

UNIVERSITY OF KENTUCKY

COLLEGE OF AGRICULTURE

Extension Division

THOMAS P. COOPER, Dean and Director

CIRCULAR NO. 259

ANNUAL REPORT

FOR THE
YEAR ENDED DECEMBER 31, 1931



Demonstration team preparing a school lunch. Useful, practical and interesting things occupy the hands and the minds of 23,000 4-H club girls and boys in Kentucky.

Lexington, Ky.

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

LETTERS OF TRANSMITTAL

Lexington, Kentucky.
January 4, 1932.

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, 1931. 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 P. COOPER, *Dean and Director.*

Lexington, Kentucky.
January 11, 1932.

Honorable Ruby Laffoon,
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, 1931.

Respectfully,

FRANK L. MCVEY, *President.*

CIRCULAR NO. 259

Annual Report of The Extension Division for 1931

T. R. BRYANT, Assistant Director

To the farmers of Kentucky the devastating drouth of 1930, seemed the climax of a decade of trying economic conditions. Coincident with that calamity the industrial depression grew worse thru 1931. This combined with other forces to cause the small yields of Kentucky farms in 1930, to be sold on a depressed market and the consequent small returns left farmers in a serious situation. Every effort was extended to aid farmers in 1930, but the effect of the depression was more fully realized in 1931, when delayed debt payments became due and when prices of farm products had suffered further decline. Such conditions naturally subjected the Extension Service to an exceedingly severe test. Heavy duty was laid upon extension workers in the administration of the farm loans made by the Government in 1931 just as had been the case with the reduced freight permits during the preceding year. Despite this time-consuming duty, a larger program of work than in any previous year was accomplished.

This was made possible thru the volunteer local leaders, 8,402 men and 3,008 women, who realized the need and gave freely of their time and labor. These leaders rendered efficient service. They attended 1,362 leaders' training schools in order to prepare themselves for greater usefulness.

A better conception of the importance of well organized community and county programs has been gained by people generally. Organized programs were carried on in 1,382 communities.

Fortunately the yield of fruits and vegetables in 1931 was bountiful. This abundance, after the want of 1930,

enabled the Extension Service to render still greater aid particularly in advocating the conservation of all farm products for family use the year round. Efforts were redoubled to induce and aid farm families to produce, can, dry, cure, preserve and store the necessary supplies. This entailed work with gardens, meat production, cutting and curing, improved canning and preserving methods and much attention to proper storage of supplies. Reference to later sections of this report will give an idea of the extent to which these efforts were pushed. The county workers in agriculture and home economics were supported by specialists from the University, by the radio and by the press. Results were gratifying, for certain counties which had asked relief in 1930 were able in 1931 to send surplus supplies to needy areas, a service of which they were justly proud. Barns filled with feed were seen in places where there had been no feed for the stock the year before and pantries were filled to capacity. It should be borne in mind that this phase of extension work is not new, nor is it to be abated soon if ever.

The development of new sources of income, likewise the reduction of production costs, are matters of great importance to farmers. The increased use of lespedeza gave many farmers the opportunity to sell seed at a profit, to produce excellent hay at low cost and to increase the carrying capacity of pastures, particularly in dry weather. The cow testing associations demonstrated to those willing to affiliate, that by milking fewer but better cows, their profits were greater than those formerly made from larger herds. The four-day cream grading plan gave premium prices to those adopting it. Largely as a result of extension work among Kentucky sheep breeders, flocks were improved to the extent that breeding stock was shipped to 16 states and what is more important, the adoption of docking and castrating and other improved practices in lamb production resulted in improved prices, the trimmed lambs often bringing a dollar or more per hundred above prices paid for

those not trimmed. Hogs fed by the "ton-litter method" returned an average profit of \$25.21 per litter. The use of new strains of root-rot-resistant burley tobacco developed at the Experiment Station has become wide-spread in several counties thru extension demonstrations and the quality produced commands the highest prices. The results from demonstration of improved firing of dark tobacco, according to instruction given by the College, were even more striking when the prices were compared with those received for crops not so handled.

The charge has been made that the Extension Service has taught farmers how to produce more, and that this has glutted markets and destroyed profits. This charge is contrary to facts. The College has never advocated larger aggregate production. In fact it has used every opportunity to advise against it, as for example, in its wide spread advice to reduce tobacco acreage. The College thru its Extension Service has taught economy of production and the importance of quality.

Its advice has been to till only the best acres where production per acre would be large. Heavy production per acre is almost invariably necessary to the lowest cost of production, under Kentucky conditions. It costs the same to plow a poor acre as to plow a rich one. Tillage costs are about the same for the poor land, but the returns are less than those from rich land. The College urges that land that does not return profitable yields be returned to pasture or forest and that cultivation be restricted to the most productive areas in order to reduce costs of production.

Quality of products has been emphasized. The docking of lambs, the production of high grade cream, the proper curing of tobacco and other methods of improving quality have been taught and their benefits demonstrated.

The College has urged cooperation and many farmers have profited by the improved methods of marketing. Assistance given milk producers in the Louisville area, the orchard grass cooperative, the lespedeza growers and other

such organizations is typical of the kind of effort that is being made to obtain better markets for farmers.

No activities for the improvement of agriculture and rural conditions are more far reaching than the work with boys and girls thru the 4-H clubs. The quality of training given is attested by the baby beef show annually which produces an exhibit of cattle equaled in number and quality by few of the other states. The same high standards obtain in other endeavors undertaken by the boys and girls. The girls excel in work in foods, clothing and home management and also enter into such projects as gardening and poultry raising.

The project work done thru 4-H club members in itself is important but of paramount importance are the habits of life, excellence of standards and the improvement of country life. There were 20,950 boys and girls doing 4-H club work in 1931.

The Utopia Clubs are a comparatively new development of the work with young people. These Utopia clubs are provided for young men and women above the 4-H club age of 19. Utopia clubs are now actively at work in 16 counties.

Extension work is performing for farm women a service worthy of the support of every citizen who believes in making country homes more convenient and livable and who believes that community life in the country should be as satisfying as it is in cities. Work in foods, clothing, home beautification, home management, canning, home provisioning, home conveniences and other equally worthwhile branches of work are undertaken. Mention should also be made of recreational facilities and the improvement of rural communities.

The improvement of the rural home is of vital concern to country people and it is to this end that efforts are made to make farming more profitable. In pursuing the goal of home improvement, the schools and churches usually share in the benefits. The adoption of higher standards of

living is to be desired when profits from the farming business allow. The well-being of both rural and urban communities rests upon such standards. Extension work in Kentucky is dedicated to this purpose.

