds per week." Similar results were noted in the other counties carrying this program.

PRESERVATION

Work in food preservation continues to be popular and necessary. There are still many women who do not know how to cold pack vegetables and meats. Several counties were interested in budgeting the canned goods for the family in order that they might have an adequate supply for winter use. Reports show increased variety of vegetables, greater interest in the

new recipes, but to give them a knowledge of the principles of cookery and meal planning, to improve thru better preparation the quality of food which goes on the family table. The specialist holds six one-day training schools for leaders. During the course the cookery of vegetables, fruits, sugars, fats, meats, milk and starches, is considered. At the close of each meeting a review is held so the specialist can be sure the work is carried back to the communities accurately.

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home garden, more vegetables used on the family table during the winter months.

GARDENING

The production of an adequate amount and variety of fruits and vegetables in the home garden is a necessary antecedent to an adequate diet for the farm family in both summer and winter. Several counties, with the help of the home demonstration agent and specialist in gardening, adopted a budget gardening project for the purpose of increasing and improving the variety of vegetables in the farm garden to meet the food needs of the body and providing a surplus to preserve for winter use. In one county 26 out of 33 club members enrolling in the project report the planting of greater variety. Each member attending the garden meeting tried some recommended variety. The women report better yield and better products for canning obtained by following instructions for planting, care and protection from pests. One county had 86 women from 9 groups enrolled in the project, all of whom adopted some recommended practice.

Home Improvement

One of the biggest problems of rural women is "drudgery," more work to be done than there seems to be time and energy with which to accomplish it. The reasons for this may be many, but lack of efficient equipment, poor arrangement of equipment, inefficient methods of work, lack of planning and organization of the home maker's time are some of the reasons.

WIFE SAVING KITCHEN CONTEST

Since the kitchen is the workshop of the home, the poor arrangement and lack of facilities for carrying on the work in the kitchen effectively, adds much to the home maker's burden. In an effort to lighten the mechanical task of housekeeping, a "wife saving kitchen" program was carried on in nine counties last year. This program was carried on in the form of a contest during the period of January 1924 to July 1924.

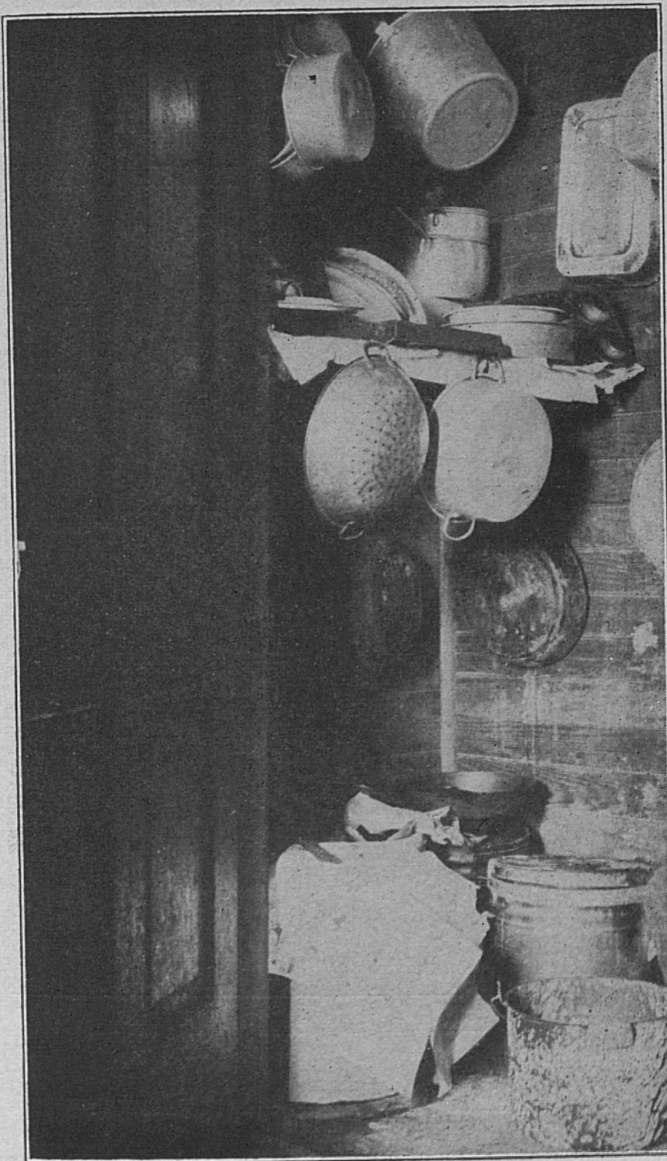
All the kitchens were visited and scored during December and January. The final scoring was done by the specialist during May and June. Kitchens could be entered in any one of the three classes: (1) kitchen showing greatest amount of im-

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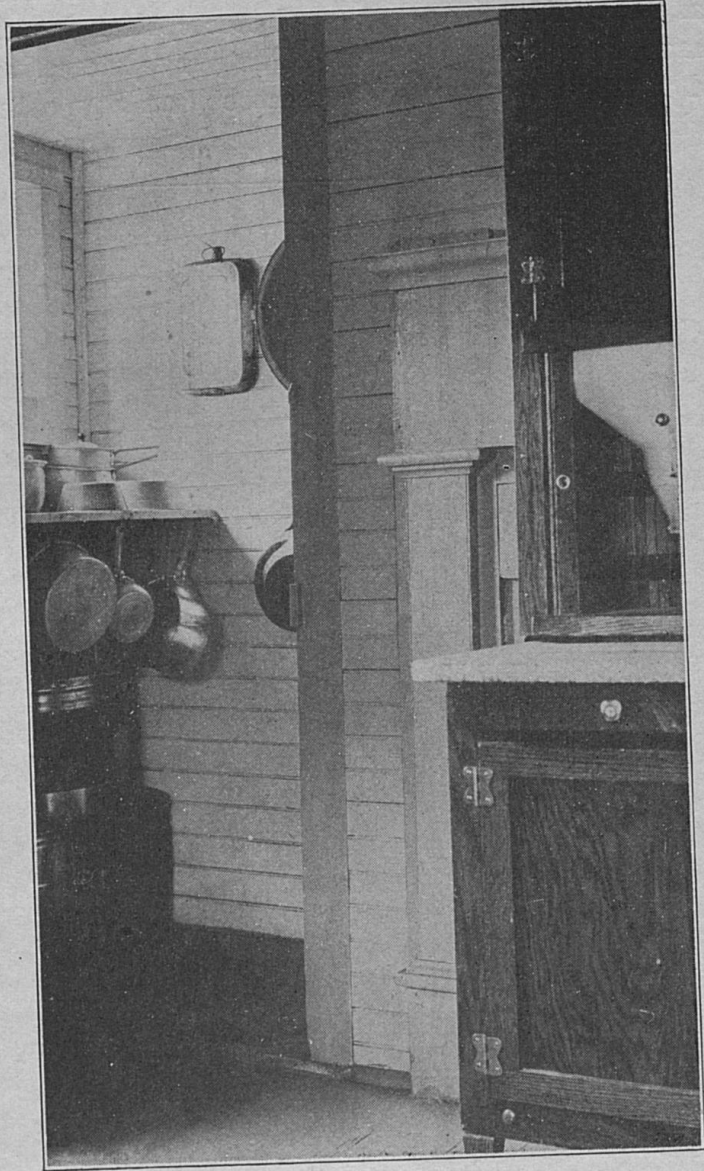
provement; (2) kitchen showing greatest improvement for money spent; (3) kitchen showing greatest improvement without cost. This encouraged women to take part whether they had money to spend or not.

Pictures were taken when the kitchens were scored and on the final visit. About seventy good stereoptican lantern slides were made from these pictures. The very interesting letters received from the women showed more than any other means could what these kitchens meant to the demonstrators.



Pantry before improvement was made.

Improvements are still being made and interest is still keenly alive. A follow-up program has been planned and will be used next spring in all the counties carrying the program this year.

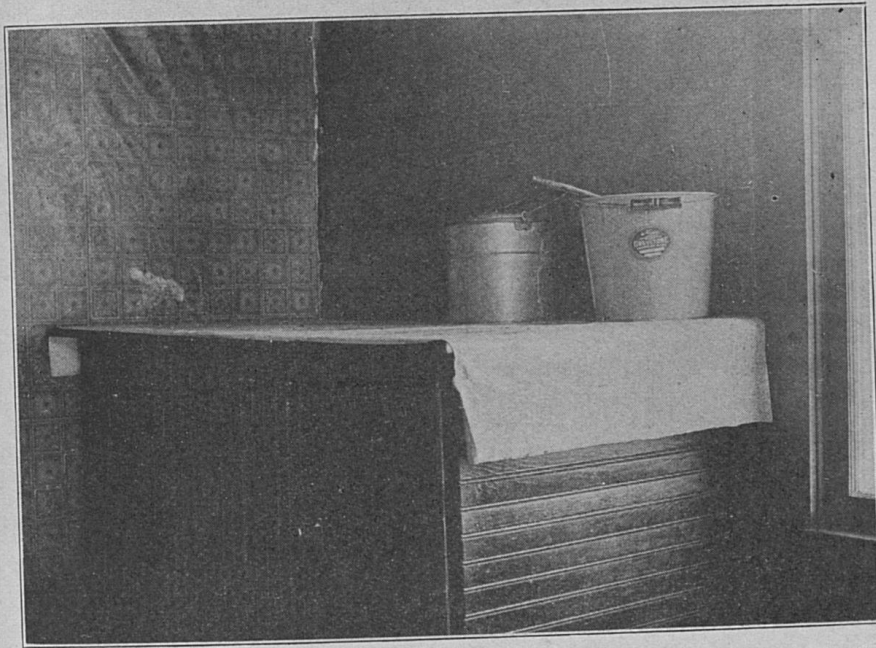


Pantry after improvement was made.

Some of the tabulated results are as follows:

Number of walls refinished..	254	Old cabinets made new.....	21
Woodwork refinished	92	Cabinet work tables made....	36

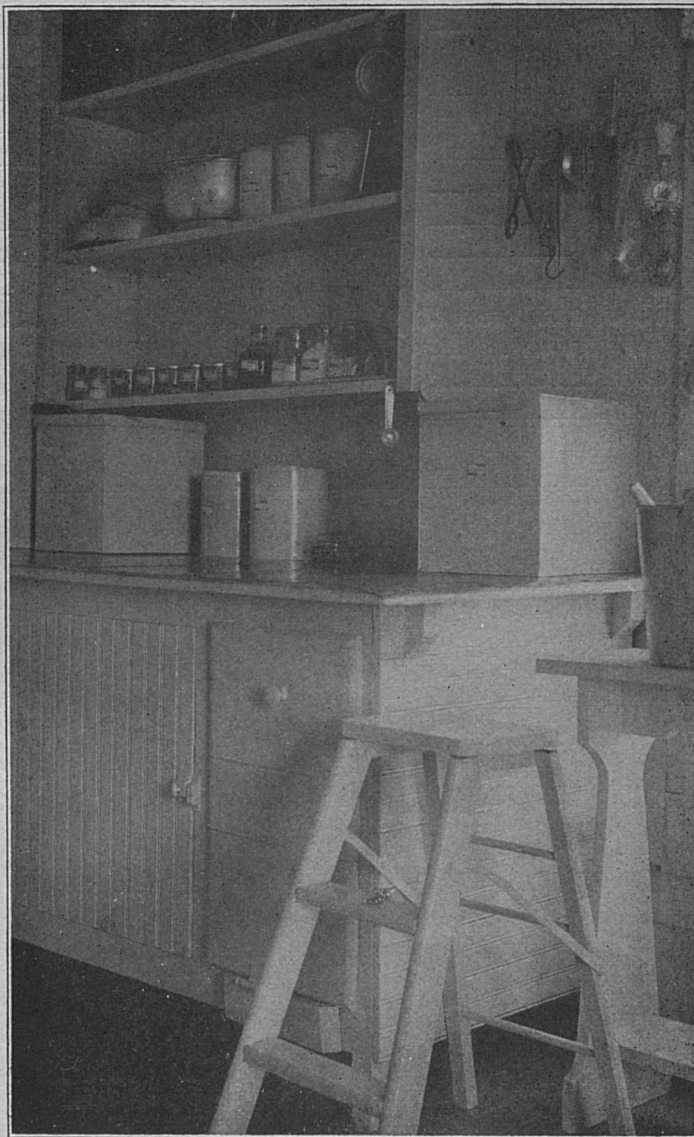
Linoleum on floors (new)....	59	Tables covered with zinc....	36
Floors refinished	28	Tables covered with oil-	
Windows changed or re-		cloth or linoleum	46
paired	44	Stools purchased	52
Simple curtains in kitchens	80	Coal boxes made	46
Screens repaired	39	Push tables made	30
Screen doors added	11	Shelves added to pantries	
Porches screened	17	and near stoves	151
Water installed	52	Lid racks made	101
Sinks added	57	Broom holders made	97
Stoves repaired and cleaned	62	Towel racks put up.....	99
Oil stoves purchased	14	Long-handled dust pans.....	52
New ranges	8	Mixing bowls purchased.....	253
New cabinets	8		



An old kitchen table which was converted into the cabinet shown in the next picture.

Besides these, many small articles and minor improvements have been made.

These kitchens are real community demonstrations. Some of the kitchens were visited by nearly 500 persons for the express purpose of seeing the improvements made. These demonstrators will take an active part in the follow-up program this spring to help others secure "wife saving kitchens."



Home made cabinet made from the old table in the previous picture.

HOME FURNISHINGS

The counties carrying on the wife saving kitchen contest have expressed interest in going on with the rest of the house. Six of the nine counties entering the kitchen contest last year are enrolling in the home furnishing project for January to July 1925.

HEALTH AND SANITATION

An outstanding need in Kentucky is better sanitation in rural homes and higher standards of health.

The home economics extension service in all counties is working to improve health standards. Such activities as the following have been carried on by or under the supervision of the home demonstration agents.

1. Examining children in schools by a county or state health officer. In all instances the children have been weighed, measured, examined for eye, ear, nose, throat and other disorders. Recommendations have been made and followed up and, in many instances, defects corrected. The program has been instrumental in interesting the public in positive health measures.
2. Health clubs in schools. One county reports 19 health clubs with an enrollment of 333 girls. The children keep track of their daily health and food habits, using health cards sent out by the State Board of Health.
3. Screening homes, testing cows for tuberculosis, drilling wells, testing water, building sanitary toilets, trapping flies, killing rodents, have been among other health activities carried on by the home demonstration agent.

Since the girl of today is the woman and mother of tomorrow, anything we can do for the girl is the best possible investment of our time and effort. It is easy to get the interest of girls and easy to change habits and create new ideals. About one-third of the time of the home demonstration agents is devoted to junior club work. Much of the actual teaching of the girls is done by women trained by the specialist.

JUNIOR CLOTHING

There were 3,126 girls in the twenty-four counties having home demonstration agents in Kentucky enrolled in junior clothing clubs in 1924. The junior clothing work is divided into four units, each unit requiring three to four months for its completion. The girls usually meet every two weeks to sew and to discuss problems of dress, color, cleanliness, care of clothing, etc. The aim of girls' clothing work in Kentucky is:

Junior Club Work

1. To teach the girl simple and correct methods of clothing construction.

2. To teach the relation of clothing to health, hygiene of clothing, hygiene of the body, cleanliness of the body and clothing.
3. To teach economy and neatness thru care, repair and remodeling of clothing.
4. To teach the wise selection of materials for clothing thru knowledge of fabrics.
5. To teach the use and alteration of patterns.
6. To develop an appreciation of modest, attractive clothing.
7. To teach the girl the art of being well dressed thru knowledge of color, design, and appropriate dress.
8. To raise standards of living and create a desire for better home surroundings, thru better standards of clothing.

CANNING

Canning work was an important phase of girls' club work during the summer months. The canning exhibit at the state fair was an indication of the splendid quality of canning work done by the club girls. Forty-one thousand two hundred and sixty-six jars of fruits, vegetables, preserves, jellies, and pickles were preserved by Kentucky club girls in 1924.

FOODS

Lack of facilities for carrying on food preparation work has necessarily limited the number of food clubs. Some of the women's groups have furnished kitchens for food classes, consolidated schools are equipping kitchens for food work. It is hoped that more food preparation clubs will be possible another year. The food work with girls is fundamentally important as it is directly connected with the health of the girl and, later, of her family. Four hundred and sixty-eight girls were enrolled in food preparation courses this year.

DEMONSTRATION TEAMS

In order to further the development of leadership among girls, each club has been urged to train a demonstration team. A demonstration team is a group of two or three girls, trained to demonstrate some recommended home making practice. These teams have demonstrated at junior club meetings, women's club meetings, community clubs, county demonstration team contests, fairs, achievement days, etc., and so have been a constructive educational factor in the extension program.

Cooperation with Other Agencies

Home demonstration work in the counties has given very hearty cooperation to other agencies and has received hearty cooperation in return. Reports from the counties show cooperative undertakings between the home demonstration agents, women's clubs, county and state health officials, Red Cross, parent-teachers' associations, county superintendents of schools, rural teachers, Y. M. C. A., Y. W. C. A., business and professional women's clubs, county farm bureaus, boards of trade, chambers of commerce, merchants, and churches. Several counties report better cooperation between town people and rural people, due to mutual interest in activities of the extension service.

Community Activities

The extension work in the counties has not stopped with its home economics program. Both the home demonstration agents and women have expressed interest in community development and community activities.

County and community fairs have been promoted in almost every county carrying a home economics extension program. This offers a splendid opportunity to get people working together, to display the results of their efforts, to set standards of better products thru intelligent and constructive judging of exhibits.

The hot school lunch has been another community activity sponsored by the extension service, also the preparation of better school lunches. Thousands of school children have derived benefit from this project.

Among other community activities reported are: The building of community houses, equipping of school kitchens, furnishing of rest rooms, landscaping of school grounds, beautification of town squares, community singing, community picnics, community clean up days, flower shows, beautification of school houses, church yard beautification, and installing water systems in schools.

One of the outstanding community activities of the year was the farm women's camp held near Louisville for the women

of two counties, the first such camp held in Kentucky. The program was recreational, inspirational, and educational with long rest periods between the different sessions. Food was served by a local church organization. The women had a real vacation and, for some, it was a first vacation. Letters of appreciation from women who attended the camp show that it was a real success. The women wish to repeat the camp next year and they expect to double the attendance. Other counties have expressed interest in such a camp. All preparations and arrangements were made by the home demonstration agents.