COUNTY AGENT WORK

County extension workers found the year filled with new problems created by the great drouth of the preceding summer. Thousands of Kentucky farmers had lost practically all their crops and began the year with a serious shortage of food, seed, feed, fertilizer and other farm necessities. In addition, they had neither money nor credit with which to secure needed supplies and equipment.

When it was announced that the Federal Government had arranged to make loans to farmers county agents were besieged with requests from farmers for assistance in preparing the necessary applications. This work extended over a period of several weeks. This Federal aid was offered while many agents were still assisting in organized relief work for the drouth sufferers. These extra duties took much time from an otherwise normal schedule of extension work. However it presented an additional opportunity for service. Thru the seed loan work, \$2,535,927.51 was loaned to 27,500 farmers. For several years attention had been given to the discovery, recruiting and training of local leaders. Had it not been for them the county agents could not have completed so full a program. There were 8,402 local leaders enlisted in 900 community programs that the county agents had built. These local leaders enabled the agents to answer the emergency situation and in addition to accomplish the largest year's work that has been performed since extension work was organized in Kentucky. During this period it became clear that in addition to the work associated with the usual farm operations, much work must be done in promoting the live-at-home program. The need of food for the family and feed for livestock and the shortage of money made it necessary to formulate a

program giving especial attention to home gardens, canning, poultry and egg production, better utilization of dairy products, better care of home orchards, curing and even the canning of meat, and calling attention to many other enterprises calculated to reduce the drain of cash.

The following table indicates some of the activities and accomplishments:

ACCOMPLISHMENTS OF COUNTY AGENTS

Counties with agents-----	95
Communities that built extension programs-----	900
Community leaders in community-built programs-----	8,402
Leader training meetings-----	771
Attendance of local leaders-----	8,146
Meetings held by local leaders, not participated in by county agents-----	1,938
Attendance -----	80,179
Method and result demonstration meetings-----	2,800
Attendance -----	58,218
Adult result demonstrations started or carried thru year-----	17,378
Farm visits made by county agents-----	60,268
Farms visited-----	26,653
Home visits made by county agents-----	2,918
Homes visited-----	1,919
Office calls relative to work { office -----	122,705
{ phone -----	62,143
Individual letters written-----	68,014
Total all meetings held, including demonstrations, short courses, leader training meetings, etc.-----	12,063
Attendance -----	482,892

Miscellaneous

Farms terraced-----	188
Acres terraced-----	3,043
Farms that laid drainage systems-----	341
Acres drained-----	5,006
Water systems put in-----	81
Lighting systems put in-----	14
Animals in 4-H Club Work completed { Dairy -----	1,600
{ Poultry -----	71,264
{ Sheep -----	3,068
{ Swine -----	1,902
{ Beef -----	719

More than 1,100 of the local and county leaders were especially active in this character of service and over 1,000 meetings were held in the interest of the "Live-at-Home" program. Its success was indicated by the abundance of food, feed, fuel and other necessary supplies on hand before the beginning of winter.

During the year there were held over 2,800 demonstration meetings with an attendance of more than 58,000 persons. A little over 17,000 farm improvement demonstrations were held, an increase of 3,000 over the preceding year.

The purebred sire campaign continued, despite adverse financial conditions, and 549 purebred bulls, 276 boars, 800 rams and 739 roosters were placed in service.

HOME DEMONSTRATION WORK

In 33 counties the program was carried on thru home demonstration agents but in addition to these, special help was given to organized homemakers in 17 counties and to junior homemakers in 30 counties not having home demonstration agents.

Despite flood, followed by drouth and economic depression, more people have been reached and a larger number of improved homemaking practices have been reported than during any previous year. Three hundred and forty-nine community groups of homemakers and 382 community groups of girls representing 482 different communities have developed and carried out community programs of work in homemaking. Enrolled in these groups were 11,638 women and girls, 3,008 of whom functioned as leaders who took an active part in carrying on the homemaking program.

Program of Work. The phases of homemaking studied in any county are determined by the homemakers in that county by surveys, studies and discussion of their needs and desires. In addition to their homemaking program, they have participated in fairs, exhibits, tours, junior and adult

camp, community recreation, charity and many activities of an educational, recreational and cultural nature.

Foods and Nutrition. Homemakers in Kentucky are intensely interested in gaining the information and skill by which they may feed their families meals attractively prepared and served, well cooked and intelligently selected to provide essentials for growth, health and resistance to disease. In order to make this possible during times of depression the home demonstration department has emphasized the economy of producing on the farm a large part of the family living. The food and nutrition program put special emphasis on:

1. A well planned garden designed to furnish the variety needed for health and in a sufficient quantity for the family during the growing season with a surplus to preserve for winter use.
2. Canning, drying and storing of surplus for winter use.
3. Preservation of eggs for winter use.
4. Preservation of home-raised meat for winter use.
5. Better use of the products of the family cow: milk, cheese and butter.

More canning was accomplished than had even been done in Kentucky during any one year. The use of milk, butter, cottage cheese and eggs on the farms of Kentucky increased. In the early part of the year when rural Kentucky was suffering from food shortage much help and information was given regarding healthful, low cost meals. The homemakers' clubs cooperated actively with the Red Cross and other emergency organizations to help prevent malnutrition, pellagra and the usual disease and epidemics which follow such a food shortage as Kentucky experienced. In carrying on this program local leaders who rose to meet the emergency deserve high commendation. Information was carried by leaders from house to house and was presented to groups of non-club members. Menus and market orders were planned for families receiving help from emergency organizations.

In addition to the food emergency program inaugurated because of the drought and economic depression, the regular

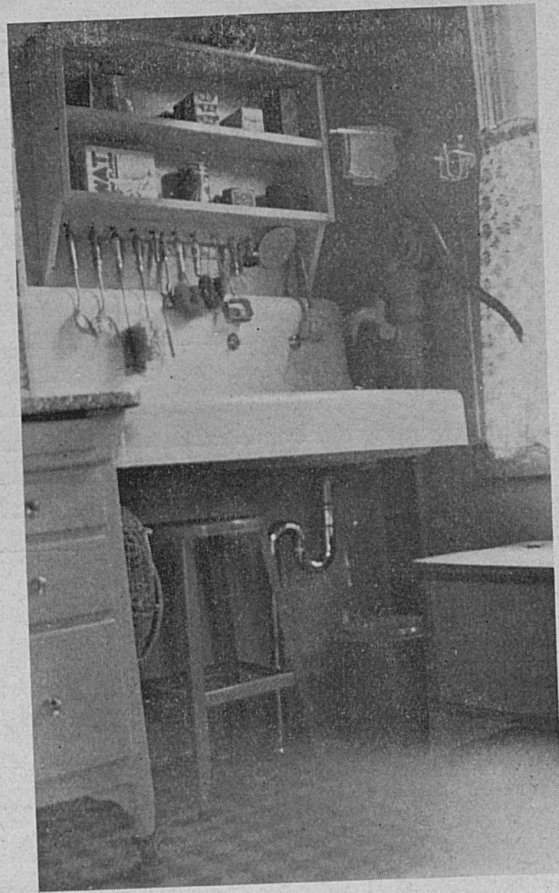
study of food in its relation to health, better methods of preparing and serving food has been continued.