Conclusion

It is impossible in this brief report to give even a fair idea of the accomplishments of the year. It would be impossible to estimate the saving of money represented by the canning and gardening work done by the women and girls, also by the clothing work. It would be still more impossible to compute the amount saved in doctor's bills and gained in greater production, due to higher standards of health. Of more importance than all of this is the fine community spirit that is evidenced by the reports from the counties, the better, happier, more alert, intelligent home making that is a result of constructive programs for the home maker.

The following figures give an idea of the activities of the specialists and home demonstration agents.

Statistical Summary

Number visits to counties	279
Number meetings held	315
Attendance	128,629
Local leader training schools	12
Attendance at local leader training schools.....	104
Hats made at leaders training schools	62
Hats made as result of training schools.....	475
Estimated saving on hats	\$1,500
Coats and tailored dresses made	106
No. visits to kitchen demonstrators	244
No. kitchen demonstrators	167
No. kitchens improved	483

Home Demonstration Agents

	Girls	Women
Total enrollment	2,616	2,681
No. girls' demonstration teams trained	76	
Home visits made by home demonstration agents.....		4,199
No. of calls relating to Home Ec. extension work.....		19,578
No. individual letters written		10,905
Fairs at which extension exhibits were made.....		60
No. meetings held by home demonstration agents:		
1. Training schools for local leaders		134
Attendance		1,310
2. Other meetings		2,509
Attendance		40,977

Foods

	Girls	Women
No. communities carrying food preparation project....	39	40
No. members enrolled	468	499
No. homes adopting improved practices		1,231
Fruits and vegetables canned—quarts	36,313	206,008
Meats and fish canned—quarts	700	6,332
Jelly and preserves made—quarts	2,664	29,889
Meats cured—pounds	200	48,700
Fruits and vegetables dried—pounds	1,064	20,607

Nutrition

	Girls	Women
Number of project groups	16	48
No. homes adopting improved practices in nutrition..		1,137
No. children directly benefited by hot school lunch....		1,493

Home Gardens

	Girls	Women
Number of demonstrators	84	192
No. of homes adopting improved practices		392

Clothing

	Girls	Women
Number of groups	543	99
Members enrolled	3,126	1,441
Number dress forms made		469
Number dresses and coats made	1,475	619
Number undergarments made	2,788	1,281
Number hats made	179	1,431

Home Improvement

Number kitchens planned and re-arranged for convenience.....	340
Number homes adding labor saving equipment.....	806
Water systems installed	44
Number rooms improved	491
Number homes adopting improved practices in home furnishing	487
Number homes beautifying home grounds.....	578
Number homes screened for first time.....	174
Number homes adopting recommended health practices.....	1,094

Junior Club Work

J. W. WHITEHOUSE, State Leader

STATE PLAN OF WORK, 1924

The state plan of Junior Club Work for 1924 was based upon the county plans submitted by the county agricultural and home demonstration agents, with the addition of special activities fostered by the club department.

ORGANIZATION

Each field agent in club work has a group of counties assigned to him in which he assists the county and home demonstration agents to plan and execute their programs. These group assignments are not strictly adhered to by the field agents. They are assigned work in each other's territory when it is desirable for them to do so. The field agent in girl's work has charge of all girls projects in the state. Each field agent also has special assignments in the various activities of the department.

GENERAL WORK

During the year 1924 assistance was rendered the county and home demonstration agents in securing their enrollment, organizing project groups and community clubs, securing and training local leaders, helping to arrange for fairs, shows, tours, picnics, parties, achievement day exercises, etc. The field agents, after attending to the calls that come from counties with agents gave all their additional time to counties without agents, who asked for assistance.

SPECIAL ACTIVITIES

The special activities of the Club Department were Junior Week, Junior Club Camps, State Fair Exhibits, Livestock Judging Contests, State Livestock Shows and Sales, and Educational trips to the International Livestock Show.

JUNIOR WEEK

Junior Week was held at the University, June 9-14 and was attended by 509 club members from 67 counties, 24 local leaders and 58 county and home demonstration agents. This is

the largest number that has ever attended Junior Week. The L. & N. Railroad Company gave a prize trip to Junior Week to 48 club members and the L. H. & St. L. to 4 club members. Some club members came as representatives of their clubs with expenses paid by the club.

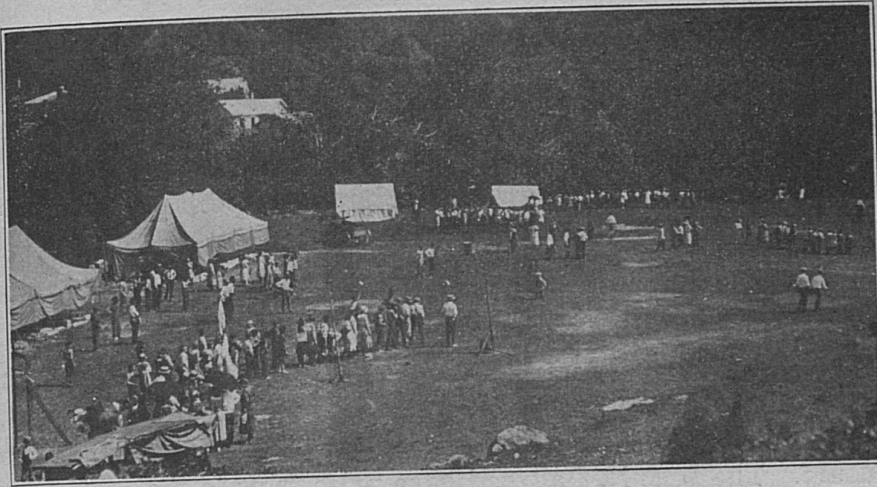
Courses were given to boys in soils, farm machinery, poultry, dairying and livestock judging and to girls in foods, clothing and household furnishing. Plays, games and contests had a large place in the program. Inspirational speakers addressed the club members, among them being the Governor of the State.

One of the principal features of Junior Week was the demonstration team contest. The contest was made up of two divisions, one in farm practice demonstrations and one in home practice demonstrations. Eighteen teams were entered in the former contest and fifteen in the latter, making a total of thirty-three teams. Three hundred dollars in premiums, contributed by Louisville men, was awarded in each contest. Counties being represented in these contests were Ballard, Breckinridge, Caldwell, Campbell, Carroll, Crittenden, Daviess, Fayette, Graves, Henderson, Hickman, Jackson, Hopkins, Jefferson, Larue, Laurel, McCracken, McLean, Marshall, Mason, Mercer, Muhlenberg, Nelson, Pulaski, Shelby, Taylor, Warren, Wayne and Lee.

The real purpose of these demonstration teams is to teach an improved farm or home practice to the farmers and home makers in their respective counties. One county agent who had a caponizing demonstration team in the State Contest has now in his county 1,200 fine capons ready for market. Demonstrations were given in 190 communities.

CAMPS

Thirty-four club camps were held this year to which 48 counties sent club members. Two thousand four hundred and eighty-three club members, 161 local leaders and 36,483 visitors attended the camps. The camps were arranged in four groups under the direct management of the field agents in club work and the county and home demonstration agents. The instructors sent out by the Extension Division of the College of Agriculture, consisted of the camp manager, a specialist in agriculture, one in home economics, and one in nature study. The



Birds'eye view of 1924 club camp at McKee. (155 members in attendance.)

State Y. M. C. A. sent a representative to each of the camps except two. These men had charge of the recreational activities and took part in the educational program. The State Board of Health sent a nurse or doctor to 18 camps.



A Junior Club Camp and visitors attending lecture.

STATE FAIR EXHIBITS

The State Fair Board offered this year \$1,728.00 in premiums on exhibits made by club members.

The exhibits showed continued improvement in quality. In dairy cattle an increased number of entries also was apparent. A prize educational trip to the National Dairy Show was given to the State Champion in Dairying.

The quality of the girls exhibits was especially commendable.

LIVESTOCK JUDGING CONTEST

Forty-seven teams competed in the Junior Livestock Judging Contest held at the State Fair. This training in the best and most profitable types of livestock to select will, no doubt, be reflected in the quality of livestock on Kentucky farms in the future. The L. & N. Railroad gave prize trips to the State Fair to 37 teams and the L. H. & St. L. to 4 teams.

The State Fair Board gave \$350.00 and the Courier-Journal \$200.00 in premiums in this contest. Owen County has the champion team.

STATE LIVESTOCK SHOWS

Lamb Show and Sale. The first lamb show and sale for club members was held at the Bourbon Stock Yards in Louisville, July 15th. One thousand and forty-four lambs were entered from nine counties. The champion lamb sold for 75c per pound. All of the lambs brought more than the market price.

Swine Show and Sale. The second swine show and sale was held at the Bourbon Stock Yards in Louisville, September 26th. On account of the wide margin between the price of corn and hogs, only 366 hogs were entered. The selling price was satisfactory and those who had entries were well pleased.

Baby Beef Show and Sale. Three hundred and seventy-four calves were fed and exhibited by 194 club members at the Third Annual Fat Stock Show and Sale in Louisville, December 10, 11 and 12th. Two hundred and twenty-six club members and their parents attended this show. The premium for the grand champion carload went to club members in competition with fifty carloads fed and exhibited by the best adult feeders in Kentucky and Tennessee. The champion steer sold for 80c per pound and the average price for all carloads was \$12.20 per hundred.

In conducting the Baby Beef, Fat Hog and Spring Lamb Shows and Sales, it is the purpose of the Club Department to so conduct these enterprises that they may serve as demonstrations along the following lines:

1. The value of a purebred or high grade over a low grade or scrub stock.
2. The value of purebred sires.
3. The best known methods in care and feeding.
4. Cooperative marketing.

THE INTERNATIONAL AND THE NATIONAL BOYS' AND GIRLS' CLUB CONGRESS

Thirteen club members from Kentucky attended the International and the Third National Boys and Girls Club Congress held in Chicago, December 1-6. The state champion livestock judging team participated in the National Contest. Kentucky had exhibits in clothing and canning and received third award on each exhibit.

STATISTICAL REPORT

Number of chartered clubs	47
Number of certificates of merit issued	268
Number of certificates of achievement issued.....	1,543

CLUB ENROLLMENT—1924

County Agents.

LIVESTOCK.

Swine	1,561
Poultry	5,734
Sheep	307
Dairy cattle	478
Beef cattle	297

8,377

CROPS.

Corn	964
Tobacco	287
Potatoes	529
Soybeans	128
Gardening	173
Cotton	59
Alfalfa	7
Miscellaneous	511

2,658

Canning	5
Clothing	745

750

11,785

HOME DEMONSTRATION AGENTS.

Canning	1,177
Clothing	3,721
Miscellaneous	908

5,806

5,806

COLORED WORK.

Corn	87
Tobacco	18
Potatoes	31
Gardening	48
Miscellaneous	23
Dairy cattle	1
Swine	127
Poultry	373
Canning	229
Clothing	20

957

957

18,548

Public Information

C. A. LEWIS

During the year, 1924, approximately 1,000 news articles were sent out by the Department of Public Information. They went principally to daily and weekly newspapers within the State, farm journals and the Associated Press.

The mailing list contains the names of 30 daily newspapers and about 200 weeklies. These receive by mail a group of articles covering the various phases of work done by the Extension Division, the College of Agriculture and the Experiment Station.

The material is favorably received and liberally published by many newspapers, both daily and weekly. Every newspaper office is flooded with many kinds of propoganda, cloaked in various guises, but the reception accorded the College's publicity material is excellent.

Many dailies and weeklies use one or more articles from each weekly batch, while a large number use a column or more and several use a full page. It is not to be expected that all newspapers receiving the material from the College use all the articles sent out.

The Associated Press, which serves some two dozen dailies in the State, uses many College articles, either thru its Lexington offices or its state correspondent at Frankfort. From two to five articles a week have been sent out by wire from its Lexington office and the number is likely to be increased.

The regular weekly mail news service is sent to the Associated Press correspondent at Frankfort who rewrites some of it for remailing and remails other articles as they are sent from the College. This service gives greater assurance that the material will be fully used.

A picture or mat service is being developed which is meeting a cordial reception by 30 newspapers in the state equipped to use mats for reproducing pictures. The few mats that have been sent out have been widely used and are highly appreciated. There is reason to believe that mats offer a fruitful field of service.

The information service offers a broad and highly useful field, both from the standpoint of the farmer and the newspaper. Thru it the College can be of invaluable service both to agriculture and journalism.

Movable Schools

N. R. ELLIOT

During the year 21 Movable Schools were held in 14 different counties. These schools were held in counties where they had not been held before, following the policy of holding them in different counties each year.

These schools were of one, two, three and four days duration, depending upon conditions. The most satisfactory schools held this past year were those in which a definite number of people signed up for certain specific instruction in one or two subjects. This method of holding the schools was a new departure and is the method that will be pursued very largely in the future.

The attendance at these schools was more than satisfactory and the interest was greater than any past year. At each school all of the specialists had specially prepared material either in the form of charts, lantern slides, or some other form of illustrative material, and in addition several of the specialists gave demonstrations.

At some of the schools demonstrations in lime crushing were given. These demonstrations proved exceedingly interesting and were the means of selling lime crushers in the State the past year.

One or more Movable Schools were held in each of the following counties: Marion, Knott, Morgan, Christian, Clark, Trigg, Warren, Pulaski, Trimble, Grant, Shelby, Lincoln, McCracken, Rockcastle and Madison.

MOTION PICTURE FILMS

The use of our motion picture films has increased by leaps and bounds and the demand is far greater than the College can supply with its present stock of films. On December 1, 1923 the College owned seven different motion picture films of one or two reels each. Within the year twenty-two pictures have been added to this list. These pictures deal with agriculture

and home economics, scenics, comics, making a total of 29 different pictures that are the property of the Extension Division. Besides these the College has some pictures loaned to it for an indefinite period. Much use has been made by the College of the U. S. Department of Agriculture's large assortment of films.

The total attendance at the meetings where films were shown was 28,827. This is a marked increase over last year, which was 16,740.

STEREOPTICON SLIDES

The college now has 35 sets of slides dealing with practically all phases of agriculture and home economics, with new sets being added from time to time. These slides are in more or less constant use over the State, as they are used by County and Home Demonstration Agents, Schools, Farmer's Clubs, and any organization that can make good use of them.

FARM AND HOME CONVENTION

The Farm and Home Convention held at the College of Agriculture, January 29, 30, 31 and February 1. At this Convention there was an attendance made up of people from 47 counties. This was the largest number of counties ever represented at any of these Conventions. The program consisted of three parts: Agronomy, Livestock and Farm Economics in one group; Poultry and Turkey Raising in another, and a Rural Life Conference in another group.

STATE FAIR

At the State Fair, Louisville, September 8 to 13, the College made exhibits from 13 departments representing practically all phases of Extension work in Agriculture and Home Economics. The lines of work exhibited were Boys' and Girls' Clubs; Better Sires; Poultry; Lamb Improvement; Marketing; Soils; Crops; Home Economics; Horticulture; Vegetable Gardening; Dairying; Farm Management and Agricultural Engineering.

The interest manifested in these exhibits at the Fair this year far exceeded that of any previous year. Large crowds attended the exhibits throughout the entire week.

Agronomy

GEORGE ROBERTS, Head of Department

SOIL IMPROVEMENT WORK

The work in soil improvement was carried on under the following projects:

1. Soil erosion control by terracing.
2. Drainage demonstrations.
3. The use of liming materials.
4. The use of phosphates.
5. Use of a mixture of acid phosphate and a small amount of limestone.
6. Fertilization of tobacco with high-grade mixtures, both purchased and home mixed.

SOIL EXPERIMENT FIELD MEETINGS

As in former years meetings were held on most of the soil experiment fields for the purpose of showing the results of various soil treatments. Such meetings were held in July and August on the Berea, Campbellsville, Greenville, Russellville, Hopkinsville, Lone Oak and Mayfield experiment fields. The attendance averaged 245.

Some of the striking results obtained on these fields and presented to the farmers are given below:

The season for corn was very favorable at Russellville last year, and an opportunity was given to demonstrate the improvement that may be made in a soil over a period of years by a rational treatment. The manured check plots made an average of 22 bushels per acre while the plot treated with manure, limestone and acid phosphate made 93 bushels per acre. Manure, limestone and rock phosphate made 89 bushels.

At Hopkinsville the untreated check made 11 bushels of wheat per acre while the plot treated with limestone and acid phosphate made 28 bushels per acre. At Russellville, the manured check made 7.2 bushels per acre, while lime and acid phosphate made 18.4 bushels.

At Greenville the check plots made 3.3 bushels per acre, while the plot treated with limestone and acid phosphate made 20 bushels. At Mayfield the corresponding treatments made 2.6 bushels and 27 bushels.

Cotton having come into prominence in the western part of the State, the cotton work on the Mayfield experiment field attracted much attention and made a demonstration of much significance. One of the series of plots that had been under rotative cropping since 1913, with plots differently treated, was used for cotton. A second-year crop of clover was plowed under with a very good growth on the treated plots. Some of the yields of seed cotton are as follows:

Unfertilized and unmanured	205 lbs. per acre
Manure	470 lbs. per acre
Manure, limestone and acid phosphate	740 lbs. per acre
Manure, limestone, acid phosphate and potash.....	1,485 lbs per acre

The average yield of clover on the western fields was 630 pounds for the untreated plots, and 3,350 for the plots treated with limestone and acid phosphate.

The annual meetings of farmers on these fields have been a big factor in the introduction of better farm practices.

In addition to the annual meetings many farmers visited the fields on their own initiative throughout the year. At Mayfield it is estimated that about 75 farmers per month visited the field during the growing season. Many parties are brought to the fields by County Agents and others, there being about 20 such parties to visit the Greenville field during the year. Many of the visitors are from outside the county.

TERRACING

Twenty-five terracing demonstrations were conducted in 17 counties by specialists from the College, and additional demonstrations were conducted by county agents as a result of the efforts of the specialists. Eight classes in agriculture from Smith-Hughes schools in 6 counties were brought to demonstrations by their teachers. Teachers were instructed in the making and use of the Kentucky Variable Farm Level with which to conduct additional demonstrations. In several instances farmers have procured the necessary equipment and are laying out terraces for themselves.

The value of a permanent type of demonstration such as a well terraced field, is illustrated by the results secured from a terracing demonstration held in Marion County in 1920 on the farm of C. H. Blanford. Several neighbors have terraced

fields this year who were convinced of the value of terracing as a means of preventing erosion, only after four years' observation of the results obtained. One of Mr. Blanford's neighbors has purchased a farm level constructed a terrace drag, and is doing terracing work for his neighbors.

Terracing should become a general practice on all lands subject to washing. Erosion is the greatest cause of loss of fertility from Kentucky soils, and terracing is a very effective aid in preventing it.

DRAINAGE

There is a large amount of land in Kentucky needing tile drainage. Large areas of such lands are found in the Western Coal Field and in the creek and river bottoms of the Purchase Region. In almost any part of the State are to be found "draws" and bottoms in need of drainage. The improvement or reclamation of such lands by tile drainage is a profitable investment.

Sixteen drainage demonstrations were conducted during the year and help was rendered on the work to secure the establishment of two drainage districts, one in Wayne County and one in Hopkins County.

The following is an example of the results of a drainage demonstration in Hopkins County:

Mr. Whitfield requested thru County Agent W. D. Sutton, that a drainage demonstration be established on his farm, and signed an agreement to keep cost records and records of yields obtained. The survey for the system which covered 47½ acres developed the fact that had Mr. Whitfield gone ahead with his own plans without an accurate survey, a considerable sum of money would have been spent in attempting to install an outlet which could not have been given sufficient fall to drain the desired area. The survey also showed that very careful work was required in laying the tile to grade since the laterals which were 2,000 feet long and the main which was 960 feet long did not have more than one-tenth foot fall per 100 feet. In order to secure perfect drainage, the first year, the laterals would have had to be so close together that the cost of installing the system would have been prohibitive. A lateral spacing of 80 feet was adopted which made the system cost \$35.00 per

acre. Complete drainage was not expected the first year, but as the land became more porous as the result of aeration, complete drainage will be secured.

The drainage system was complete just before the land was prepared for a crop of corn, so that circulation towards the drains had not become well established before the crop was planted, and before heavy rains began which continued until the corn was six or eight inches high. For a period of several days at different intervals the back water from Elk Creek covered the entire field.

In spite of these adverse conditions, Mr. Whitfield reports an average yield of 35 bushels of corn per acre or 25 bushels increase due to drainage. Where one line of tile was omitted, the crop was not worth harvesting. The tile lines drained the land satisfactorily to a distance of 30 feet to each side of the laterals. It is expected that the additional ten feet will be thoroly drained during the coming year. Mr. Whitfield is planning on draining other areas, following the same general plan of installation.

THE USE OF LIMING MATERIALS

LIMESTONE

An effort was made to determine the increase in the use of limestone in 1924 over 1923. In an area of 29 counties canvassed the increase was 220 per cent. For the whole state it is probable that the increase was over 100 per cent. In certain counties the use of ground limestone has greatly decreased, due to the discovery of marl which can be used more cheaply.

Agents reports from 35 counties show an average of 20 farmers per county using limestone for the first time. The use of limestone is extending into the Bluegrass counties. Portable crushers are coming more into use each year.

MARLS.

As the result of the discovery of marls in a number of counties last year by Mr. S. C. Jones, County Agents and farmers have been on the lookout for deposits during the year, the result of which has been the discovery of marl in more than 50 counties.

To date 820 samples of marl have been analyzed by the



Madison County club members receiving a talk on the subject of marls, sitting on a marl bed, with a back ground of black locust and sweet clover growing out of the top of the marl bed.

Department of Chemistry. Most of these marls range from 40 to 90 per cent limestone with an average above 50 per cent.

Reports from 18 County Agents show that 154 farmers have used marl during the year.

Without doubt the discovery of and promotion of the use of marls is a matter of far reaching good results. The cost under average conditions of applying marl is about 50 cents per ton. Four tons per acre is usually sufficient. It is estimated that more than 30,000 farms in the marl region can be limed within a three mile haul.

FERTILIZER DEMONSTRATIONS

More than 2,000 fertilizer demonstrations were reported by County Agents, most of which were with acid phosphate. Some of them were demonstrations to encourage the use of high grade mixtures on tobacco to offset the use of low grade mixed fertilizers. Home mixing of tobacco fertilizers was recommended by the Department of Agronomy.

In one county having a County Agent for the first time, the sales of acid phosphate were reported to have increased 50 per cent. The economy in the use of acid phosphate instead of mixed fertilizers for the ordinary farm crops has been so

well established experimentally and so well demonstrated in practice that the project has largely assumed the campaign stage. However, much remains to be done on the use of high grade mixtures and home mixing of fertilizers for tobacco.

The report of Kenton County states:

"During the year the County Farm Bureau in cooperation with the local bank at Independence bought approximately 100 tons of fertilizers for the farmers of the county besides the farmers who bought through other channels. These fertilizers were mixed by the farmers themselves in accordance with the formula supplied by the Department of Agronomy at the Experiment Station, Lexington, Ky. Excellent results were obtained by those who used the fertilizers."

Through the advice of the Department, many farmers use nitrate of soda on tobacco beds, and some agents report the practice as becoming universal.

LESPEDA

This year three hundred and ninety-three demonstrations with lespedeza were made in 31 counties on farms where it had never been used before. Practically all demonstrators were convinced of its value and will increase their acreages. Lespedeza is now recognized as a crop of great possibilities in Kentucky and more time is being devoted to it each year.

Agents in the Purchase section were interested in the possibilities of lespedeza seed saving. Two model seed pans were shown at soil experiment field meetings at Lone Oak, Mayfield, Hopkinsville and Greenville. Much interest was aroused. Not more than two or three men had ever before used seed-saving pans in Kentucky. Later four types of pans were offered for sale by local hardware and implement stores during the season.

Results indicate that altho the seed crop looked light in September, between 5,000 and 10,000 bushels of seed were saved. It seems easily possible to build this industry to 100,000 bushels annually and that is the goal set for the next few years.

More than 500 bushels of lespedeza seed were purchased cooperatively this spring in Calloway County.

In Shelby County 118 bushels were placed with 56 different farmers and sown on about 400 acres. Out of the 56 farmers trying this crop, only 2 failed.

In Graves County farmers bought lespedeza pans for saving seed; 33 farmers bought material and made their own pans. There were something like 5,000 bushels of seed saved, more than double any previous year. Considerable seed was saved in other parts of Western Kentucky.

KENTUCKY EXPERIMENT STATION ROOT-ROT RESISTANT TOBACCO

It is estimated that 75,000 acres or more of this tobacco were grown this year. In the spring of 1924, 1,152 lots of Kentucky Experiment Station root-rot resistant White Burley Tobacco seed were distributed thru county agents and 78 by mail to growers in non-agent counties. This is the third year that seed has been distributed on a large scale.

Seven hundred letters of inquiry were mailed this summer to growers who received seed. One hundred fifty replies capable of tabulation were received. Of these replies, 71 report the root-rot resistant quicker starting, 34 equal and 7 slower than local sorts. Resistant required most resetting on 8 farms, local required most in 53 and they were equal on 36. Resistant grew faster on 72 farms, local on 8 farms and they were equal on 31. Resistant matured first on 62 farms; local first on 10 and they were equal on 24. Resistant only will be grown in 1925 on 69 of these farms, both on 15, local only on 18, and no opinion was given in regard to the remainder.

R. M. Heath, County Agent, Washington County, says: "Last year we distributed 50 samples of root-rot resistant tobacco seed which was the start for this county. During March, 1924, we held four meetings in the interest of this tobacco. All were well attended and the effect can be summed up by quoting one of our large tobacco growers who attended. He said: 'I attended the meeting with the intention of planting my own tobacco seed, but I was convinced that the resistant variety was best for me. So I expect to buy this variety and have my tenants sow all of their beds with it.'

I believe that by a conservative estimate 65 per cent of all the tobacco grown in Washington County was of the resistant

sort and thru this channel the College has reached many homes that had never been reached before. All of the local seed dealers handled the seed one dealer stated that he sold 177 different growers in this county the resistant variety."

W. R. Gabbert, County Agent, Fayette County, the largest Burley growing county in Kentucky, gives a record which will summarize the situation for the State. He says: "The introduction of the root-rot resistant strain of Burley tobacco has been continued this year and the results secured are very similar to those of 1922 and 1923. Seventy-three packages of seed were distributed in the spring, largely to local leaders, the idea being to test this small amount of seed along side the local variety and thereby determine its worth on diseased or 'tobacco tired' land. After 40 of the reports secured from growers were tabulated, the figures obtained were so similar to those of previous years that no attempt was made to check up on the other 33.

Of the 40 reports secured, 6 failed to plant the seed. Ten of the remaining 34 had secured sufficient of the resistant seed to plant their entire crop of 116 acres and this eliminated their records from tabulation. Of the 24 reports tabulated for comparison, 13 showed the resistant to be the more uniform of the two types under consideration. In 16 of the 24 the resistant had made a more rapid growth and in 9 of the 24 the resistant was the most uniform in addition to making the most rapid growth. While 10 of the demonstrations showed no variation between the two tobaccos as grown in the field, there was not a single demonstration in the 24 where the local was more uniform or had made a more rapid growth than the resistant. In every case where the resistant was decidedly superior to the local in growth and uniformity the field was found to be heavily infested with root-rot.

Three years' work with this tobacco justifies the conclusion that resistant tobacco is an inexpensive insurance against crop failure.

The fact that 10 of the 34 men planted their entire crop to this variety is proof of its popularity. Mr. Ross Whalen of the Land community, a veteran tobacco grower, said: "This is the

best crop I ever raised and it is not on the best ground either." This remark was made with reference to a 45-acre field of resistant tobacco.

A very conservative estimate of the increased value per acre is \$10. This is but 5 per cent on an acre yield of 800 lbs. worth 25 cents per pound, or \$200 per acre. The tobacco work on this project alone has been worth far more than \$750,000 to the owners of the 75,000 acres of root-rot resistant Burley tobacco in 1924. This increase in value will become greater each year as the strain becomes more universally grown.

COTTON

Cotton Variety Demonstration Tests

Seed for 51 variety test demonstrations was distributed in 12 counties including all counties in the Purchase section. The varieties distributed were Trice, Express, Acala and Cleveland. The cold, wet prolonged spring resulted in 18 of these failing to make a stand. Yield reports are expected from all remaining tests. At the present date (December 1) the last picking is yet to be done.

Cotton Fertilizer Demonstrations

Sufficient fertilizer for 24 demonstrations was distributed in the same counties having cotton variety demonstrations. The Experiment Station furnished nitrogen and potash materials and the growers purchased phosphate.

Alfalfa

The total acreage of alfalfa sown in counties served by agents in 1923 was reported as 1,436. This year there is reported a total of 663 demonstrations, with 14,823 acres sown. Eight counties sowed about 1,000 acres or more, Grant leading with 4,000.

The effort is made to convince farmers that alfalfa can be established *cheaply* and *easily*. Two tons of limestone instead of 4, are being recommended. Farmers are also being advised to sow in spring instead of only in the fall, and to sow on any soil that will grow corn instead of thinking that only the most fertile field on the farm may grow alfalfa.



200 pounds acid phosphate and 100 pounds nitrate of soda produce more and earlier opening bolls. Farm of B. L. Ringo, Hickman County, Sept. 29, 1924.

An alfalfa and limestone campaign in the 18 counties immediately surrounding Lexington is under way. The average percentage of legumes or improved land acreage is about 3. The acreage of alfalfa per county is from 0 to 700. The goal is 5,000 acres per county at the end of 3 years or by December, 1927.

The following extracts from the report of County Agent Hill in Nelson County is typical of a number of counties:

"We were led into starting this campaign partly by the work done in trying to start a purebred cattle organization and partly by the general cry of 'No feed' for every class of live stock. We had not done much work except observation on alfalfa heretofore. The last census indicated 336 acres of alfalfa in the county and we have just about held that acreage, sowing around a hundred acres every year, and about that much dying out.

We had observed that on the overflow bottoms along the Beech Ford and Rolling Fork Rivers and along several creeks in the county, alfalfa was being grown with no special preparation whatever. On our red uplands liming was required, but the stands were usually good for a number of years and with fine

yields. It was also pointed out that the limestone hills in the northwestern section of the county were identical with the hills of Northern Kentucky where a great acreage is sown.

In putting over this campaign, the first thing we had to combat was the rather general opinion that alfalfa was a hard crop to grow and handle and that there was some mystery about growing it. This was really the critical problem of the campaign as nearly every farmer wanted alfalfa but looked upon it as too hard a crop to grow.

The result of our campaign was that 830 acres were sown by 124 men in the spring. This was at least four times as much as we had ever sown in a whole year before.

The common practice had been to sow alfalfa in the fall, and fully as much acreage was promised for fall sowing as was sown in the spring. Much of this was to be sown following tobacco, which practice has proved successful where the seasonal conditions were right. However, seasonal conditions worked against fall sowing this year, and in favor of spring sowing. Altho we had expected fully as large an acreage as was sown in the spring, only about 100 acres were finally sown and much of this got a poor start for winter.

Nine men sowed alfalfa on ground they limed this spring just before sowing. The amount spread was two tons per acre,



Making three cuttings of alfalfa from where none grew before.

which has proved sufficient on most all of their ground. All of these men were at least fairly successful in their sowing.

Twenty-three men sowed on land which had been limed at least a year previously, most of this being limed at the rate of two to three tons per acre and practically all of these men also were successful.

Seven men have spread marl in order to sow alfalfa, all of this sowing being in the fall. This marl averaged about 55 per cent lime and was used at the rate of about 8 wagon loads per acre. All the rest of the 142 men sowing this year have done so without liming.

As a result of this campaign, we now have fields of alfalfa growing in every section of the county, and everywhere in the county other men are planning to sow next year. We expect to see at least 2,000 acres sown in the county next year.

Corn Variety Demonstrations

Seed for 96 corn variety demonstrations was furnished by the Experiment Station to be conducted by County Agents. This is the fourth year of the test. In each of the three former years Pride of Saline has led, with Boone County White second.

Soybeans

Soybeans continue to increase in importance.

The acreage sown in 55 counties totals 33,000. Thirty-eight of those counties give comparable figures for 1923. The sum of these in 1923 was 15,151 and in 1924, 22,155 acres. This shows an increase of approximately 50 per cent.

The production of seed is growing slowly. More than 16 new harvesters of the Carolina type were bought this year. The machines operate with fair to great satisfaction in all cases but two. Records at hand show less than 1,000 acres grown for seed.

Farm Engineering

FARM BUILDINGS

The farm buildings of Kentucky are notably lacking in sunlight, ventilation and convenience. The custom prevails of using heavy timber construction for stock barns as a result of practices adopted when there was a plentiful supply of such building material.

The subproject in farm buildings is intended to correct these conditions by encouraging the construction of buildings with ample sunlight and ventilation and by recommending the use of the gambrel roof type of construction which calls for lighter materials rather than the heavy timbers which are becoming scarce and expensive.

A circular published in April of this year gives a list of 76 stock plans which have been distributed at a cost of ten cents per sheet. Seventeen sets of building plans consisting of ten plans per set were loaned to each county agent for office use. Special building demonstrations have been established where special designs were required. In these cases the College supervised the work.

Farm Building School. A four-day farm building school was held in cooperation with the Kentucky Retail Lumber Dealers Association. There was a great deal of interest and those attending requested that a similar school be held next winter.

Summary. The goal for the year was the establishing of 20 special building demonstrations and the distribution of 600 sets of building plans. Twenty special building demonstrations were established and 740 sets of plans distributed. 120 sets of plans were sent into states other than Kentucky. A summary of the work done in connection with the farm building subproject is as follows:

Total number of sets of building and equipment plans sent out	740
Number of counties receiving plans	70
Number of special building demonstrations	20
Number of office consultations	39
Number of farm visits	30
Number of new plans prepared	15
Total number of people assisted with buildings during year.....	583

SANITATION

Water Supply. The sanitation subproject includes both water supply and sewage disposal. The need in the State is for simple, inexpensive systems that will provide some of the conveniences of modern sanitary systems at slight expense. The simple hot and cold water systems and the pitcher pump installation have been emphasized more than the systems of greater cost. The goal for the year has been the installation of sixty water supply systems in fifteen counties. Seventy demonstrations were established of which sixty-three were completed during the year. Lectures on simple water supply systems were given in ten counties to the women enrolled in the kitchen campaign conducted by Miss Mary May Miller. Fifty-seven systems were installed as a result of this work.

An example of what can be done in the way of providing running water with little expense is illustrated by the installation on the farm of L. E. Stevens, of Kevil, Kentucky.

Mrs. Stevens' two sons, Eugene 13, and Cary 14, installed all of the pumping and storage equipment necessary for a gravity system. The gasoline engine, pump jack and storage tanks were secured from the junk pile of their father who operates a country garage. A pencil sketch of the proposed installation furnished by the Specialist in Agricultural Engineering was the only form of assistance received.

Sewage Disposal. In addition to the water supply systems mentioned, special assistance was rendered in planning a number of sanitary sewage disposal systems.

LIME BURNING

A majority of the farmers of Kentucky appreciate the value of lime in increasing the fertility of their soils but need much assistance in securing lime cheaply.

Last year it was demonstrated that the farmers who had limestone and wood on their farms could secure lime at a reasonable price by burning it in kilns according to plans furnished them by this department. The cash outlay for the work is practically nothing. Where \$1.50 a day is allowed for labor and \$2 a cord for wood, the average cost is to \$2.18 per ton for preparing limestone for field use by burning.

The goal for the year was demonstrations in five counties. Four special demonstrations were established in two counties and plans were mailed to 17 farmers in 13 other counties.

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Animal Husbandry

E. S. GOOD, Head of Department

BETTER SIRE—BETTER STOCK WORK

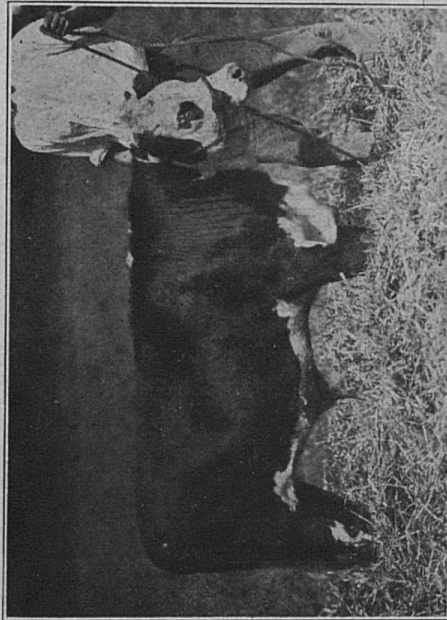
The Better Sire-Better Stock movement was one of the chief lines of work developed the past year. Campaigns were conducted in 20 counties. The total enrollment for the year was 1,448 new members which brings the total membership for the State to 3,081. This places Kentucky in the leading position among the states in this work.

The object of the Better Sire movement is the eradication of scrub sires and replacing them with pure bred. Those who enroll in the movement agree to use pure bred sires on all classes of livestock produced. Educational work was carried on by the use of newspaper articles and livestock meetings.