The following statistical summary is indicative of the effectiveness of the food and nutrition program.

Homes that planned food budgets for the year-----	335
Homes that planned canning budgets-----	1,266
Homes that adopted balanced meals for the first time-----	1,120
Homes that adopted improved methods of child feeding-----	1,213
Individuals who adopted corrective diets in such cases as weight control, anemia, pellagra, constipation, etc-----	4,292
Homes that improved meal planning-----	1,877
Families that adopted improved methods of canning-----	11,943
Jars of food canned by junior homemakers-----	18 173
Jars of food canned by homemakers-----	765.078
Families that planted new vegetables-----	12,572
Homes that improved methods of food preparation-----	4,363
Individuals reached in food and nutrition program-----	15,732

Home Improvement. It would be supposed that during a year such as has just passed a relatively small number of home improvements would be made but such was not the case. The slogan of the home improvement program has been, "Do the most you can with what you have." One homemaker said in making her report of progress, "The University has taught us how to make many things which cost little or nothing but a little time and energy. We homemakers have been able to add to our homes many improvements by merely converting to better uses such things as we had at hand. We have learned also to put hours to better profit than useless complaining over ill fortune." In the home improvement project homemakers have been taught how to renovate materials, to reseat chairs, upholster furniture, refinish, repaint and recondition articles on hand, to make old rags into new rugs, to rearrange inconvenient kitchens for greater efficiency, to make simple labor saving devices, to use better methods of work and make better use of time. Because of lack of funds, people have stayed at home more than formerly. The men have

been interested in helping in their spare time to achieve these improvements.



Kitchen sink with pump. Note the convenient shelves, towel rack, garbage pail with foot lever, the stool, dish drainer and the wood-box on wheels.

Many improvements of the exterior of the home which cost time and energy rather than money, have been made. The following statistical summary is a credit to the initiative, ingenuity and idealism of Kentucky farm families.

Kitchens scored for efficiency and attractiveness-----	1,102
Homes that added purchased or homemade equipment-----	2,112
Pieces of furniture reconditioned-----	2,358
Homes that improved curtaining of windows-----	1,754
Homes that rearranged rooms for comfort and beauty--	1,581
Floors reconditioned-----	1,027

Rooms painted or papered.....	1,200
Pictures rehung or reframed.....	1,143
Articles made, such as rugs, waste baskets, stools and dyed articles.....	1,937
New lawns made.....	186
Old lawns improved.....	1,325
Premises cleaned	2,985
Homes that improved walks, fences or driveways.....	712
Dwellings repaired or repainted	510
Outbuildings, dwellings or fences painted or whitewashed	1,309
Homes that adopted other improvements in landscape....	1,523



Welch dressers provide excellent places for attractive dishes. Inside the doors are convenient shelves for linens or dishes. This kitchen was finished in green and ivory.

Clothing. Work in clothing was stimulated by the economic situation. Renovation and remodeling of cloth-

ing, the modernizing of old clothing and the reconditioning of millinery have been emphasized in the clothing program. The use of the less expensive fabrics which give satisfaction and meet the needs of the homemaker has been taught. Homemakers are learning how to select becoming colors and designs, to fit garments correctly, to construct them easily and efficiently, and to spend the clothing money in a way to get the greatest amount of satisfaction.



The "kitchen chariot" is a labor-saving device that is becoming popular. It is a board on rollers on which to move a wash bucket about the floor.

Garments constructed under suggestions	17,390
Garments remodeled	3,433
Hats remodeled or reconditioned	1,829
New hats made	764
Women who learned to use machine attachments	776
Women who improved buying of clothing	601
Women who used suggestions in selection of color and design	2,398
Women helped by the clothing program	6,120

Recreation. Recreation in the club, home and community has become a definite part of the home demonstration program. A short recreational program of games,

music and dramatics, has become a definite part of every homemakers' club meeting. These games and stunts are then carried into the homes. Homemakers are given definite help in the promotion and execution of a recreational program for the entire community.

The depression did not keep rural Kentucky from playing, as is shown by the following figures:

Communities that developed recreational programs according to suggestions	253
County-wide pageants or plays presented.....	93
County choruses developed.....	3
Community recreational programs planned and carried out.....	369

COMMUNITY ACTIVITIES

The development of altruism and civic responsibility is a very gratifying result of home demonstration work.

Communities that reported some activities in connection with community or county work.....	200
Communities that scored themselves.....	51
Club houses or rest rooms established.....	39

Homemakers' Camps. Four district and one county camp for homemakers were held during the year. Twenty-six counties participated. Two hundred and sixty-seven homemakers were full time attendants and 550 either visited or spent part time at camp. The purpose of the homemakers' camp is to make possible to rural homemakers a short but profitable vacation at little expense. Rest, recreation, music and handicraft make up a large part of the program. One lecture or demonstration each day sends the homemaker away with the feeling of having added to her information. The social contacts with homemakers from other counties and the opportunity to make new friends are highly appreciated.

Master Farm Homemakers. The College of Agriculture and The Farmer's Wife magazine cooperating have in five years recognized 25 outstanding Kentucky home-

makers. These women compose a Kentucky Guild of Master Farm Homemakers which is part of a National organization. This movement represents a first effort to give public, state and national recognition for achievement in homemaking.



State Fair exhibit of clothing by 4-H club girls.

Farm and Home Convention. During the past ten years the homemaker's section of Farm and Home Convention has grown from a group of 35 to 50 homemakers, from the Bluegrass Region of Kentucky, to a large group of women representing all sections of the State. This year 528 homemakers from 42 counties gathered with minds alert, pencils sharp, and notebooks ready. These women came with the definite responsibility of taking the message back to their respective community groups, thus making the Farm and Home Convention program far-reaching.

JUNIOR HOME ECONOMICS

Homemaking projects in food, canning, clothing and

room improvement are carried on with girls between the ages of ten and 20 years. Such work was carried on in 33 counties having home demonstration agents and 30 counties having agricultural agents only.