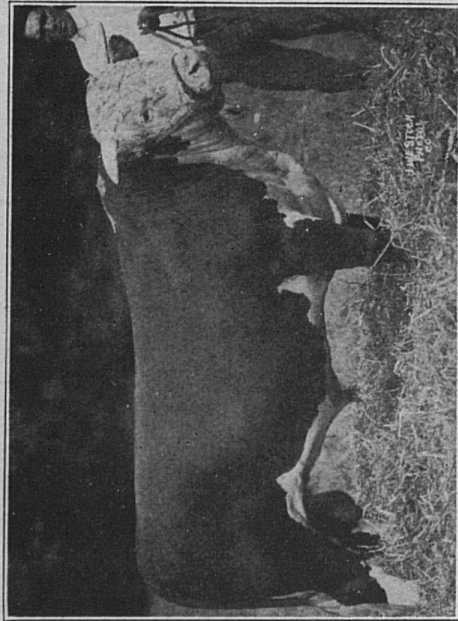
Ten better sire exhibits were shown at fairs. The largest of these was at the State Fair in Louisville. Live specimens were used showing the value of pure bred sires in breeding up beef cattle, dairy cattle, sheep, hogs and poultry. A distance of 150 feet in Barn C was devoted to the work. Marked placards were placed above all of the animals giving the value of and the greater profits from the use of pure bred sires. Nine county exhibits of a similar nature were shown at county fairs. In these exhibits, live animals were usually shown which gave examples of good and of bad breeding. Pictures, placards and charts were used in an explanatory way.

In addition to the regular cattle sales of the breeders, two Better Sire Sales were held, at Alexandria and Bardstown. A total of 76 head of breeding cattle changed hands in these cooperative sales.

The following table gives the total enrollment for the State by counties, and number of new enrollments for the year :



Grade Hereford steer out of Jersey cow. The sire is the bull shown on the left.



Pure bred Hereford bull.



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STANDING OF COUNTIES IN "BETTER SIRES" MEMBERSHIPS

	January 1, 1924	New Enrollments	December 6, 1924
Union	340	119	459
Oldham	248		248
Fayette	6	192	198
Todd	14	100	114
Crittenden	74	41	115
Christian	77	30	107
Breckinridge	30	75	105
Larue	60	45	105
Boone		102	102
Graves	14	88	102
Carroll	90	11	101
Jefferson	13	87	100
48 other counties			1,226

In 1919 when the Better Sires-Better Stock campaign started there were 1,129 purebred dairy bulls in use in the State. This was only 15% of the dairy bull population. Within the last five years, the number of purebred dairy sires in use in the State has doubled. As an illustration of their value in some of the herds in Campbell County an increase of 45% in milk and 34.5% in butterfat was obtained from the daughters over their dams due to the fact that the daughters were gotten by purebred sires. The feeding conditions were the same. The average Kentucky cow produces only about 2,800 pounds of milk yearly. This amount can be doubled in the next generation by the use of purebred sires combined with proper feeding.

In 1919 only 30% of the beef bulls in use in Kentucky were purebred. Now more than 50% of the beef bulls are purebred. This has been brought about by better sire campaigns, newspaper and farm paper publicity, and a larger supply of purebred bulls.

Well bred hogs are distributed all over the State. Every county has some purebreds. Union and Oldham counties have eliminated all scrub and grade boars.

Scrub and grade rams are being eliminated and purebreds used in their place. In our better sheep producing counties scrub and grade rams are now very much in the minority. In 1924 there were about 5,000 or 20% of the rams in use in the

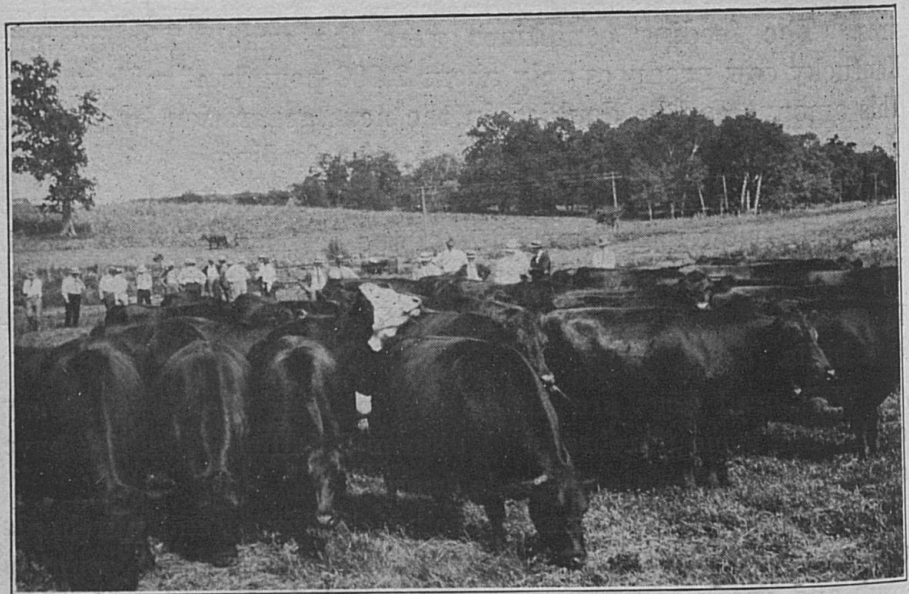
State that were purebred. In 1924 there were 9,400 or 48% of the rams in the State purebred.

BEEF CATTLE

Extension work in Beef Production for the year 1924 has been along two distinct lines, demonstration work in beef cattle feeding and educational work, proving the value of purebred sires. Seventy feeding demonstrations were carried on in Central and Western Kentucky which are the principal beef cattle feeding section.

The principal cause of poor feeding in Kentucky is a lack of knowledge of the feeding values of the different feeds. The greatest mistake of Western Kentucky cattle feeders is the feeding of excess protein in the form of cotton seed meal. This year's work has corrected practically all of this excess feeding of cottonseed meal. For the most part winter rations are now well balanced.

In most of the demonstrations a profit was made on the cattle fattened on the dry lot. When credit was allowed for manure and pork, these profits ranged from \$1.50 to \$17.56 per head. No profit was realized this year on grass finished cattle



Cattle on farm of Mr. M. A. Prewitt, Mt. Sterling, Ky. Picture taken on Beef Cattle Feeders' Tour.

which were marketed in the fall. Grass fed cattle marketed earlier produced some profit.

Some demonstration work with the feeding of light grain ration on early summer grass was carried on in both regions mentioned. The cattle which were fed in this way returned a profit when credit was allowed for manure and pork produced. These profits ranged from \$1.00 to \$20.80 per head on the droves which were sold before the middle of July.

In the past the standard method of wintering a steer in the Blue Grass region was to feed about 50 bushels of corn per steer on winter grass pasture. The method of feeding was to haul out shock corn and scatter it over the field. Nothing else was fed with the corn. Our demonstrations have shown that 20 bushels of corn with schredded stover and 100 pounds of cottonseed meal furnished a much cheaper winter feed and gave just as good results considering winter feeding and summer grazing. Also when half of the corn and stover is fed in the form of silage, the results are better still. Plans are made for more extensive demonstration work with grass fattened cattle for the coming year. Cattle feeders' field meetings or tours to a number of farms were held in Fayette and Montgomery counties this year. The most approved methods of feeding were demonstrated to all on the tours.

SHEEP

Extension work in Sheep Husbandry has consisted mainly in the standardization of spring lambs which has naturally divided itself into five divisions of work, namely:

Castrating and Docking Lambs.

Controlling Stomach Worms.

More General Use of Purebred Rams and Establishment of Purebred Flocks.

Accredited Flocks.

Spring Lamb Motion Picture.

Castrating and Docking Lambs

The 1919 survey indicated that less than 10,000 trimmed lambs were marketed from Kentucky. During the year 1924 some 320,000 lambs have been trimmed in the State, mostly from the leading sheep counties. However, several Western

Kentucky counties trimmed from 30 to 60 per cent of their lamb crop. Two hundred and eight docking and castrating demonstrations were conducted during the year, in which 9,870 lambs were trimmed. Two thousand and sixty persons were present at these demonstrations. The county agents were active in the standardization work. During the year several hundred demonstrations were held by these agents. Unfortunately some of the leading sheep counties are still without county agents and it was necessary for the extension field man to work these counties alone. Several counties trimmed above 80 per cent of their lamb crop this year. Figures to date show that trimmed lambs in Central Kentucky this year sold for an average of \$1.67 per hundred pounds more than untrimmed lambs. There was even a greater difference in Western Kentucky where as high as 45 per cent of the untrimmed lambs went to market as seconds, while less than 16 per cent of trimmed lambs went as seconds. In Central Kentucky there were three times as many seconds among untrimmed lambs as among those that had been trimmed. We realize that the farmers who trim their lambs are in many cases better breeders and feeders than those who do not and this might make some difference in the price paid for trimmed lambs over untrimmed lambs. A well known packer recently said, "The Kentucky spring lamb standardization campaign is now saving the State over a half a million dollars annually."

Stomach Worms

The stomach worm is the worst parasite of the sheep.

It is necessary to use control measures if flocks are kept healthy. A great deal of attention has been given to this work in Central Kentucky the past year. Bluestone, nicotine sulfate and iodine were used for treating sheep for stomach worms. Several years' experience in stomach worm control work has shown that either nicotine sulfate or bluestone will control stomach worms if the producer will begin early in the spring. The ewes should be treated soon after they have lambed. The lambs should receive their first treatment when about two months old and each month thereafter until ready for market. We know no case where these treatments have failed when administered as directed above.

Purebred Flocks

The demand for pure bred rams to head grade flocks was very great during the spring and summer of 1924. This has been the case to a greater or less degree for several years. The demand this year was much greater than our local supply and the extension field man assisted farmers in making up this shortage by selecting ten car loads of pure bred rams and ewes from outside of the State. These animals were secured from the best breeders in Canada and the Eastern states. A few of them were bred in England. One flock consisted of leading prize winners including a champion ram of the British Royal. The new flocks this year were started with leading sheep raisers who will take an interest in the industry and make their flocks a success. It is thru the establishment of new flocks that the industry must be built up as there will be times outside territory cannot be depended upon to supply rams. Kentucky should produce enough rams to supply home demand.

Accredited Flocks

It was noticed that an unusually large number of scrub rams were sent to market this year by farmers who had given them up for purebreds. Unfortunately, however, several traders in some parts of the state bought many of these rams and sold them to breeders to head grade flocks. In order to prevent as much as possible reoccurrences of this thing, a plan was worked out to have the pure bred flocks of the State that came up to a certain standard of perfection in quality and breed type placed on the College accredited list. This plan has met with the unanimous approval of the breeders of purebred sheep and nearly half of the flocks have already been examined. It is the first attempt of this kind in sheep work in the country. The plan has been well received by the press of other states as well as Kentucky. It has been commented on favorably by authorities of neighboring states and the U. S. Department of Agriculture. We believe that this phase of work has opportunities for real service to Kentucky breeders of purebred sheep.

Spring Lamb Motion Picture

It has been comparatively easy to reach the first fifty per cent of Kentucky sheep farmers but to get the other fifty per

cent interested in our Spring Lamb Standardization program is a much more difficult problem. Many people who would not attend a demonstration or read the reports of standardization work would go to a motion picture show. In view of this fact a two-reel motion picture dealing with Spring Lamb Standardization has been produced, showing the development and distribution of lambs from the Kentucky farm thru the markets and slaughter houses of the East. Two copies of this production are now in use in Kentucky. A third reel dealing with the certification of purebred flocks will be completed during the spring of 1925.

Lamb Improvement Conferences

Following the big Lamb Improvement Conference, held in Lexington December 13, 1923, twenty-two sectional conferences were held at leading centers of sheep production thruout the State. Thirty-two hundred farmers attended these conferences. The second annual conference was held at Lexington, November 19, and was attended by representatives of several Southern states. Arrangements have been made for fifty-two meetings in Central and Western Kentucky during the months of January, February and March, 1925.

SWINE

During the year January 1, 1924 to January 1, 1925, the swine program has concerned itself chiefly with the following lines of work: (1) Feeding demonstrations, (2) demonstrations in hogging off corn and soybeans, (3) the production of Ton Litters, (4) demonstrations on "worming" hogs, (5) pork cutting and curing demonstrations and (6) assisting with the "Better Sire-Better Stock" campaign.

Ten hog feeding demonstrations were carried on. Some of these showed no profit, while others returned liberal profits. One of the demonstrations showed a return of \$1.80 a bushel for the corn fed to a bunch of purebred pigs which had the run of an excellent lespedeza pasture. The pigs were produced under sanitary surroundings and were free from worms and other ailments that so often accompany unsanitary conditions.

Twenty-four demonstrations on hogging off corn, which in most cases, had soybeans planted in it, returned profits to the demonstrators. Practically all of these men used the mineral



One litter of ten pigs, weight 2,460 lbs. at 6 months of age. Pure bred Durocs—Hancock County.

mixture recommended by our department, and thereby increased their profits.

This year, for the first time, we used the Ton Litter scheme in our extension work. It proved surprisingly popular despite the low hog market. More than fifty members were enrolled in the club, 25 of whom fed out their litters. The heaviest litter, consisting of 16 pigs, weighed 3,120 pounds at 6 months of age.

For the year 1925, various feed companies and others are offering prizes to ton litter producers. These prizes will consist of feed and other merchandise valued at about \$400.00. The State Fair has put on a Ton Litter class for 1925 and are offering \$325.00 in cash prizes.

Efforts have been made by this department to further decrease the damage done by round worms, by demonstrating the proper treatment for ridding hogs of this ailment. Twenty-five demonstrations were given.

Demonstration work on the proper cutting and curing of meat was continued with marked success. Last year 450

farmers cured their pork according to our recommendations, and this year there will be an increased number. Along with the improvement in the cutting and curing of pork there has been noted improvement in the quality of sausage produced on



Demonstrating how to properly cut up pork.

farms. Our method increases the keeping qualities of this product, thus enabling it to be kept until the hot summer months, when most of the farmers are without sausage.

A large part of the work in pork cutting this season was conducted in the mountain counties where there exists the greatest need for this work. In each community effort was made to train one man, at least, in our methods so he could later show his neighbors how to do it. In counties where the work has been carried on quite extensively heretofore, county agents carried on the work without our assistance. At least 75 per cent of the farm butchering is done during the month of December, thus necessitating that the demonstration work be conducted as early as possible in this month. Sixty demonstrations, 30 by the specialist and 30 by County Agents, were given on cutting up the pig carcass.

Assistance was rendered in six counties with the "Better Sire-Better Stock" campaign. In this connection 24 purebred hogs, mostly sires, were placed in communities.

Poultry

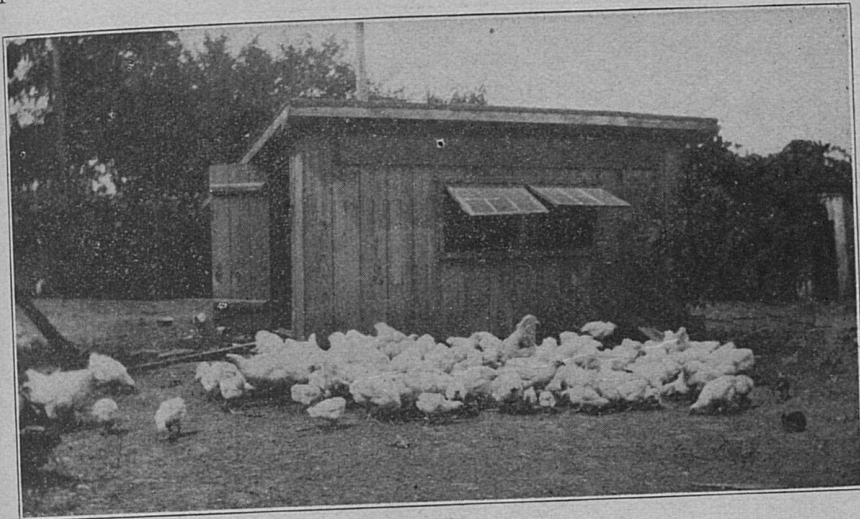
J. HOLMES MARTIN

During 1924 the "Five-Year Plan of Poultry Improvement" was continued with a number of new counties starting on the plan of work and each of the old counties taking a step in advance. Definite project work was carried on in 68 counties in which there are county agents and thirteen counties which have no agents. The five-year plan is as follows: 1st, Standardization or Community Breeding, in which interest is stimulated in purebred poultry, especially in counties which have not previously had county agent work; 2nd, Culling and Selection, which follows the year after Standardization, the purebred flocks which have been established being used for the culling demonstrations; 3rd, The Winter Egg Laying Contest Project, which involves the keeping of winter egg records on the Poultry Calendar, Extension Circular 175. The flocks on which winter egg records are kept are usually flocks of purebred fowls which have been previously culled; 4th., Farm Flock Demonstrations; from among those flocks keeping winter egg records, those which make a good showing and are suitably equipped are chosen as demonstrators for their respective communities; 5th, The Certification Project comes the fifth year of the plan of improvement. This project is limited to Demonstration Farm Flocks on which complete records for one year are available.

STANDARDIZATION OR COMMUNITY BREEDING

Purebred hatching eggs are distributed during the spring months in the furtherance of this project. Three plans of distribution are used by the various counties. In some cases the persons to whom eggs are distributed return a pullet in the fall for each setting of eggs secured in the spring. A second method is to return two cockerels for each setting secured. The third method of repayment for the hatching eggs involves the return of poultry or eggs to the value of \$1.00. This last plan proved very popular in Nicholas County, where outstanding results were obtained. In this county a produce company bought some 500 settings of hatching eggs and distributed them

among the farmers of that county who were willing to sign a note agreeing to return \$1.00 worth of produce (eggs or chickens) for each setting secured. The settlements under this plan were very satisfactory, a number of persons bringing in



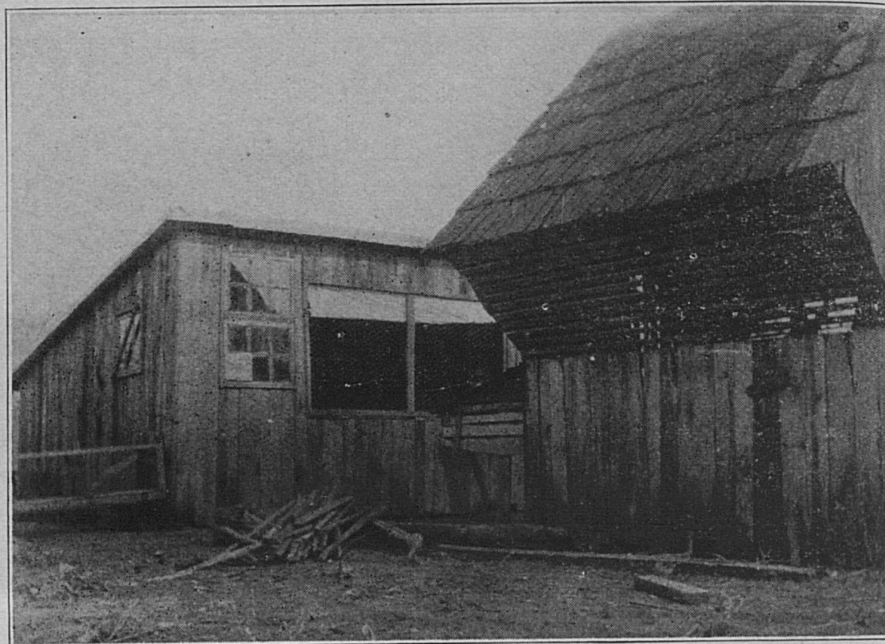
Colony brooder house and flock of White Rocks. A demonstration flock in Fleming County.

cull cockerels of frying size. Others brought in hens which they culled from their flock during the culling campaign. In this one county the plan has resulted in the establishment of some 200 pure bred flocks within one year.

During 1924 ten counties distributed 49,575 hatching eggs on one of the above plans. In several instances a local bank financed the project, receiving its money in the fall when the pullets or cockerels were sold. Pullet auction sales were held in six of these counties, whereas in the other four the birds were sold thru the bank or business house, avoiding the necessity of an auction.

Largely as a result of a Standardization Program, 38 county poultry associations have been organized during the past five years. These associations have as one of their main features of work an educational program. In some cases this program involves field meetings at the farms of various members and in some cases tours are taken to study successful methods at several different farms, and in other cases a two or three day

short course is held. In addition to the educational program, most of the associations hold an annual poultry show and also market considerable breeding stock and hatching eggs for the members. These associations are very helpful organizations to



A model poultry house in Allen County and the old "balloon" house it is to replace.

the county agent and specialists as in numerous cases the educational program of the county is built up around the association.

Mention should be made of the fact that altho the number of hatching eggs distributed thru a bank or business house in the furtherance of this project has grown less each year, in reality the number of purebred hatching eggs distributed in the state has been multiplied many times. After this project progresses in a county or community, and a number of purebred flocks have been established as a result of this project, a very large share of the eggs from these flocks are sold in that county, directly from one farmer to another and consequently no record is available. In reality, this is exactly what is desired, namely: that sufficient interest will be stirred up in the community in purebred poultry, and as a sufficient number

of foundation flocks established so that the number of purebred farm flocks will constantly grow. In addition to the ten counties in which hatching eggs were distributed thru a bank or produce house, there were 50 counties in which this project had been previously carried on, so that during the spring of 1924 a large number of hatching eggs were distributed directly from the breeder to the farmers of his community.

CULLING AND SELECTION

It is the aim of the poultry specialists to devote their time and effort during the culling campaign largely to sections of the state in which there is no county agent, or those sections in which county agent work is relatively new. The reports of the county agents show that they have conducted a large number of culling demonstrations themselves. In addition to the demonstrations given by the county agents, the poultry specialists gave 126 culling demonstrations in 38 different counties at which 2,348 farmers were in attendance.

In many sections of the state where the county agent or poultry specialists have given culling demonstrations for the past four or five years, culling is becoming a general farm practice. Consequently, the specialists seek out new territory each year. As a result most of the people reached by the poultry specialists during 1924 were not familiar with the method of culling and learned of it for the first time. Those in attend-



A demonstration flock in Kenton County. The successful brooding of chicks requires the mutual efforts of the farmer and his wife.

ance at the demonstrations held both by the specialists and county agents were not only taught the value of culling, but also the method of culling which they learned by actually handling hens in the flock where the demonstration was held. A large number in attendance at these demonstrations put into practice what they had learned by culling their own flocks.

WINTER EGG LAYING PROJECT

During the winter of 1923-'24 there were such a large number of farm flocks enrolled in the Winter Egg Laying Project that it was impractical to continue reporting the standing of the flocks for the entire state. Consequently, this project was put on a county basis and each county agent having flocks enrolled in this project reported in the local press the standing of the flocks in his county. The number of flocks enrolled in each of the 48 counties where this project was carried on varied from 10 to 100. The owners of these flocks kept records of the egg production of their flocks thruout the winter months, commencing November 1st. At the end of each month a report of the production for their flock was mailed to the county agent, who in turn summarized these reports for the county. A "poultry calendar" is furnished the cooperators in this project. This calendar contains timely suggestions for each month and space for the keeping of the records. Interest in this project has grown so rapidly that it has been necessary to prepare a new calendar which was distributed the first of November, 1924. This calendar (Extension Circular 175) contains not only space for keeping egg production records, but also columns for recording receipts and expenditures. Hence, in addition to comparing the flocks on a basis of egg production, the county agent is able to make comparisons of the relative cost of feeding and feed cost of production. The request for this year's poultry calendar have greatly exceeded the number used last year.

FARM FLOCK DEMONSTRATIONS

The interest in the project has increased rapidly. The number of flocks keeping complete records for the Extension Division and regularly enrolled in this project was increased

from 113 in 1923 to 147 this year. One hundred and eleven of this number have completed their entire year's records, whereas, the majority of the remaining 36 are only a few months in arrears with the records, which can be readily completed. These flocks are distributed in 46 counties in the state and serve as demonstrations in their respective communities. These demonstrators cooperate with the Extension Division thru the county agent and carry out to a large degree the proper methods of housing, feeding and flock management as recommended by the poultry specialists.

A large number of these demonstration flocks have been made use of this past year for field meetings or poultry tours. At these meetings, which are held on the farms of successful poultry raisers, farmers of the community learn by actually seeing the results of others. During the past year 14 field meetings were held on farms having demonstration flocks, with a total attendance of 878 people. This phase of the demonstration flock project will be emphasized during the ensuing year.

Each demonstration flock is visited on the average of twice during the year by one of the poultry specialists. In practically every case the poultry specialists help the demonstrators in the selection of the breeding pen and the choosing of the proper males to head this pen.

CERTIFICATION OF POULTRY FLOCKS

The third year for certification has brought about increasing interest in the project. The object of this project is to build up the egg producing ability of the farm flocks, by having available in most sections of the state, cockerels of the more common varieties which have in their blood lines breeding for egg production. This project is limited to those who have completed a successful year as farm flock demonstrators and consists of the selection and mating of special breeding pens. The flocks are gone over during the fall by one of the poultry specialists, at which time the outstanding, high-producing hens are banded with a sealed leg band, numbered and stamped "Certified U. of K." All persons who cooperate in this certification project sign a contract in which they obligate themselves to follow out to the best of their ability all rules and regulations governing

the project. The cockerels which are raised from the certified pens are handled by the poultry specialist and those which are suitable breeders are also banded with sealed bands. These cockerels are then sold as "certified cockerels." The interest in this project is indicated by the popular demand for certified cockerels. Practically every breeder in the state having a certified pen this past year had demands for certified cockerels far in excess to his ability to fill them.

Eighty-seven flocks were certified during 1924. In these flocks 2,024 hens were certified. These flocks represent 12 different varieties most popular in Kentucky and are well distributed over the state. Of the flocks certified this year, 36 were represented last year among the certified flocks and 53 were flocks certified for the first time this year.

With such a large number of certified flocks in the state there will undoubtedly be raised during 1925 a larger number of "production-bred" cockerels of good breeding than have ever been available before. When these cockerels are in turn mated to the farm flocks in the state, the egg production of such flocks should be materially increased by the addition of these blood lines.

MISCELLANEOUS WORK

In addition to the regular project work the poultry specialists gave talks at 79 farmers' meetings, at which 4,732 people were in attendance. These meetings did not include culling or caponizing demonstrations. Caponizing demonstrations were given on 31 farms at which 816 people were in attendance and taught how to caponize their cockerels in order to get more rapid growth and efficient gains.

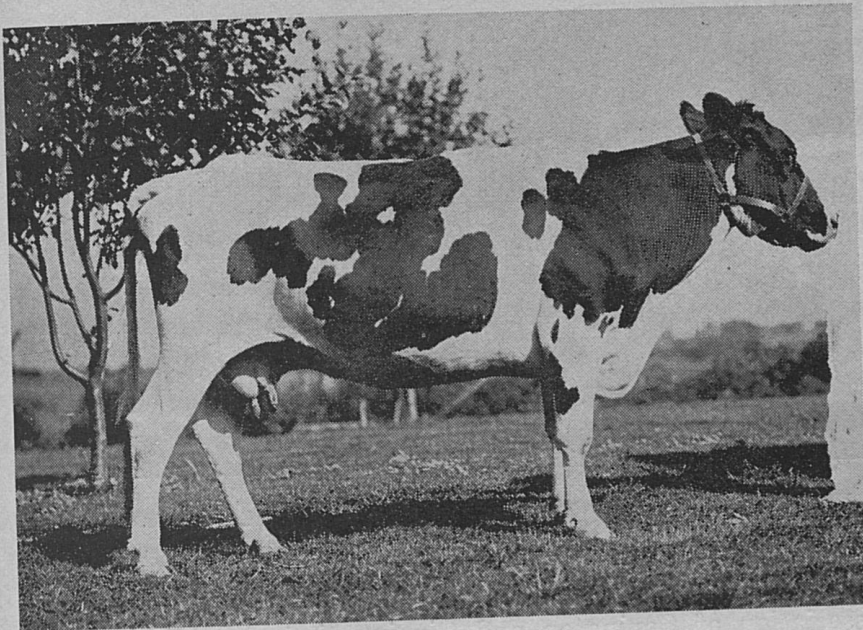
The poultry specialists judged 32 poultry shows, a large share of which contained club exhibits. Placings usually were explained to those interested after the judging was completed.

Dairying

J. J. HOOPER

PRODUCTION

During the year 1924, the extension work in dairy production has centered about the following lines of work: (1) Boys' and Girls' Calf Clubs; (2) Purebred Bull Associations; (3) Cow Testing Associations; (4) Dairy and Legume Campaigns;



Dairy cow giving 892 gallons of milk per year, dam of the cow shown on following page.

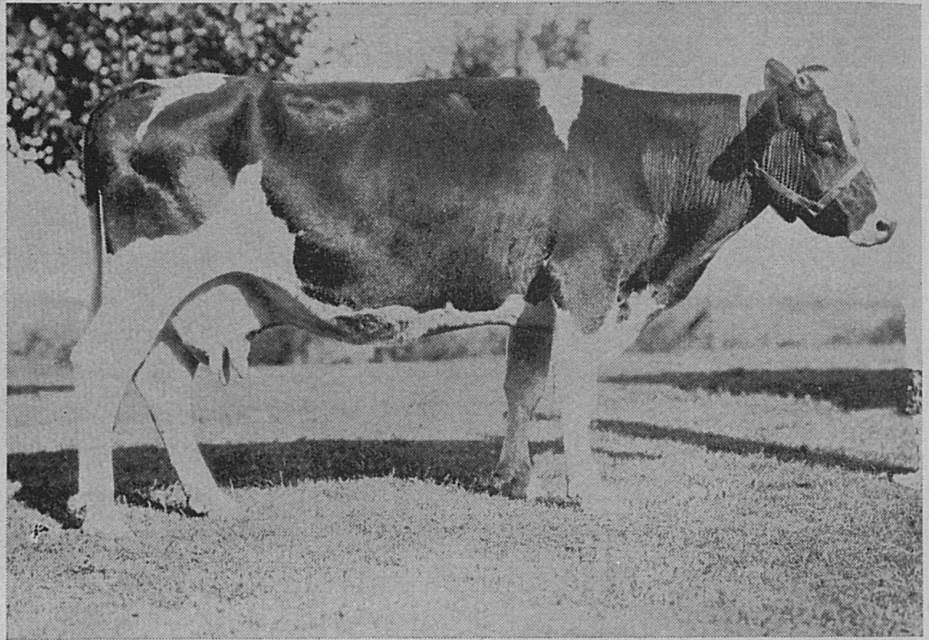
(5) the organization of County Purebred Cattle Breeders Associations; (6) assistance in management of dairy herds owned by State Asylums, and (7) official cow test supervision.

(1) Boys' and Girls' Dairy Calf Clubs were organized in 1924 in Breckenridge, Warren, Spencer, Boyle, Mason and McLean. One Hundred ten children were enrolled in these clubs all owning registered heifers.

(2) During the year eight cooperative purebred bull associations have been organized in the following counties; Warren, Hopkins, Muhlenburg, Campbell, Graves, Mason, Bracken, Spencer and Shelby. Twenty-four community bulls

have been purchased by two hundred ninety-seven farmers in these clubs owning 1,101 cows.

(3) A cooperative cow testing association embracing 11 farmers owning 159 cows has been organized in Mason County.



Daughter of the cow shown on previous page. This cow is by a pure bred sire. She gives 1,817 gallons of milk per year.

Assistance has been rendered the Cooperative Pure Milk Association of Covington and Cincinnati, in establishing community cow testing associations. In these associations the milk depot tester tests the milk almost free of charge for the cow owners of the community. Also assistance has been given in formulating rations for the 30,000 cows belonging to the 3,000 members of the association.

(4) Campaigns have been conducted in cooperation with County Agents looking to the furtherance of dairying and the growing of legumes in the following counties: Campbell, Graves, Muhlenberg, Hopkins, Webster, Bracken and Mason.

(5) Breeders of purebred dairy cattle, in the following counties, were helped to organize local breed associations for the purpose of advancing the purebred dairy cattle interests of these counties:

Campbell County with 17 members.
Graves County with 15 members.
Mason County with 9 members.
Boone County with 14 members.

Farmers have been assisted in shipping purebred dairy stock into each of the following counties McCracken, Hopkins, Graves, Carlisle, Webster, McLean, Warren and Lincoln.

(6) Assistance has been given in the management of the dairy herds owned by the six State Asylums and Reform School. These several herds contain 287 milk cows that now average 21.3 gallons of milk per cow per day.

(7) During the year more official testing has been done than heretofore. Tests were supervised on 175 cows owned by 40 different farmers and dairymen. The highest records made during 1924 were as follows: Jersey, Jolly's Dewdrop owned by Harry Hartke, Covington, Ky., with a record of 15,596 pounds of milk and 780 pounds of fat, and the highest testing Holstein cow was Princess Fairview Rag Apple, owned by R. M. Barker, Carrollton, Ky., with a record of 20,789 pounds of milk and 740 pounds butter fat.

In Daviess County 12 farmers were shown how they could cheapen the ration fed their cows by adopting the home mixed ration used by the Kentucky Experiment Station. They save 63c on every hundred pounds of feed used with their cows.

In Campbell County the Dairy Department assisted in replacing 25 mediocre bulls with purebreds. County Agent H. F. Link of Campbell County writes, "Due to effects of dairy extension work in this county we now have over 400 head of registered dairy cattle. When I came here only a mere handful were in existence."

The scarcity of dairy products in Harlan County, where enormous mining and manufacturing developments are taking place, is appalling since many young children are entirely deprived of milk. The Dairy Department assisted Elmer Morris, of Harlan County, in the selection of 15 good dairy cows, the erection of a silo and the reconstruction of his barn.

Tom King of Hopkinsville, a successful Jersey cattle breeder, says: "Due to testing cows for milk and butter fat

production Christian County has been able to dispose of 487 Jerseys to financial advantage during the year."

Frank Perraut, Dover, Ky., reports "Within four months I have sold \$2,873 worth of registered Jerseys. This has been due to test work."

Harry Carter, Stanford, Ky., was milking 5 cows at a loss, changing his ration as advised, this deficit was changed to a profit of \$11.58 per cow per month.

As a result of a dairy campaign in Webster County 16 farmers are now shipping cream. As the result of a similar campaign in Muhlenburg County 32 farmers are shipping cream.

DAIRY MANUFACTURES

During the year 1924 the dairy manufactures specialist was employed to devote half his time to extension work. The work carried out related primarily to instruction and demonstrations in the production of better cream. Twelve million pounds of creamery butter are made annually in Kentucky. The butter would be worth more if it were first class, but because of the bad cream from which it is made its market price is low. This loss is sustained, of course, by the farmers who produce the cream. To overcome this difficulty the dairy manufactures specialist held meetings in 11 counties in Western Kentucky and seven counties in Northeastern Kentucky, the work being concentrated in certain communities so that actual results might be accomplished. Thirty-eight demonstrations were held where County Agents, cream buyers, farmers and creamerymen were given instruction in regard to the production of wholesome cream and in the grading of cream.

To encourage the work creameries offered a higher price for clean, fresh cream than for poor qualities. Managers of the various creameries held their field agents responsible for carrying out the grading work in the small cream buying stations. County Agents cooperated with cream buyers and cream producers in their counties.

The farmers of Bracken, Pendleton, Mason, Lewis, Robertson, Fleming and Nicholas counties, especially, responded to efforts in their behalf and produced such good cream that they

were paid 1.8c more per pound for butter fat than was paid adjoining territories where grading was not followed. In the five months that our extension specialist was in the field the grading plan was adhered to, and in this period from April 1 to September 15, the farmers of Mason County were paid \$2,457 more for their butter fat than they would have received had they lived in non-grading territory. In the territory comprising the seven Northeastern Kentucky counties the farmers who were producing this extra good cream were paid approximately \$17,500 more than they would have been paid had they received the average price for cream paid in non-grading sections. The same sort of results were accomplished in the eleven counties in the western part of the State.

In addition to this work the manufactures specialist gave counsel and advice to farmers regarding the advisability of establishing community creameries and cheese plants, and advised regarding trouble of some creameries already in operation.

DAIRY EXHIBITS AND JUDGING

The specialists have done considerable judging work at fairs and have superintended the dairy products and dairy cattle at several fairs including the State Fair.