Clothing. There were enrolled 4,107 girls in clothing work in the 33 counties having home demonstration agents. The clothing program is a four-year project. The girl who takes the whole four units of clothing learns to work with all types of material, to construct all types of garments needed by a girl in the teens, to select design, color and fabric that are becoming and appropriate to the individual, to care for her clothing and to care for herself. Besides giving the girl the necessary information and skill to be well dressed at low cost, club work strives to develop the personality of the girl herself thru the activities in which she is given an opportunity to participate.

Foods. Three projects, family breakfasts, suppers and dinners, are offered to the junior homemakers of Kentucky. These projects are planned to encourage the club girl, to help with the selection and preparation of meals in the home, to give her skill in handling foodstuffs, to teach her the value of well prepared, attractively served meals, and to give her some of the fundamental principles of good nutrition. The club girl who takes all three food projects has experience in working with various types of foods and dishes served in the average family. She learns how to set the table correctly, to be an efficient hostess, to wait on table and to serve. She acquires better food habits and the responsibility for her own physical well-being. One thousand, one hundred and twenty-seven girls enrolled in food projects during 1931.

Canning. The very young girl likes to can food and is able to do it successfully. The 583 girls enrolled in canning projects canned 18,173 jars of food products, an average of 31 jars per girl. Many of these girls were quite

young and were getting their first experience in helping with the family food problem. The three units in canning include the canning of fruit, vegetables and meat; the mak-

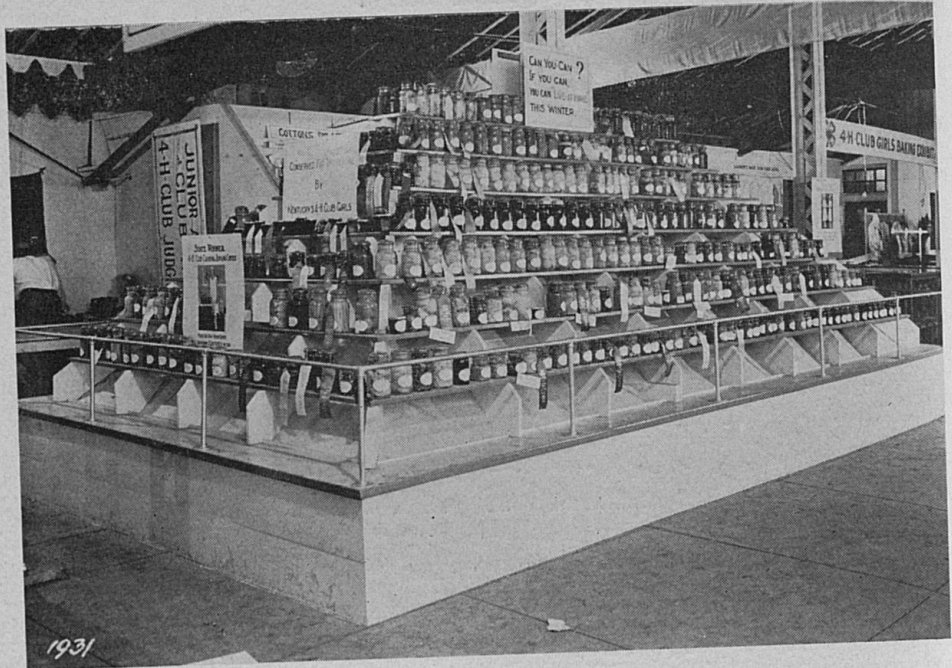


Exhibit of canned and preserved goods by 4-H clubs at the State Fair. Each of these specimens had won first prize in the county show, before being sent to the State Fair.

ing of jellies, jams, preserves, pickles and fruit juices; and the planning of a canning budget for the family group.

Room Improvement. The room improvement project is planned for older girls who have learned something of the principles of color and design and who have gained skill in sewing, in their clothing work. The program offers the girl an opportunity to beautify her own room while learning something of the art and skill of home beautification. Since the project requires considerable personal supervision and background of information, it has been undertaken by only 59 girls during the past year.

Miscellaneous Activities. Other junior activities are the homemaking program at Junior Week, community,

county and state team demonstrations, judging contests, style shows, health contests, fair exhibits, etc.

STATISTICAL SUMMARY

Communities in which home demonstration programs with women and girls were carried out.....	482
Enrollment in junior homemaking projects.....	5,051
Enrollment in adult homemaking.....	6,603
Volunteer local leaders who assisted in home demonstration programs	3,008
Training meetings held for local leaders.....	591
Attendance at training meetings.....	6,588
Demonstration and judging teams trained.....	167
Farm and home visits made by home demonstration agents.....	7 881
Individual letters written	13,704
Different circular letters prepared.....	881
News stories published	2,590
Office and telephone calls relating to extension work.....	22,469
Total meetings in relation to home demonstration work.....	9,377
Attendance at meetings	238,268

JUNIOR 4-H CLUB WORK

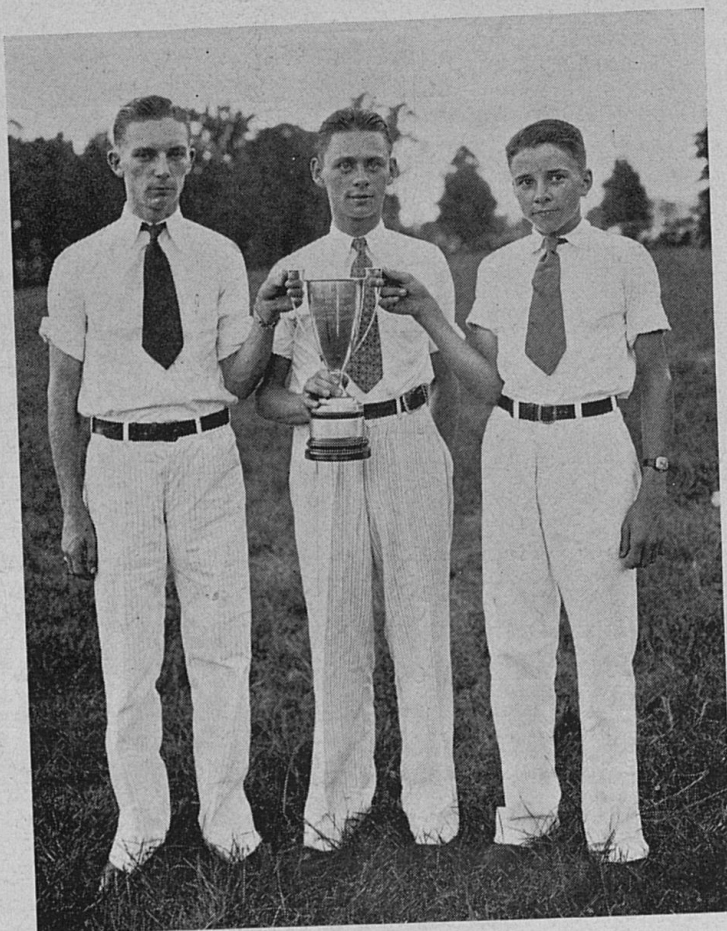
In 4-H Club Work there was an increase in both the enrollment and the per cent of completions. There were enrolled 20,950 club members and 16,290 or 77.7 per cent of them completed their work.