Veterinary Science

W. W. DIMMOCK

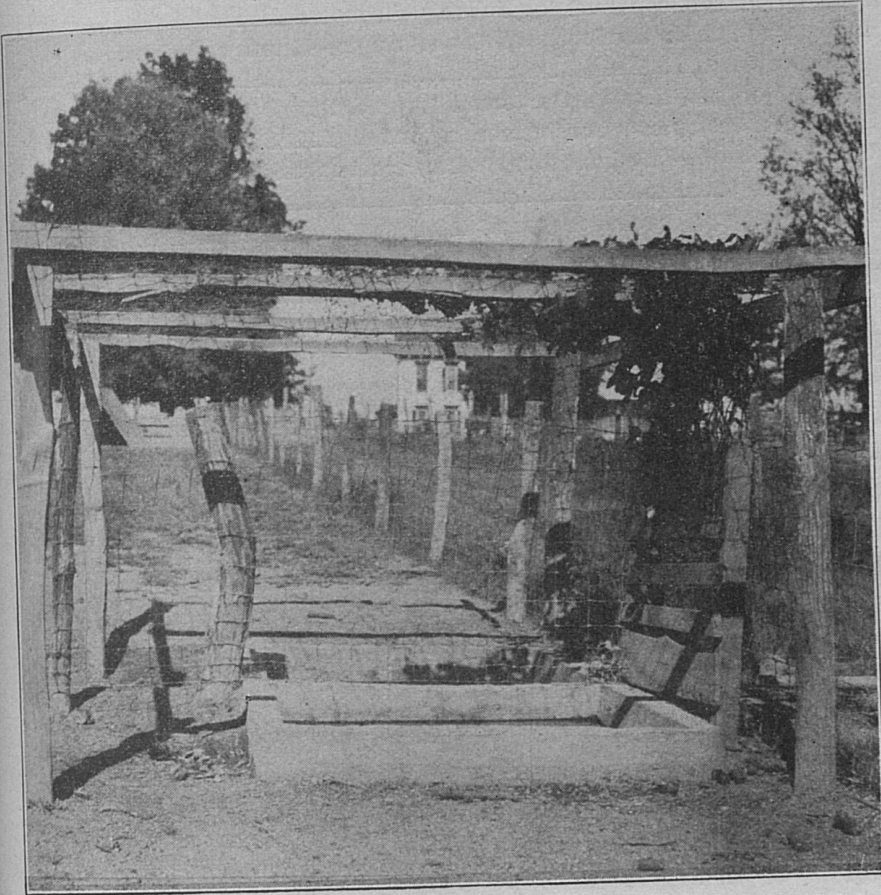
The activities of the Field Agent in Veterinary Science have been conducted largely along the same lines as those of last year. Much work has been done with livestock men and farmers, county agents and local veterinarians, and agents cooperating in the control of livestock diseases and especially those transmissible to the human family.

The educational aspect of tuberculosis eradication work, which is being carried on in cooperation with the State and Federal Forces, has progressed most favorably. The county agents in the various counties have assisted greatly in conducting educational campaigns in order that the citizens of the State may have a better understanding of the control of this insidious disease which collects such a large toll of the human family, especially the young. Educational campaigns were held during the past year in Pendleton, Breckinridge, Mercer, Boone, Letcher, Clark, Graves and Nicholas counties.

Increasing interest is being manifested in the control of infectious abortion of cattle; the economic loss being due not only to the loss of the progeny but also to interference with the health of the animal, entailing a lowered milk production. The above factors are responsible for one of the gravest problems that is confronting the dairy industry, not only in Kentucky but other states as well, as the loss from this disease equals, if it does not exceed, that from any other disease affecting livestock. Numerous requests have come to this Department for assistance in the control of this condition, and visits have been made to herds by the Extension Veterinarian for the purpose of collecting samples of blood for testing and advising with the owners regarding such control measures as vaccination, elimination of diseased animals, cleaning and disinfecting of premises, blood testing of new additions, etc.

Two herds were visited during the past year for Johne's disease, which manifests itself as chronic scouring and is usually traced to imported cattle. This disease is insidious in its nature, and when once established in a herd it is exceedingly difficult to control. Eighteen head were tested for this condition.

Samples were taken and 41 tests were conducted for mastitis in dairy cattle. Numerous farm visits were made in the investigation of diseases of sheep, cattle, swine and horses, also a number of educational meetings were held thruout the



A concrete sanitary hog wallow shaded by a grape vine. It cost \$10.00.

State on the control of parasitic diseases and the eradication of tuberculosis. The following is a tabulated report of the most important activities of the Field Agent in Veterinary Science.

Consultation with farmers or stockmen	956
Visits to farms for the purpose of investigating disease and its control	130
Visits to counties for the purpose of investigation of disease....	98
Counties visited	35
Consultations with veterinarians on the control of livestock disease	82

Consultations with county agents on the control of livestock disease	83
Post mortems held in the field to determine the cause of disease	23
Number of head of cattle tested for infectious abortion.....	540
Number of head of swine tested for infectious abortion.....	18
Number of cattle tested for Johne's disease.....	18
Instructor Junior Agricultural Club Camps—Knott and Jackson counties	2
Number of herds of cattle tested for mastitis (41 head).....	3
Extension Workers' Conference attended	1
Counties in which educational tuberculosis work has been conducted	8
Investigation of rabies in swine	1
Investigation of hemorrhagic septicemia	2
Investigation of foot rot of sheep	2

Horticulture

C. W. MATHEWS

POMOLOGY

The work in Pomology has been directed along three main projects:

1. Management of commercial orchards.
2. Planting new orchards.
3. Orchard renovation.

Some of the problems of most importance confronting the Kentucky fruit growers in 1924 are as follows:

- (a) Apple scab and scale. Certain sections and individual orchards had lost 80 per cent of the 1923 crop from scab. What dormant spray to use, oil or lime-sulfur?
- (b) Pruning—Apple and peach—How severe, type, time.
- (c) Fertilizer—How much nitrate, most economical source.
- (d) Bitter rot and blotch control—How late in season and when.
- (e) P. D. B. on young trees: Is it safe?
- (f) Establishing definite grades and holding to the standard.
- (g) Advertising Kentucky apples or developing local consumption or the home market.

The Orchard Management project has been carried on in fourteen of the leading fruit counties. This project is quite inclusive, taking in all phases of orchard management.

LOCAL COUNTY ORGANIZATIONS

In the leading fruit counties a definite county program of work is adopted and all Extension work is carried on thru the Local Fruit Growers' Association, which is organized strictly for educational purposes. The following is a representative program.

1. January: Organization meeting—adoption of program for year. Committees appointed.
2. February: Leaf curl, scale, fertilization, aphids.
3. March: Scab, spring planting.
4. April: Codling moth, blotch, cultivation, spray problems.
5. May: Cover crops, summer sprays.
6. June: Summer pruning, thinning.
7. July: Orchard tour: State Fair exhibit.
8. August: P. D. B. Picking, grading, packing, fall cover crop.

**PRUNING DEMONSTRATION
WORK ON 2-YEAR-OLD
PEACH TREES**

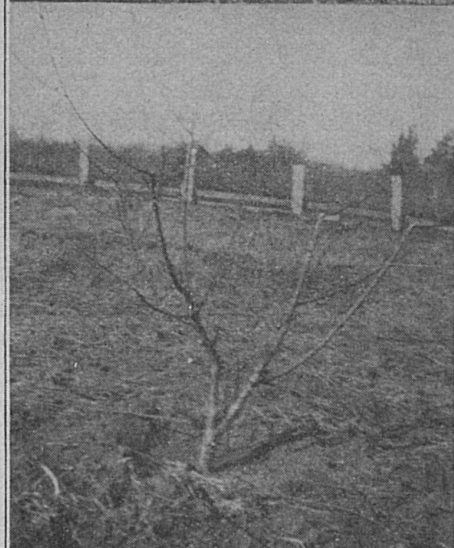
"A" SEVERE PRUNING

All branches pruned back about one-half of annual growth. The following summer each of the main branches produced from two to five succulent branches which grew from 4 to 7 feet terminal growth; the inner branches were killed out by the excessive shade and very few fruit buds were formed.



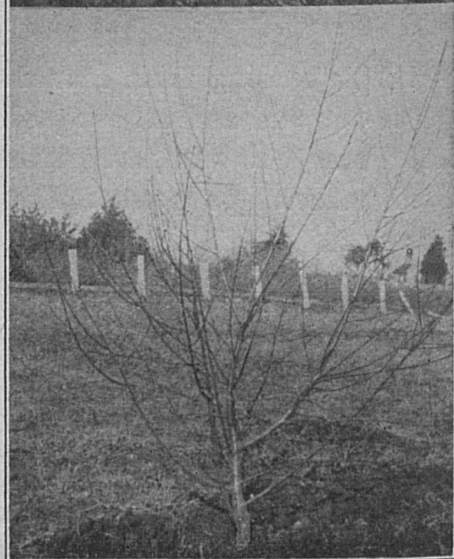
"B" MEDIUM PRUNING

Branches pruned back about one-half of annual growth. At each point where branches were cut back from 2 to 4 branches developed, each growing from 18 inches to 3 ft. This growth was at the sacrifice of the underneath branches. More fruit buds were set than on A, but far less than on C.



"C" VERY LIGHT PRUNING

Thinning out rather than cutting back. Branches were thinned out to admit sunlight to interior of tree. The total new growth was equal or greater than A or B, but was distributed throughout the tree. Abundance of strong fruit buds were set. This latter type of pruning is now being used by the leading commercial growers today.



9. September: Marketing, storage.
10. October: Mouse and rabbit protection, fall planting.
11. November: Winter pruning, dormant spraying.
12. December: Reports of committees.

The leading growers in the various counties seem willing to take an active part in carrying out such a program and the amateur grower, altho he does not take part in the discussions, has a chance each month to learn four to six weeks in advance what the best growers are planning to do in their orchards. It has been found advisable to combine some of the monthly topics and have fewer meetings.

This type of organization work has been used for the past two years and is gaining in popularity. Growers claim this definite manner of obtaining subject matter is of great value to them. They seem to want to have first hand information as to how their neighbor and also the men in the adjoining county are managing their orchards.

PEACH PRUNING DEMONSTRATIONS

Peach pruning demonstrations started in young orchards in 1922 in Jefferson, Henderson and McCracken counties have been continued, the object of this demonstration being to show the good and the bad characteristics of the following types of pruning; heavy pruning (dehorning and cutting back), light pruning (centers of trees opened and thinning out of crowded branches), and medium pruning (an intermediate of the heavy and light types).

The orchards in Jefferson and Henderson counties were not old enough to bear this year. The McCracken county orchard, being in its fourth growing season, bore a good crop this season (1924). This inspection of this demonstration block of trees furnished one of the interesting features of the summer orchard tour. More than 150 persons, of whom at least 80 were owners of young peach orchards, were present to observe the results of this pruning work. The results were very striking; the heavily pruned trees averaged less than a peck of fruit per tree, while the lightly pruned trees yielded a bushel per tree, on the average. W. S. Perrine, of Centralia, Ill., one of the largest commercial peach growers of his state was present and was

called on to comment on this pruning plot. He expressed an opinion that such a demonstration, if observed ten years ago, would have been worth thousands of dollars to him, for until only two or three years ago he had been following the "severe



Clean cultivation of a Kentucky peach orchard. This method of soil management, cultivation with a disk harrow at ten day intervals during the summer, followed by a cover crop of rye or oats in the fall, is in general use by the commercial growers.

type" of pruning with heavy annual loss. The growers as a class were convinced that correct pruning consists of "opening the centers and thinning out" rather than "heading back."

This peach pruning work will be continued indefinitely.

APPLE PRUNING DEMONSTRATION

In Henderson and McCracken counties apple pruning demonstrations, which are to continue at least four years were started in 1924. In the demonstrations the crop of apples borne on the various types of pruned trees showed quite a contrast in results as compared to what the interested growers had expected, therefore, no figures of tree yields will be given until another year's results are observed.

APPLE SCAB CONTROL

During the past few years the limiting factor in growing clean apples in the Henderson section was scab control. The Winesap, Stayman, Delicious, and Black Twig varieties, the leading winter varieties for the section, are very susceptible to scab. The pre-pink spray added to the schedule has largely solved the problem. This was tried out in 1922 and 1923, the results being so satisfactory that the leading growers in that section have permanently added this application to the spray schedule. In some of the orchards using this extra spray the scab loss has been less than one-half of one per cent (by count), while orchards nearby, carelessly sprayed during the pink season, had upward of 72 per cent scab.

The general observation where no accurate harvesting record has been kept is convincing to the growers that the annual use of nitrogenous fertilizer is desirable on apple and peach orchards. In January of 1924 the fruit growers found that sulfate of ammonia could be purchased at approximately the same price per ton as nitrate of soda and since 4 lbs. of the sulfate is equivalent to 5 lbs. of nitrate of soda, a saving of about \$15.00 per ton could be made if they could handle the material in carload lots. Thru the local Fruit Growers Associations in the fruit counties, by immediate action before January 10, four car loads were contracted for spring use, thus saving several hundred dollars.

Two very striking fertilizer demonstrations were made in Union County which will long be remembered by the fruit growers. John McGraw of Sullivan, in 1923, had a few acres of run-down peach orchard. The whole orchard was dehorned and cultivated during the spring and summer of 1923. Half the block was nitrated with 3 lbs. per tree. The treated trees made a fine growth while the untreated trees made only a few inches of growth in 1924. Mr. McGraw harvested $11\frac{1}{2}$ bu. per tree on the fertilized side of the orchard while the other side had less than one peck per tree.

E. M. Morton, of Morganfield, has a three-acre, 12-year-old peach orchard. These trees were not in a vigorous condition and the unusually cold winter of 1924 weakened the trees still more. This orchard was observed in late May. The trees at

this time were unusually full of young peaches, yet the leaves were turning yellow. Mr. Morton was advised to treat the trees at once with 4 lbs. of nitrate of soda. This direction was carried out the same day. One representative row was left untreated.



Orchard tours have proved to be an excellent means of educating growers along the lines of desirable and undesirable orchard practices, especially spraying, fertilization, and soil management. During July and August of 1924 tours were held in thirteen counties in Kentucky with a total attendance of 1,406.

This row was almost a failure while the rest of the orchard matured a crop of over 4 bushels per tree of choice fruit. An investment of 14c per tree in this case returned over \$7.00 per tree.

PARADICHLOROBENZENE

The paradichlorobenzene (P. D. B.) treatment for peach tree borer control has been so successful that its use is now a state-wide practice.

Apple Shows and Fruit Growers Short Courses

Six apple shows were held in October, November and December in McCracken, Henderson, Lee, Pulaski and Whitley counties and in Northern Kentucky. At four of these shows a Fruit Growers Short Course was held. The most successful meeting of this series was probably the one held at Covington,

representing Campbell, Kenton and Boone counties. At this show more than 200 trays and 420 plates of fruit were on display by 68 fruit growers of that section. Cash prizes and merchandise totaling more than \$150.00 in value were given and in addition two silver loving cups were donated by two Covington business houses. These cups were awarded to the sweepstake plate and sweepstake tray of fruit.

The growers have requested a show in 1925 and have appointed committees for handling the proposition. One of the main things to be accomplished by apple shows is to show to local citizens that fruit second to none is being produced nearby. When following up for a few years this will in turn help materially in increasing the demand for Kentucky-grown fruit.

Two successful and profitable spray rings have been operated in Hart County during the year. In 1923, Mr. A. M. Key, of Cave City harvested 56 bushels of fine fruit from his 21 12-year-old trees, selling above expenses \$75 worth of fruit. This was the first spraying ever done in this section, but it stimulated the fruit interests of the neighborhood until, in 1924, it was possible to operate a spray ring. In 1924 Mr. Key harvested 87 bushels. He kept 14 bushels of best grade for home use and sold \$85 worth at the orchard. After deducting \$4.77 for expense of spray material and commercial fertilizer he had \$80.23 left for his labor. Six men were included in the spray ring operated by Mr. Key. The summary of their results follows: Two hundred four trees were sprayed (75 of this number being young trees). A \$15 barrel sprayer was used. The total cost of material used was \$19.28; Two hundred eight bushels of fruit was produced. Part of this fruit has not been sold but assuming that it is worth \$1.00 per bushel (no fruit so far has sold that cheap) the 280 bushels will return \$125.72 after deducting \$19.28 for spray material, \$15 for the barrel pump and allowing each of the six families to consume 20 bushels at home.

A typical instance of orchard renovation was that in the Wallace Crosby orchard in Graves County. This orchard consisted of about 12 acres of old, large trees, probably twenty

years old, that had had no care for fifteen years. When this orchard was visited last spring, Mr. Crosby was advised to select 50 representative trees in the orchard to be cared for by spraying and fertilizing. Three hundred pounds of nitrate of soda was used, giving each tree 6 pounds. The dormant spray and three summer sprays were applied. The fifty trees produced 200 bushels of good fruit which sold at \$1.25 per bushel at the orchard. The rest of the trees were a complete crop failure. Mr. Crosby is now making plans to care for the entire orchard in 1925.

STATE FAIR WORK

An exhibit was made at the State Fair in connection with the College of Agriculture display, featuring San Jose scale, its origin, how it entered the United States its spread and its control.

In addition to this exhibit a member of the Department acted as Assistant Superintendent of the Horticultural Department, at the State Fair. This work consisted of stimulating interest with fruit exhibits in the leading fruit producing counties and assisting at the show during the Fair.

In the past several years only four counties have made commercial exhibits, while in 1924 eight counties were represented in this class. The magnitude of the display as well as the quality was considered the best in the history of the State Fair.

Fertilizers for Strawberries

Numerous inquiries from strawberry growers in the Purchase Section as to when to fertilize strawberries and what to use, showed the need for definite demonstration work along this line. Three meetings were held in three representative sections and 14 reliable and interested growers agreed to prepare demonstration plots in their berries planted in the spring of 1924. Tests are being made with acid phosphate, potash and nitrogen in various amounts. No accurate results can be reported until the 1925 harvest. Double the above number of growers have agreed to cooperate in this work for 1925 and 1926.

Orchard Tours

Orchard tours have been the best method of "selling" modern orchard management to the amateur orchard man. They are increasing in popularity every year. During 1924, tours were held in 13 counties. In 1925, in addition to local county tours, plans are being made to extend four sectional tours into the adjoining states for one day each.

Central State Hospital

In 1923, Dr. W. A. Jillson, Supt. Central State Hospital at Lakeland, requested a visit to the Institution to outline an orchard management program. At this time the apple and peach orchard was heavily infested with San Jose scale. Very careful dormant spraying was recommended along with fertilizing and cultivation. The apple orchard and most of the peach orchard is very young. The old bearing peach trees set a fine crop and matured over 600 bushels of choice fruit. Mr. Kemper, the farm manager, made an exhibit of this fruit at the State Fair. The orchard is now being well cared for. A new power sprayer has been bought for 1925.