Volunteer Local Leaders. Two thousand one hundred and sixty-nine adult leaders volunteered their service this year in the promotion of Club Work in 1,148 organized 4-H community clubs. Leaders' pins and certificates were awarded again this year to volunteer leaders in recognition of their valuable services. These emblems are highly prized by the leaders.

Junior Week. Junior Week at the University was attended by 573 club members from 89 counties. Sixty leaders came with them. A number of restrictions were made in an effort to hold the attendance to 500 club members, but interest in this event seems to be growing in all parts of

the State. Of those present, 149 attended as winners of prize educational trips given by transportation companies and business firms.

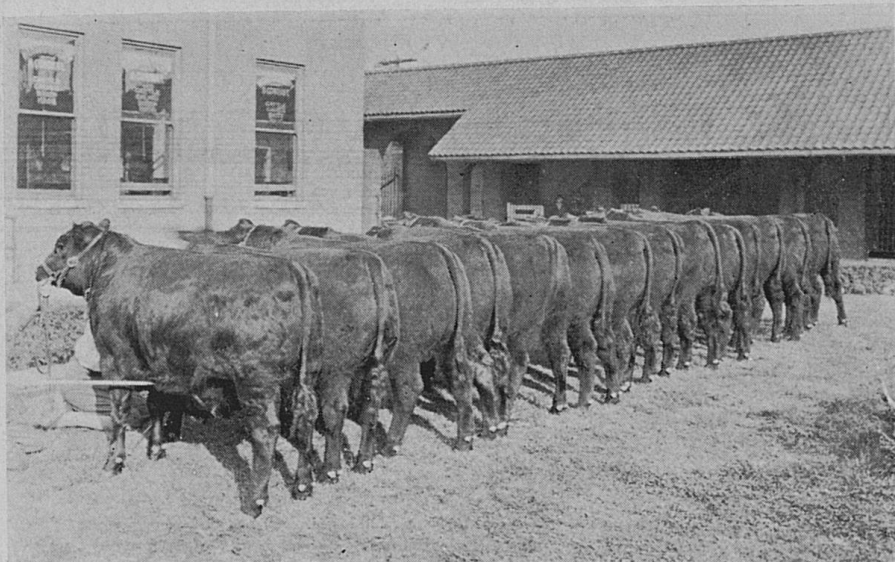
National 4-H Club Camp. Kentucky sent four delegates to the Fifth National 4-H Club Camp held in Washington, D. C.



State champion 4-H dairy cattle-judging team. Kentucky State Fair, 1931.

District Dairy Cattle Shows. Five district dairy cattle shows were held again this year. Three hundred and fifteen registered dairy cows and heifers were exhibited by club members. The shows were held at Lexington, Eminence, Bowling Green, Madisonville and Mayfield.

Butterfat Production Contest. The creamerymen of Louisville and Cincinnati gave prize trips to the National Dairy Show in St. Louis to the eight club members whose cows produced the largest amount of butterfat in a six-month's period. The average production of the eight winners was 299.82 pounds of butterfat in six months or 49.97 pounds of butterfat per month. At the dairy show there were 24 club members from Kentucky. Of these, eight were members of judging and demonstration teams and eight took cattle, of which there were 11 head.



Grand champion car lot of baby beeves at the State Show at the Bourbon Stock Yards. These cattle won in open classes, competing with the cattle exhibited by adult feeders.

State Fair. The premiums awarded in the 4-H Club Department of the Kentucky State Fair amounted to \$3,724. An Egg Show and a ring for 4-H Club Secretaries' Books were the new features added. In the Home Economics division there were 796 entries of clothing, 609 of canning, 160 of food and 55 of room improvement. Ninety-nine registered dairy cattle were exhibited and the poultry exhibits were the largest ever made at the Fair.

Baby Beef Show. Three hundred and ten Junior 4-H

club members fed 659 baby beeves in 1931, of which 619 were exhibited at the State Show in Louisville. The grand champion individual calf in the show and the grand champion carload were fed by club members. To win the purple ribbons in this show, club members compete against the champions in the Smith-Hughes classes and the champions of the adult feeders. The grand champion steer sold for 38c per pound and the grand champion carload for 13c per pound. The premium awards on the 4-H club exhibits were \$3,625.



Specimens of clothing made from flour sacks by 4-H club girls. They first bleach the sacks, removing the printing, and then dye them, when color is desired. One large mill in Kentucky donated over 20,000 unused flour sacks for the use of 4-H club girls.

National 4-H Club Congress. Thirty-two club members and leaders from Kentucky attended the National 4-H Club Congress held in Chicago, November 29th to December 4th. Among these were a livestock judging team, an

entrant in the Style Dress Revue and two health champions. There were also entries in canning, clothing and room improvement. Two of the scholarships given by the International Harvester Company were awarded to Kentucky.

UTOPIA CLUB WORK

The Utopia Club is an organization for young men and young women above club age, 19 and up, but who are not in a position to participate fully in the extension program for adults. The work was started in August, 1930. The purpose of the organization is to help young men and women to work out a more profitable and satisfying life on the farm. The work is essentially an advanced form of Junior 4-H club work, the projects being more difficult. In 1931, 12 Utopia Clubs were organized, with a total membership of 343. Of this number 167 were young men and 176 young women. A camp was held in August with an attendance of 41 members from seven counties.

PUBLIC INFORMATION

To serve newspapers desiring to publish farm information of interest and value to their readers, and also to keep the people of the State informed regarding the activities of the College of Agriculture, the Department of Public Information mailed a weekly release containing ten to 25 articles to all newspapers in Kentucky and also to many papers in territory adjoining the State, as well as to farm journals and other publications having Kentucky circulation.

Daily newspapers and press associations were furnished with items of spot news, including announcements and reports of meetings, information concerning noteworthy accomplishments, and numerous other types of news articles. Special material, consisting of features articles, news of value to particular sections, cuts, mats and pictures

featuring extraordinary events were furnished many newspapers and other publications.

A large amount of material for which special request had been made was furnished to various publications. An examination of the newspapers of the State indicates that editors find this material of value, many of them publishing every article. Questionnaires are sent to editors and conferences are held with a view to developing the usefulness of this service to the people of the State.