VEGETABLE GARDENING

CERTIFIED SEED POTATOES:

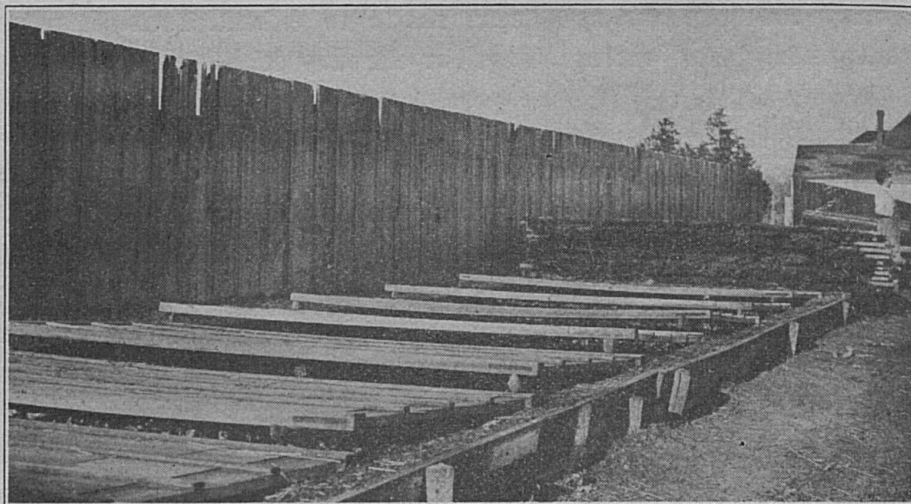
During 1924 a number of the leading seed houses in Kentucky, continued their helpful cooperation in connection with the certified seed potato work. They secured seed stock from sources that the College had learned to be satisfactory. These seed houses handled a total of 19 cars in 1924 as compared with only a fraction over six cars in 1923.

SEED TREATMENT:

In Jefferson County, 10 new men, together with 25 men who have been practicing seed treatment, were enlisted in a results observation campaign. In Jefferson County 185 pounds of corrosive sublimate was sold by the Farm Bureau (sufficient to treat seed for 740 acres) and 12 tons, 600 pounds of sulfur, enough to dust seed for 1,200 acres. In the neighborhood of 100 acres treated thruout Kentucky, besides 20 per cent new.

The control of potato scab causes growers probably more concern than any other phase of potato growing. Seed treat-

ment with corrosive sublimate and dusting with sulfur immediately after cutting are practised by many, with success, but there are still many growers who need to be convinced that seed treating is the thing for them to do.



Cold frames for early cabbage plants. Note the windbreak fence and stack of mats, made of sedge grass for protection from cold.

In order to secure data of a convincing nature thirty-five potato growers scattered thru Jefferson County were enlisted in a campaign to observe closely whether or not seed treatment would yield the results claimed for it and to report accordingly.

The men fall into classes as follows:

1. Those who treated part of their seed and left part untreated as a check.
2. Those who were unwilling to risk any part of their seed, and who treated their entire seed stock.
3. Those who used sulfur alone.

Their report indicates that in one case only (Mr. Geo. Nagel, Valley Station) no difference between treated and untreated seed is found, but the rest of the thirty-five report a negligible percentage of scab in treated seed, maximum 4 per cent.

On the other hand, untreated seed planted alongside the treated seed gave percentage of scab varying from 20 to 85 per cent.

Increase in yield of treated seed varied from 30 to 36 bushels per acre.

John Fried, Jr. and George Nagel found that dusting with sulfur in addition to treating with corrosive sublimate improve the scab situation measurably:

One grower, Mr. Wm. Baumlisberger, Jeffersontown, did not treat his seed but sulfured part. He reports that the sulfured seed gave a clean crop, whereas that not sulfured showed enough scab to make the working over of his crop necessary.

Several men made what appeared to be negative reports. They are W. H. Korfhage, W. H. Herr, and J. M. Howey, all of whom found the scab prevalent in low parts of their fields. This brings up the other phase of scab control, namely, treating the land.

Mr. W. H. Stutzenberger, Springdale, limed a portion of his farm quite heavily and raised several very scabby crops of potatoes as a result. Two seasons ago he tried to overcome this condition by applying sulfur on the land, 450 pounds per acre. His success in cleaning up the scab was so pronounced that he intends sulfuring all spots in fields where scab has occurred.

To sum up the report, thirty-four of the thirty-five men are enthusiastic about treating seed potatoes for scab. All are agreed they will plant no second crop without treating and several have said that they would plant no more untreated seed, early or late. As to the value of using sulfur, some growers are doubtful, whereas others intend dusting all seed they plant, and two growers place their entire confidence in the use of sulfur alone.

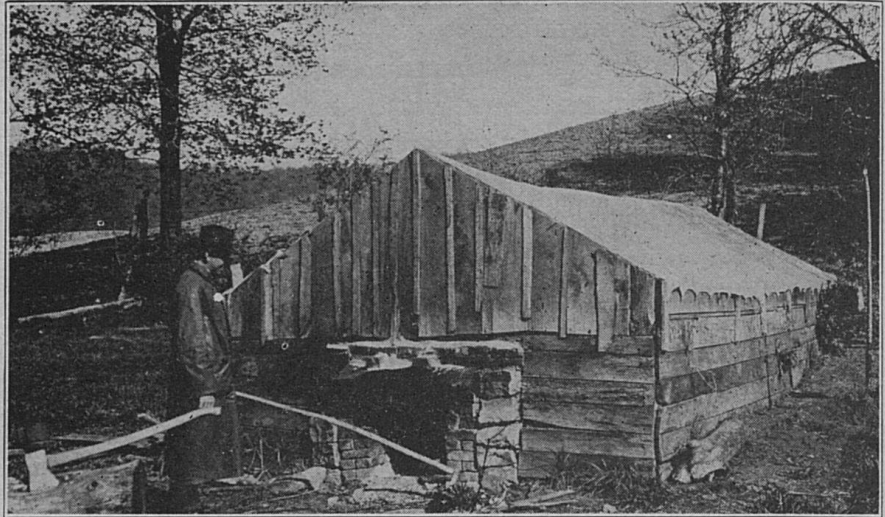
As a result of this inquiry it is felt that the recommendations, made by the College consistently thru the past three years, should still stand.

Where scab occurs, in some seasons, and in moderate amounts.

1. Treat seed with corrosive sublimate and dust it with sulfur at cutting. (Apply to county agents for details.)
2. Turn under a green cover crop early, in order that it may rot thoroly by planting time.

Where fields persistently give scabby crops, treat seed, dust cut seed with sulfur and, in addition to plowing under the green

manure crop at the proper time, apply sulfur to the land at rates from 150 to 600 pounds per acre; before so doing, however, see your County Agent.



A flue-heated sweet potato plant bed.

TOMATOES FOR CANNING:

Demonstrations of fertilizer applications resulted as follows:

1. Earliness enhanced in all cases (not measurable).
2. Acre yields increase as follows:
 - (a) Rye cover, 4 tons manure, 400 pounds acid phosphate, 1¼ tons.
 - (b) Rye cover, 6 tons manure, 600 pounds acid phosphate, 3 tons.
(Over a cover crop of mixed grass and manure, as noted.)

An incidental demonstration of the value of tillage arose out of suggesting hand hoeing to control weeds, it being too wet to permit the use of horse tools. At a cost of \$3.85 on a measured acre, \$18.50 worth of additional tomatoes were secured.

The value of the service rendered by this department in getting growers and canning factories together on a basis to make tomato growing a profitable enterprise is evidenced by numerous letters that have been received expressing appreciation of the service.

HOME GARDENS:

The home garden preliminary talk was given 41 times in 12 counties, 6 of which arranged for follow up in 21 communities. The counties of Jefferson, Daviess, Henderson and Chris-



A power sprayer in a potato field. This grower paid for his sprayer the first season, spraying 16 acres.

tian, carried the program thru. The results are difficult of measurement, except to repeat what the Home Demonstration Agents say, namely, that there is a considerable increase in the amount of vegetables canner and in their variety. And the demonstrators say their gardens were never better.

MISCELLANEOUS:

Mexican Bean Beetle: Anticipating the reappearance of the Mexican Bean Beetle, a wholesale demonstration of the Alabama formula dust was undertaken in Estill, Knott and Breathitt counties.

In Estill County two meetings were held, and 25 gardens visited and dust applied. As a result, the implement store in the county seat sold 9 dozen guns and almost 200 pounds of dust.

In Knott County, one meeting was held and 30 gardens visited. Eighty guns and 175 pounds of dust were sold.

In Breathitt County one meeting was held at the county seat, and two at outlying home gardens. Forty gardens were dusted and over a gross of guns and 250 pounds of dust sold, following these meetings.



Dusting a field of potatoes for blight. Dusting gave an increase in yield of 22 per cent.

The beetle appeared in Jefferson County for the first time, having crossed the Bullitt County line. Steps were taken to have dust locally mixed, by a corporation engaged in the manufacture of insecticides, at a saving to the grower of 4c per pound. The damage done by the beetle was very slight, however, in 1924.

Striped Cucumber Beetle: The growers of cucumbers at Grayson Springs, Leitchfield, and McQuady, used 6½ tons of gypsum and 400 pounds of calcium arsenate during the season.

In the counties of Jefferson, Campbell, Kenton and Boone, 175 growers used over 3 tons of nicotine sulfate dust, in cucumber beetle control. Growers in these counties prefer this dust to the calcium arsenate-gypsum dust, since it kills almost instantly, and since they are favored in being situated close to points of its manufacture.

Pickle Worm: Profiting from the experience of 1923, when many fields of muskmelons were entirely destroyed by this insect, preparations were made for demonstrating the Alabama and Georgia recommendations of dusting with pure calcium

arsenate. Only one demonstration was finally staged in Petersburg, Boone County, because the pickle worm did not reappear generally enough to be feared. This method of treating seemed effective. Incidentally, the calcium arsenate furnished by one firm caused no burning of foliage; that by another did.

Aphids on turnips and spinach: Aphids were so numerous in some plantings of turnips for greens and for roots that the fields were disked up. Control by dusting with nicotine sulfate dust strikes many growers as being too expensive to be practiced. However, Mr. John Wurtele, Jefferson County, agreed to buy the dust if he could be convinced it would pay; the manufacturers agreed.

On 4 acres 400 pounds of dust at a total cost of \$64.00 were used. Two applications, taking in all 5 hours, were made. Over 85 per cent of the lice were killed and the turnips yielded the rate of almost 300 bu. per acre. Turnips are scarce and they are bringing \$1.50 per bushel on Louisville market.

An attempt at invigorating greens to help them outgrow aphid injury was made in Fayette County (Mr. John Fister), using nitrate of soda as a topdressing. Two hundred pounds at \$3.75 per hundred doubled the yield over that not treated (but gave only half a crop at that); the insecticide method is the better one, apparently. Acre receipts were about \$125.00.

Advisory Service to State Charitable Institutions:

1924 was the second year the truck farms of the Lakeland Hospital for the Insane were put under the care of the College. Dr. W. A. Jillson, Supt., states that at the normal rate of consumption there will be:

Potatoes, two months past harvest season for early potatoes in 1925.

Canned corn, to July, 1925.

Canned tomatoes, to September, 1925.

Canned beans, to July 1925.

Sweet potatoes, to March, 1925.

Turnips, cabbage, to May, 1925.

In addition the Hospital sold to others:

1,500 bushels of onions.

400 barrels of cabbage.

1,400 bushels of beans.

The trouble previously has been the use of poor seed, bought on a competitive basis. Seed is now bought from recommended seedsmen.

1924 was the first year for the Eastern State Hospital to follow the example of Lakeland. The outstanding feature of our help there was the raising of potatoes, 2,000 bushels in excess of storage facilities, and 4,700 bushels in excess of the crop of 1923, the acreage being 52 in each year. Kentucky certified seed did it.

The satisfactory experience of these Institutions has led Mr. Jos. P. Byers, State Superintendent, to arrange to have all seed lists and fertilizer requisitions for State Charitable Institutions audited by the Field Agent in Horticulture.

Farm Economics

W. D. NICHOLLS

Business analysis work carried on by the Department of Farm Economics in 1923 indicated that the most important single factor for farm profits was the control of expenses or costs of production.

During the 15 years preceding the war general commodity prices rose an average of 2% a year. In the subsequent price slump agricultural products dropped considerably more than did those things which farmers need to buy. There are excellent grounds for believing that the downward trend of prices will continue for some time to come. In view of this situation the extension program of the Department of Farm Economics during 1924 placed special emphasis on the question of costs and on ways and means of controlling and reducing costs. The chief means employed were accounts of various kinds including inventories, financial accounts, cost accounts and survey records.

Farm Accounts. Approximately 500 account books were distributed to farmers in various parts of the state. As far as possible members of the department staff and county agricultural agents assisted in taking farm inventories and instructing in entering receipts and expenses and in summarizing the accounts. Follow-up work was done in Larue County and in Mason and Fleming counties with farmers with whom intensive work in farm accounts had been done during the preceding year. This was done through meetings and visits to cooperators in these counties.

Farm Business Analysis. A special effort was made during the year to interest and instruct farmers in practical ways of analyzing their business. In 1923 group farm business analysis work was done with 241 farmers in Mason and Fleming counties and 84 farmers in LaRue County. For each of these farms the business was summarized and a factor sheet worked out involving an analysis of the farm investment, receipts, expenses, net earnings, degree of control of expenses, labor efficiency, volume of sales, crop yields, production per live stock unit, price of products, diversity of enterprises and other factors. An individual analysis was made for each farm showing

a comparison of the efficiency factors of the farm with the average and the most successful farms of the section. This individual analysis and comparison was returned to each farmer through the county agricultural agent. The year's net earnings of the most successful 15 farmers averaged \$3,203 as compared to \$1,029, average for all the farmers. The following sheet shows the form of statement sent to each farmer in the Mason and Fleming group.

**BUSINESS STATEMENT OF 241 FARMS AND THE BEST 15 FARMS
MASON AND FLEMING COUNTIES**

	Your Farm*	Average of 241 Farms	Average of Best 15 Farms
1. Farm investment (operator's dwelling not included)		\$17,927	\$21,753
2. Farm receipts		3,714	7,124
3. Farm expenses		1,941	3,038
4. Net receipts (line 3 subtracted from line 2)		1,773	4,086
5. Interest on farm investment at 6%		1,076	1,305
6. Farmers' earnings for labor and management (line 6 subtracted from line 5).....		697	2,781
7. Value of food and other perquisites furnished by farm for the family living		332	422
8. Total net earnings		1,029	3,203
EFFICIENCY FACTORS			
Control of Expenses			
Expenses per \$100 income.....		52	42
Labor Efficiency			
Productive work days per man..		203	258
Productive work days per horse		47	56
Volume of Sales			
Receipts per 100 acres in farm..		2,443	3,851
Crop Yields			
Yield of corn per acre		35 bu.	41 bu.
Yield of tobacco per acre.....		1,094 lbs.	1,192 lbs.
Yield of wheat per acre.....		12.4 bu.	15.4 bu.
Quality of Livestock			
Returns per live stock unit.....		56.86	76.03

	Your Farm*	Average of 241 Farms	Average of Best 15 Farms
Returns per \$100 feed fed		103.60	151.19
Quality of Products			
Price per lb. for tobacco		23.3c	28c
Diversification of Enterprises			
Percentage of receipts from crops		61.9%	55.3%
Percentage of receipts from livestock		34%	39%

*Each farmer was given a copy of this sheet with the figures for his own farm inserted in this column.

Emphasis on a Well-Balanced Business. When the 241 Mason and Fleming County farms were grouped according to the number of points in which they exceeded the average farm by 10% it was found that 47 were not strong in any point. These gave net earnings of \$109 for the year's work and management of their operators. Sixty-five farms were strong in one point, the net earnings on these averaged \$667. Sixty-six farms were strong in two points, these gave net earnings of \$1,253. Forty-five farms were strong in three points, these returned net earnings of \$1,740. Eighteen farms were strong in four or more points, the net earnings on these averaged \$2,172. The extension work of the department has stressed the importance of a well-balanced farm business, that it is not merely good crop yields, or high yielding live stock or high-priced tobacco which determines profits; that farmers should bend their efforts toward strengthening the points of the business in which they are weak rather than spending additional effort on the point in which they already excel and that if a farm is strong in the seven points or a majority of them it is almost certain to return a profit.

Farm Organization Project in Union County. In cooperation with County Agricultural Agent Brewer an extension project in farm organization was carried on in Union County covering a period of 10 weeks, during which time 272 farmers were visited and their business analyzed. At community meetings held in various parts of the county principles of sound organization

were presented. A sheet showing the efficiency factors for each farm is being worked out and will be returned to each cooperator in the early part of 1925 at which time it is planned to hold community meetings at which results of the business analysis will be discussed and their application shown to the reorganization of farms for better profits during the coming year.

Regional Demonstration of Farm Organization in the "Jackson Purchase." This project was begun in February and the entire time of one worker was devoted to the project during the remainder of the year. The purpose of the project was to teach and secure the application of better principles of farm organization in this important agricultural region. Nineteen representative farmers located in Graves, Marshall, Calloway and Fulton counties kept detailed cost accounts on their farm business. In addition to these, seventy farmers kept financial records. The field worker visited these cooperators at frequent intervals throughout the year.

In addition to this work on farms the field worker held numerous meetings at which the principles of economic farm organization were discussed. As a result, farmers of the region have come to a better understanding of fundamental economic principles underlying their business and have made definite steps in improvement.

Cost of Production. Demonstrations in the keeping of cost of production records were continued during the year in Fayette, Spencer, Christian, Fleming, Harrison and Bourbon counties and new cooperators were added in Union county. One significant point brought out in this work is the great difference in the cost of production on different farms. For example the cost of producing burley tobacco ranged from 10c a pound on one farm to 33c on another. The cost in the dark fire cured district ranged from 9c to 38c per pound. The cost of producing milk varied from 13c per gallon on one farm to 48c on an adjoining farm. The cost of producing hay was \$10.72 per ton on one farm and \$20.75 on a neighboring farm. The cost of horse labor ranged from 80c on one farm to \$2.37 on another farm for each day of horse work.

Fairs and Exhibits. An exhibit was made at the State Fair, this being designed to impress the importance of control

of expense, labor efficiency, volume of sales, crop yields, quality of live stock, quality of products and diversification of enterprises and other factors the importance of which had been brought out by the work of the department. The lesson which the exhibit was designed to teach was elaborated on by a printed circular distributed to visiting farmers. This exhibit material was also used in the exhibit of the College of Agriculture at the International Live Stock Exposition. Special exhibit material was furnished by the department during the year for county and community fairs held in Nicholas, Fayette, Woodford, Owen, Daviess and Clark counties.

Farm Layout. Assistance and suggestions were given during the year to approximately 20 farmers on the problem of farm layout, including arrangement of buildings, improving the size and shape of fields and similar points.