RADIO, EXHIBITS, VISUAL INSTRUCTION AND MOVABLE SCHOOLS

Full advantage has been taken of the opportunity for public service thru the radio. In cooperation with Radio Station WHAS of Louisville, an extension studio is maintained on the campus of the University, from which daily programs are broadcast. The College of Agriculture shares this program with the other Colleges of the University. During 1931, the College of Agriculture radiocast 237 educational talks on different phases of agriculture and home economics and devoted 52 periods of 15 minutes each to farm and home questions and answers. Three special programs were presented.

Exhibits. The educational exhibit at the 1931 Kentucky State Fair consisted of 12 booths, each illustrating the work of one department. A count shows that 7,796 persons visited this exhibit and 438 persons registered requests for publications or special information.

Exhibit material was furnished to county agents to make special educational exhibits at fairs or shows in 16 different counties after the State Fair.

Movable Schools. The movable school has come to be regarded as a most effective part of extension work. Experience has shown that a school of one day, and certainly not over two, is most effective. Each school is devoted pri-

marily to one line of work. They offer opportunity for the use of illustrative material and for instructors to establish close contact with those attending.

Farm and Home Convention. The annual Farm and Home Convention is more widely attended by Kentucky farmers and homemakers than any other meeting during the year. The 1931 convention attracted a registered attendance of 1,228 persons from 72 different counties in Kentucky, while the estimated unregistered attendance was 250.

Visual Education. Moving picture equipment was loaned to 25 county agents, while 20 others used personally owned equipment. One hundred and sixty films owned by the College of Agriculture were shipped to agents for their use. Eight agents were loaned stereopticon equipment, and four used film strip equipment from the College.

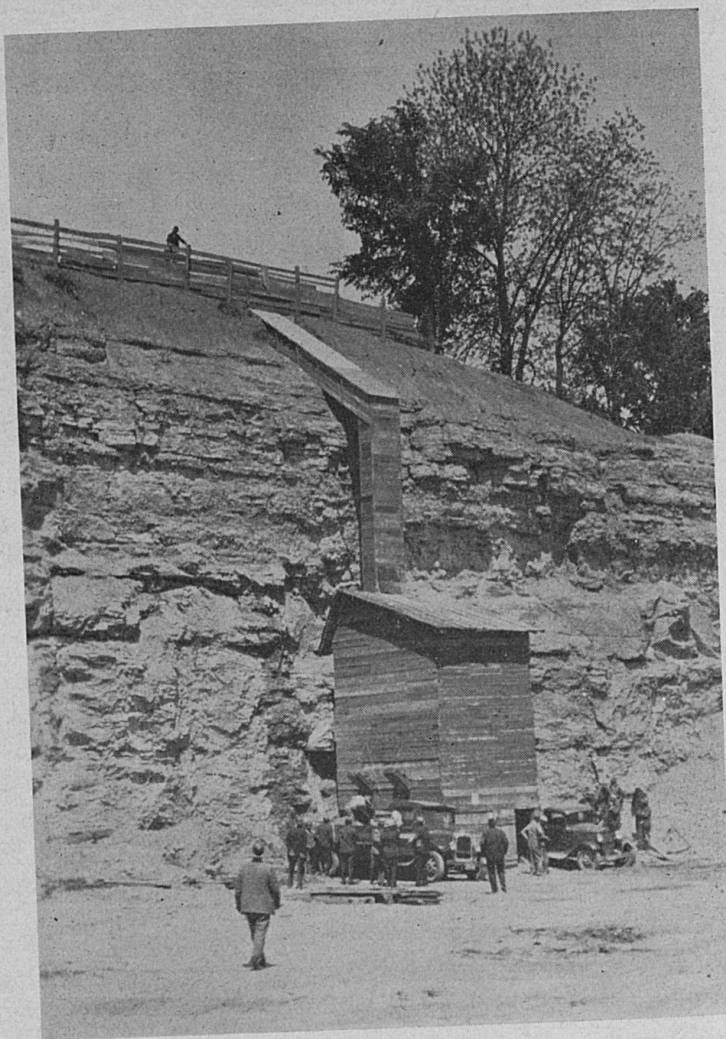
AGRONOMY

Liming Materials. Ground limestone, marl or burned lime, were used in all the 88 counties having county agents. Ground limestone was used on 8,480 farms in the 88 counties; marl on 453 farms in 37 counties, and burned lime, on 343 farms in 25 counties.

One hundred and sixty portable crushers were used in 56 counties, and 46 limestone sheds were used in 15 counties. Lime demonstrations were conducted on 1,221 farms in 64 counties. There were 166 men, in 20 counties, added to the lime honor roll, Warren County ranking highest with 48.

Approximately 160,000 tons of ground limestone were used in the 88 counties having county agents. A new source of cheap ground limestone is the by-product supplied by the new quarries opened by the state and county road departments in various sections. In many places the prices of ground limestone were much cheaper and the charges for hauling and trucking lower than in previous years.

How Marl Is Being Used. While no new counties have been added to the marl territory, many new beds have been found in the old territory, and 386 samples were sent to the Experiment Station for analysis. Since the beginning of marl work eight years ago, 5,759 samples of marl have been analyzed by the Experiment Station.



Marl-loading bin being operated on a commercial basis. Clark County.

The following tabulations show how marl has been used during this period:

In 1924, 138 men in 16 counties used.....	4,624 tons
In 1925, 437 men in 24 counties used.....	9,311 tons
In 1926, 317 men in 26 counties used.....	9,317 tons
In 1927, 243 men in 35 counties used.....	10,873 tons
In 1928, 283 men in 38 counties used.....	17,220 tons
In 1929, 472 men in 40 counties used.....	24,377 tons
In 1930, 390 men in 37 counties used.....	26,280 tons
In 1931, 453 men in 37 counties used.....	23,716 tons

125,718 tons

There were 157 marl demonstrations in 28 counties to show the value of marl on legumes and other crops. Nine marl loading and spreading demonstrations were carried on in seven counties.

Commercial Supply of Marl. In many places in Kentucky extensive beds of high-grade marl occur, that should be developed as commercial sources. This marl could be delivered by truck over good roads to points from five to ten miles distant, much cheaper than any other form of lime. At one place marl was thus commercially worked during 1931. It was delivered to farms, in trucks carrying from three to four tons. In some instances it was spread on the land thru an end-gate spreader, attached to the truck. These men also produced ground limestone which they delivered to farms and spread in the same way. They claimed that delivery enabled them to sell marl and lime to many farmers who otherwise would not have used it.

Since 1923, approximately 125,718 tons of marl and 1,250,000 tons of ground limestone, or 1,375,718 of both limestone and marl, have been used in the counties having county agents.

County agents report that 1,962 farmers in 35 counties used light applications of limestone mixed with superphosphate, compared with 900 farmers who used the mixture in 1930. They also show that pasture demonstrations, with soil amendments, were carried on in 40 counties. Many of these demonstrations were seedings of grass or

grass and clover mixtures on untreated land, or on land that had been treated in the past.

There were 982 superphosphate demonstrations reported in 46 counties; also 1,033 men in 24 counties used basic slag, and 573 men used rock phosphate in 20 counties. The number of men reported as using complete fertilizers on tobacco was 29,250 in 74 counties.

Legumes and Pastures. Soybeans continue to be grown on a large acreage for hay production thruout the State. The State used approximately 220,000 bushels of seed. The mountain counties are adopting the crop to as great an extent as any other area within the State. The upward trend in the acreage of soybeans for seed is shown by the harvest yields. The total production of seed for sale this year is reported at a little more than 24,000 bushels, with the prospect of a larger use in the territory producing the seed. The leading soybean varieties in the State at present are Mammoth Yellow, Virginia and Laredo.

The production of soybeans in many counties is illustrated by Trigg County, where 1,800 bushels were sown in 1931, compared with less than 100 bushels used two years ago, before extension work was active in the county.

Sweet clover sowings decreased, 43,000 acres having been reported, as compared with 64,000 a year ago. As usual, about 80 per cent of the sweet clover was sown in mixtures.

Alfalfa sowings declined in about the same proportion as sweet clover. Success with the crop continues to be demonstrated in all counties. It is being grown successfully wherever tried according to instructions in the mountain counties. Nearly every mountain county has some alfalfa making excellent growth. The price of alfalfa has been high in comparison with other farm products.

Lespedeza. The pastures of Kentucky have been for several years, and are now, more improved by the sowing of lespedeza than by any other means. The use of grass

and legume mixtures has become a common practice over more than one-half the State. This year 894 farmers are reported to have sown alfalfa mixed with clover seed, on a total of 7,937 acres, while, 1,048 farmers sowed lespedeza on bluegrass pastures, and 1,499 farmers sowed lespedeza in old pastures other than bluegrass. Korean lespedeza was grown on a more extensive scale this year than last, the sowing being limited again by the amount of seed available. County agent reports indicate 800,000 pounds of Korean seed sown, and 21,912 bushels of common lespedeza, making the greatest sowing of lespedeza seed ever known in Kentucky.

An example of the use of Korean lespedeza in the mountains, is on the farm of Dr. A. B. Hoskins in Lee County. The crop was seeded with a crop of oats early in the spring on land that previously had been limed and fertilized with a phosphate fertilizer. After the oats crop was harvested the Korean lespedeza came on, making two tons of good hay per acre on the three-acre field. The oats crop was sold for \$39.00 and the Korean lespedeza hay for \$120.00.

The ability of Korean lespedeza to make stands where other grasses and clover failed, was demonstrated in 1931 in only a little less degree than during the extreme drouth of 1930. Hundreds of men again found their Korean seedings survive the poor spring and summer condition, making good growth in the late summer, and plenty of seed for volunteer stands next year. In county agent counties, 8,488 farmers are reported to have sown seed. The greater portion of the lespedeza was sowed in mixtures for pasture production. However, more hay was harvested from Korean lespedeza this year than ever before. Thirty men in Carter County obtained average yields of a ton and a half per acre. Four men in Boone County harvested two tons of cured hay per acre on upland. Several measured acres in Union County produced more than three tons of baled hay per acre.

Seed production for home use was attempted by about three times as many men as produced seed for the market. Yields ranged from 20 to 30 pounds to as high as 1,000 pounds per acre. Leading counties in seed production are Union, Henderson, Todd, Logan, Shelby, Christian and Warren. It has been clearly shown that as the price of seed drops to the cost of production, the producer who owns his own thresher, and has experience in handling the crop, as well as experience in handling the cleaning machinery, is more likely to make Korean seed a cash crop. The actual expense of harvesting, threshing and cleaning has exceeded the price offered, in some cases, this year.

Growers with seed for sale are handling it thru various organizations in Union, Henderson, Christian, Todd, Logan, Shelby and Warren Counties. Approximately one-half of the Korean seed produced in the State this year was inspected in the field and is in the process of being cleaned for final certification. The Kentucky Seed Improvement Association has been responsible for having seed cleaned to a high standard. More than 30 custom cleaners are now operated in the State, where three years ago, there were less than five. Were it not for the standard of 98 per cent purity demanded by this organization, most of these operators of cleaning machinery would still be marketing seed of no more than 90 or 95 per cent purity.

Tobacco. One hundred and forty-nine curing demonstrations were conducted in Calloway County and the work was started in ten other Western Kentucky counties. These demonstrations, together with those of preceding years, indicate very clearly the value of careful, systematic firing. From reports to date those who followed good firing practices produced a desirable market tobacco which was two to three times as valuable as poorly fired tobacco.

Demonstrations in sorting tobacco are growing in importance and popularity. Two hundred and fourteen demonstrations were given in 46 counties with a total attend-

ance of 5,345 farmers. Instructions were given in grading and sorting each type of tobacco produced in the State.

Strains of Burley tobacco highly resistant to root-rot have been developed by the Experiment Station, and during the past two years these strains have been grown by



Tobacco on land where three consecutive tobacco crops had been grown. Note that the white twist-bud, left, is a failure. The No. 5, right, a variety developed at the Kentucky Experiment Station, made a good crop of high quality. Scott County.

farmers thruout the Burley area. Reports from farmers indicate that this tobacco is the equal of the leading varieties in weight, quality and maturity, and is much more resistant to the black root-rot organism.

Seed Improvement and Weed Control. The annual losses in Kentucky because of weeds are very heavy. Weeds increase cost of production, reduce yields and lower the quality of crops. Some weed seeds remain in the soil for many years awaiting conditions favorable for their growth,

Weeds detract from the appearance of farms and so reduce their selling possibilities. Certain weeds are poisonous to stock and others impair the flavor and quality of dairy products.

Our most harmful weeds are not native to Kentucky but were introduced from other countries and other states. The chief means of introduction is in agricultural seed. Low-grade seed sells for less than pure seed, and for this reason appeals to the farmer as a means of economy. Such seed, however, contains larger percentages of weed seeds and its use is sure to do serious harm to the fields in which it is sown.

The purpose of the work in Improved Seed Production and Weed Control is to call attention to the importance of using good seed and the harmfulness of weeds, to indicate means by which the seed situation may be improved, and to advocate farm practices by which weeds may be eradicated or controlled.