Farm Leases. During the year the department continued its service to farmers on the question of equitable farm leases. Specimen leases were sent to farmers upon request, these showing the terms of leases for various localities in the state which had proven satisfactory and profitable to both the landlord and tenant.

Extension Work in Community Organization. Work in community organization was continued during the year by the head of the department. Increased impetus was given to the work in Fayette County in expanding the successful program of the previous year in securing interested group action. The effectiveness of this work has received wide recognition in other states. The department has responded to calls for assistance in community organization work in Clark, Spencer and Franklin Counties.

Miscellaneous Activities. These included office interviews with farmers who came with questions involving farm economic problems. Similar questions were presented by letter and were answered during the year. Members of the staff assisted in promoting the annual Farmers' Week, the annual Rural Life Conference and the state meeting of the county agricultural agents at Lexington.

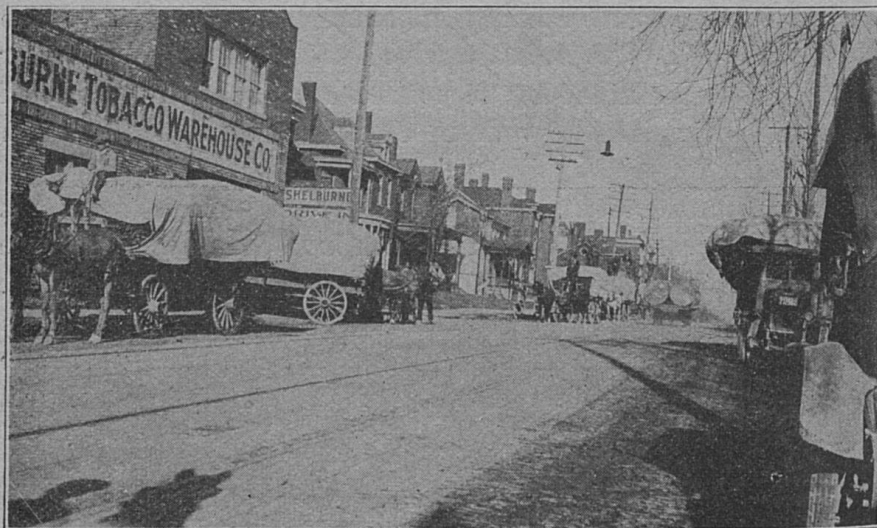
Marketing

O. B. JESSNESS

The extension work in marketing during the year was directed mainly along the following lines:

1. Educational work relating to marketing, prices and cooperative organization.
2. Assistance to farmers in considering and developing plans for cooperative marketing.
3. Tobacco grading and handling.

There has been a distinct increase of interest among Kentucky farmers in economic problems and the educational work has had for its aim the development of a better understanding of the economic forces which influence agriculture. Because of the interest in and the importance of prices, much of the emphasis has been placed upon the factors which influence price as well as the general movement of prices. Careful consideration has been given to cooperative marketing. The effort has been to give to farmers a better understanding of the real possibilities of organized marketing as well as its limitations. In view of the extensive cooperative marketing enterprises in operation in Kentucky, a more general appreciation of the fundamental principles is essential to the proper and fullest development of these associations. Many of the problems center



Careful protection during delivery is important.

about the question of prices and price-making forces. The limitations of cooperative marketing in controlling prices have been emphasized in the educational work in order that members may not expect impossibilities and that they may realize their responsibilities in making proper adjustments in their production programs. The possibilities of cooperative marketing have been analyzed and emphasized, including the importance of proper grading and standardization, the use of market information, and the employment of salesmanship and of collective bargaining. The response of farmers to this work has been gratifying.

The educational work has been carried out in cooperation with county agents, representatives of the tobacco associations and others. A large number of meetings of tobacco locals and other gatherings of farmers have been attended for the presentation and discussion of this material.

Assistance has been given to farmers contemplating organization for marketing. Thus, at the request of milk producers, plans were formulated and suggestions made for their adoption and the operation of an organization of milk producers in the Louisville district. Similar aid was given in connection with cream and live stock shipping associations at various points.

The extension work relating to tobacco has involved not only local grading demonstrations of the kind previously held in cooperation with county agents and the tobacco associations, but special emphasis has been placed upon demonstrations at receiving warehouses. The Section of Markets has had the active cooperation of the tobacco associations in this work. The classing demonstrations at receiving houses have been carried out in the following manner. Representative crops which have been delivered by growers have been weighed and graded in the usual way after which they have been carefully reclassified and again weighed and graded, the grading in each case being done by an association grader. A comparison of grade prices before and after reclassifying illustrated the financial advantages of proper classing of tobacco. This has been a very valuable feature because it has furnished a definite measurement in dollars and cents of the importance of careful classing. A total of 11,552 pounds of dark tobacco, from twenty different farmers in West Kentucky showed an average increase as a result of

reclassing of \$2.88 a hundred. Several lots showed a gain as high as six cents a pound and one small lot gained seven cents a pound as a result of reclassing.

The importance of proper handling and grading has been brought to the attention of tobacco growers at a number of



Showing mixed grades of tobacco from Lexington market. One of fifty exhibits shown in tobacco warehouses in Central and Western Kentucky.

meetings. A poster carrying information of this kind was prepared and is being prominently displayed at receiving houses and other places in all tobacco districts of the State.

Various miscellaneous marketing work has been carried on by the Section during the year. Farmers have been aided in locating outlets and have been given information regarding market prices, conditions and future prospects thru correspondence and press articles. An exhibit illustrating the possi-

bilities and limitations of cooperative marketing and also sound and unsound principles of marketing, attracted much favorable attention at the State Fair.

PUBLICATIONS ISSUED DURING THE YEAR

- Circular 161. Growing Cotton in Kentucky.
 Circular 162. Control of Angular Leaf Spot and Wildfire of Tobacco.
 Circular 163. Better Land Utilization in Kentucky.
 Circular 164. Relation of Live Stock to the Maintenance of Soil Fertility.
 Circular 165. Blackhead in Turkeys.
 Junior Week and Junior Club Announcements.
 Circular 166. Clothing the Baby.
 Circular 167. When and How to Cull.
 Circular 168. Making a Tailored Coat.
 Circular 169. Practical Suggestions of the Control of Infections Abortion in Cows.
 Circular 170. Clothing and Its Relation to Health.
 Circular 171. Annual Report of the Extension Division for 1923.
 Circular 172. Why Some Farms Pay.
 Circular 173. Selecting, Renovating and Making the Hat.
 Circular 174. 1. Making Limestone More Available.
 2. Plans and Specifications for Building and Burning a Lime Kiln.
 Circular 175. Poultry Calendar.
 Revised editions and reprints are as follows:
 Circular 110. Hatching and Raising of Chicks. (Revised.)
 Circular 139. A Simple Hot and Cold Water System. (Reprint.)
 Record Book for Junior Agricultural Clubs. (Revised.)
 Circular 85. Docking and Castrating Lambs.
 Circular 112. Clothing Project Unit 1, Junior Agricultural Clubs. (Revised.)
 Crop Record Book, Junior Agricultural Clubs.
 Circular 100. Potato Project, Junior Agricultural Clubs. (Revised.)
 Circular 111. List of Farm Building Plans. (Revised.)
 Circular 119. 1. Dairy Heifer Calf Project.
 2. Dairy Cow and Calf Project.

LIST OF EXTENSION WORKERS

January 1—December 31, 1924

ADMINISTRATION

- *Thomas Cooper, Dean and Director.
 T. R. Bryant, Asst. Director.
 *D. H. Peak, Business Agent.
 S. K. Slaughter, Secretary.
 †W. S. Smith, Editor.
 ‡C. A. Lewis, Editor.
 N. R. Elliott, Leader of Specialists.

AGRONOMY

*George Roberts, Head of Department of Agronomy.
Ralph Kenney, Field Agent, Crops.
S. C. Jones, Field Agent, Soils.

AGRICULTURAL ENGINEERING

*J. B. Kelley, Field Agent in Agricultural Engineering.
Earl G. Welch, Field Agent in Agricultural Engineering.

ANIMAL HUSBANDRY

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

COUNTY AGENT

C. A. Mahan, State Agent.
Gordon B. Nelson, Asst. State Agent.
E. J. Kilpatrick, Asst. State Agent.
†S. J. Lowry, Asst. State Agent.
W. C. Wilson, Asst. State Agent.
‡J. H. Atkerson, Green County.
L. M. Amburgy, Boyd County.
S. W. Anderson, Nicholas County.
†R. O. Bate, Lewis County.
Kimber Bowles, Estill County.
G. W. Bacot, Hickman County.
L. C. Brewer, Union County.
‡C. V. Bryan, Taylor County.
‡John Brown, Owen County.
T. L. Britton, Leslie County.
O. R. Carrithers, Knott County.
A. J. Chadwell, Pulaski County.
J. V. Coleman, Larue County.
O. L. Cornn, Whitley County.
Harry Cottrell, Marshall County.
†Homer G. Cress, Christian County.
E. H. Darnaby, Trimble County.
C. O. Dickey, Webster County.
C. B. Elston, Lincoln County.
P. M. Frye, Owsley County.
†W. R. Gabbert, Fayette County.
J. B. Gardner, Calloway County.
I. C. Graddy, Todd County.
‡D. S. Green, Knott County.
R. M. Greene, Mason County.

- Robt. Harrison, Harlan County.
H. J. Hayes, Wayne County.
R. M. Heath, Washington County.
C. L. Hill, Nelson County.
J. O. Horning, Barren County.
C. E. Houk, Garrard County.
H. R. Jackson, Shelby County.
W. C. Johnson, McCracken County.
T. H. Jones, Lee County.
R. H. King, Morgan County.
H. J. Kline, Warren County.
H. F. Link, Campbell County.
J. C. McClure, Daviess County.
H. F. McKenney, Grant County.
Donald W. Martin, Henderson County.
R. J. Matson, Boone County.
Earl Mayhew, Knox County.
F. E. Merriman, Jefferson County.
C. E. Miller, Boyle County.
L. F. Morgan, Magoffin County.
J. L. Miller, Taylor County.
J. C. Nageotte, Breckinridge County.
G. B. Nance, Oldham County.
L. C. Pace, Livingston County.
†C. F. Park (Asst.), Oldham County.
‡Horace Patterson, Grayson County.
W. R. Reynolds, Jackson County.
W. H. Rochester, Muhlenberg County.
G. C. Routt, Graves County.
M. H. Sasser, Russell County.
†N. C. Shiver (Asst.), Mason County.
†R. E. Sleppy (Asst.), Campbell County.
Robt. F. Spence, Madison County.
‡E. R. Sparks, Clay County.
John R. Spencer, Mercer County.
W. D. Sutton, Hopkins County.
†Walter Trice, Allen County.
H. D. Triplett, Bourbon County.
R. V. Trosper, Breathitt County.
†C. M. Wade, Owen County.
F. C. Walker, Adair County.
H. K. Warth, Crittenden County.
P. R. Watlington, McLean County.
J. A. Wesson, Meade County.
†E. A. Whalin, Ballard County.
F. D. Wharton, Shelby County (Colored County Agent).
C. A. Wicklund, Kenton County.

Warren Williams, Christian County (Colored County Agent).
Fred B. Wilson, Laurel County.
R. O. Wilson, Union County.
L. H. Woodhouse (Assistant), Jefferson County.
Clyde Watts, Carroll County.
A. C. Burnette, in charge of Colored Agents.
J. E. Kuykendall, Warren County (Colored Agent).
H. A. Laine, Madison County (Colored Agent).

CLOTHING

Irene Piedalue, Field Agent in Clothing.
†Catherine Christian, Field Agent in Clothing.
†Nellie Gard, Field Agent in Clothing.
‡Isabelle Story, Field Agent in Clothing.
‡Edith Lacy, Field Agent in Home Economics.

FOODS

Mary Mae Miller, Field Agent in Foods.
Eleanor Enright, Field Agent in Foods.

FARM MANAGEMENT

W. D. Nicholls, Head of Department of Farm Management.
†Z. L. Galloway, Field Agent in Farm Management.
‡Harry A. Ward, Field Agent in Farm Management.

HOME DEMONSTRATION

†Mary E. Sweeny, Head of Department of Home Economics.
†Margaret Jonas, Asst. State Leader Home Dem. Agents.
Lulie Logan, Asst. State Leader Home Dem. Agents.
‡Myrtle Weldon, State Leader Home Demonstration.
‡Zelma Monroe, Asst. State Leader of Home Dem. Agt.
†Vashti Cave, Home Dem. Agt., Oldham County.
†Fannie Ellis Cocke, Christian County.
†Lillian Cole, Campbell County.
Rose B. Craft, Knott County.
Mary L. Daugherty, McLean County.
†Octavia Evans, Daviess County.
Zilpha Foster, Muhlenberg County.
‡Mary Catherine Gormley, Boyd County.
†Virginia M. Hobbs, Mercer County.
‡Mattie Hodges, Christian County.
Lulu Holmes, Ballard County.
Ida Hagman, Graves County.
Catherine T. John, Jefferson County.
Ouida Midkiff (Asst.), Pulaski County.
Martha Ida Moore, McCracken County.
Orie W. Newman, Woodford County.

Ethel Nice, Garrard County.
 Rheda W. Oury, Calloway County.
 Roxie C. Perkins, Harlan County.
 †Elizabeth Roberts, Boyd County.
 Mary Ella Rudy, Campbell County.
 ‡Ruth Reilly, Woodford County.
 ‡Emma Roseboom, Mercer County.
 Laura Spence, Laurel County.
 Sidney Standifer, McCreary County.
 ‡Anna Stread, Henderson County.
 Gladys Waddell, Lee County.
 ‡Helen M. White, Daviess County.
 Jessie O. Yancey, Fayette County.

HORTICULTURE

W. W. Magill, Field Agent in Horticulture (Orcharding).
 John S. Gardner, Field Agent in Horticulture (Gardening).

JUNIOR CLUBS

‡J. W. Whitehouse, State Leader, Junior Club Work.
 †C. W. Buckler, State Leader, Junior Club Work.
 J. M. Feltner, Field Agent, Junior Club Work.
 M. S. Garside, Field Agent, Junior Club Work.
 Anita Burnam, Field Agent, Junior Club Work.
 Garnet McKenney, Field Agent, Junior Club Work.
 E. E. Fish, Field Agent, Junior Club Work.

DAIRY

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

MARKETS

J. W. Jones, Field Agent in Markets.
 †D. G. Card, Field Agent in Markets.
 E. C. Vaughn, Field Agent in Markets.

POULTRY

J. R. Smyth, Field Agent in Poultry.
 J. Holmes Martin, Field Agent in Poultry.
 James Humphrey, Field Agent in Poultry.
 C. E. Harris, Field Agent in Poultry.

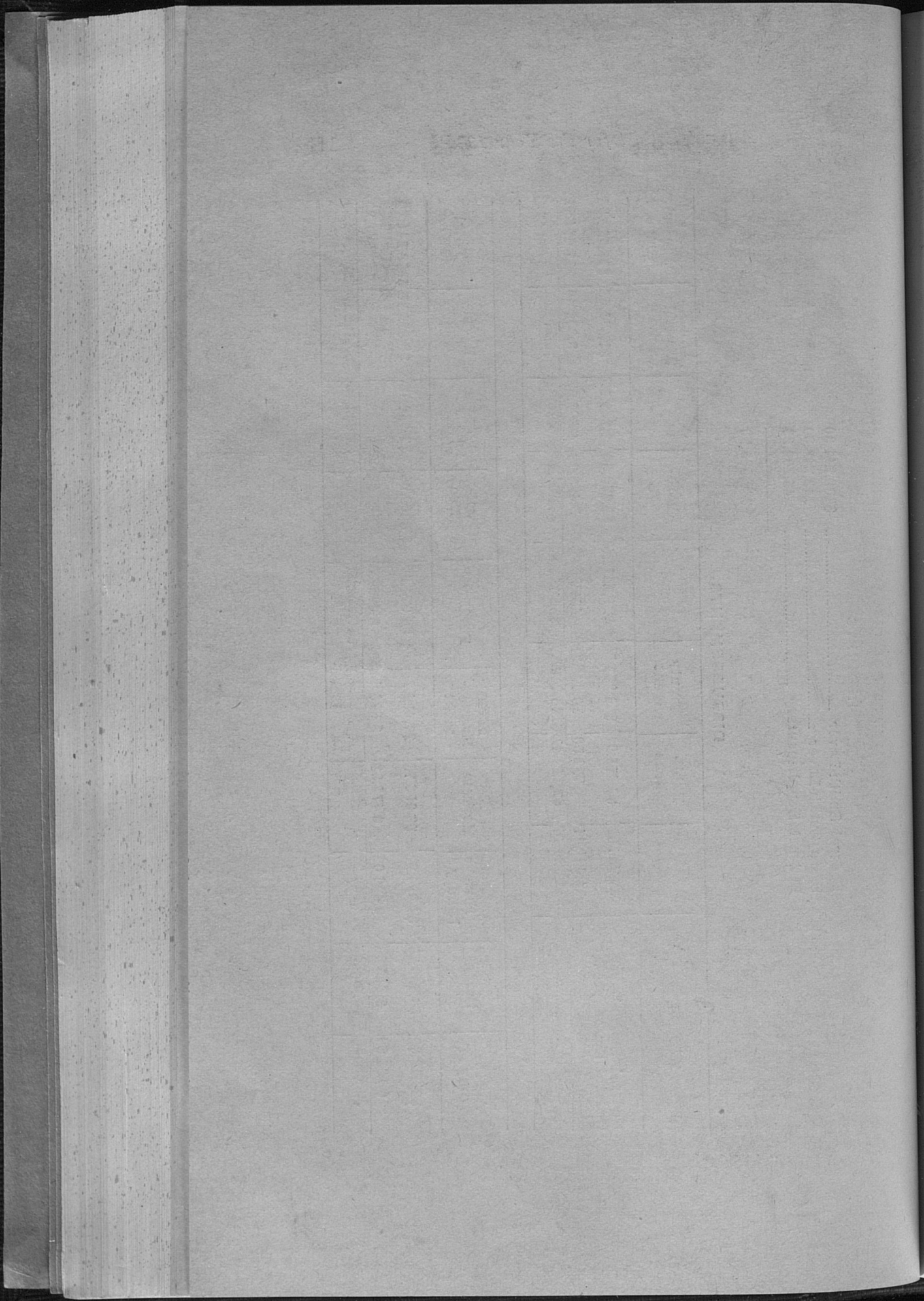
VETERINARY SCIENCE

T. P. Polk, Field Agent in Veterinary Science.

*Part-time employes.

†Resigned.

‡Appointed.



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