Twenty-two meetings were held for the study of weeds. The field agent went to these places several hours before the meetings were called and collected a number of the more common weeds growing there. These were discussed with reference to name, habits, harmfulness, means of introduction and methods of control. Eight schools were conducted to study seeds. A number of samples of good and bad seeds were shown; also weed seeds and other impurities. The importance of having seed analyses made was illustrated. An exhibit showing the importance of using good seed was displayed at the State Fair.

Considerable attention was given this year to the control of dodder. The unusual prevalence of this pest in lespedeza fields caused much alarm in some counties, and many demands were made for help in its control. One hundred and seventy-two fields were inspected and methods of eradication were studied with special reference to their adaptability to use in extension work.

Approximately 2,000 farmers were reached directly in

meetings, conferences and interviews. Increased interest in this work is shown by the larger number of inquiries from farmers, 50 percent increase in number of seed samples sent for analysis, 6 per cent increase in quality of seed considered for use by farmers and a more receptive attitude by all concerned.

AGRICULTURAL ENGINEERING

This work included drainage, terracing, farm buildings and sanitation.

Drainage. There were 341 drainage demonstrations established covering 5,000 acres of land. The ultimate State goal in drainage work is summarized as follows:

1. The adoption of a State-wide practice of laying tile according to engineering methods.
2. A general adoption of the practice of maintaining drainage channels by giving more attention to the banks of streams and open ditches.
3. The drainage of spots in tillable fields that are wet, owing to seepage water or surface water.

The following examples are given for illustration. Mr. C. E. Martin, a large landowner of Muhlenberg County, whose farms are in the fertile Green River bottoms, was given help in laying out a drainage system for 125 acres. The local method of planning the system called for two main tile lines with comparatively short laterals. With the help of the College, a system was adopted that consisted of one main with long lateral lines. The saving in cost of installation amounted to \$1,000.

In the fall of 1928, a cooperative drainage project was established on Elk Creek in Hopkins County. Twenty-two landowners provided a fund of \$5,400 with which to dredge 3.5 miles of channel. The landowners cleared a right of way 50 feet wide where the ditch ran thru their property. The amount of money raised was sufficient to provide a ditch that would relieve the flood conditions during normal rains but not large enough to provide ample drainage

during maximum flood conditions. Owing to the character of the soil and ditch grade, the channel was dug so that erosion would enlarge it. The plan has worked perfectly despite the small rainfall of the past two years. Where the ditch after completion was nine feet at the top, five feet wide at the bottom and five feet deep, it is now 16 feet wide at the top, eight feet wide at the bottom, and seven feet deep, having about two and a half times the sectional area of the original ditch.

Extension workers designed and assisted in carrying out a cooperative drainage project in a deserted channel of Elkhorn Creek in Franklin County. This project was completed in 1930. Dynamite was used to clean out and straighten the open ditch that ran thru four farms, and to construct a mile of new ditch on the fifth farm. The water damaging the land came from the adjoining hills and an enormous spring at the head of the ditch. About 100 acres of land below the spring had become swamp land. All the five landowners have profited by the cooperative enterprise, but the value of the project to one owner is of special interest. The cost of constructing the mile of new ditch thru her property was \$4.25 per acre. About 50 acres of the 100 acres reclaimed were planted to corn this year and the rest to tobacco and hay crops. The corn yielded 75 bushels per acre. Valued at \$0.40 per bushel, it would pay the entire expenditure for drainage after the cost of growing the crop is deducted and will leave a balance of \$200. The crops of tobacco and hay are excellent. This land, once well drained and very fertile, had become waste land because of silting of the channel and because the entire length of ditch was not put in good condition at the same time.

Much drainage was done in the mountainous counties of Kentucky where a large percentage of the most fertile level farm land is wet. A survey of Knox County showed that the average farm of that county has only 14 acres of land not too steep to be plowed with a two-horse outfit and

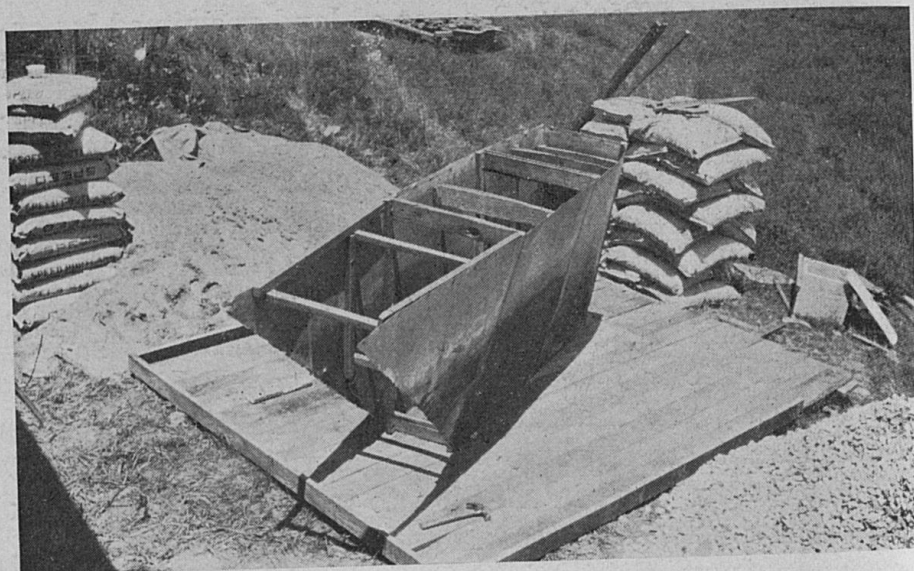
that four of the 14 acres are too wet for any other purpose but pasturage. Drainage was started in this county in 1929. Since then 98 farms have improved the drainage conditions of 3,579 acres. This year 11 farmers tile drained 112 acres and 54 farmers improved drainage conditions on 2,592 acres by clearing 18 miles of creek banks of brush and trees and removing dams from the creek beds. Yields on the drained land show that five fields on drained land that were limed and fertilized with phosphate fertilizer produced an average of 61 bushels of corn per acre. Three demonstrations covering 18 acres of land reclaimed by enlarging creek beds gave an average of 57 bushels of corn per acre. Nine demonstrations on 65 acres of drained land produced an average of three tons of soybean hay per acre. There are 4,000 acres of land in the county that can be reclaimed by providing proper surface drainage.

Terracing. Soil erosion is a serious menace to profitable agriculture in practically every county in Kentucky. It has not only depleted the fertility of rolling and steep land, but it also has contributed to the poor drainage conditions existing in drainage channels. Since most of the land needing terracing is low in fertility, soil improvement practices are required in addition to terracing. Thirty-six counties in the State carried on soil erosion work this year. One hundred and eighty-eight farmers adopted soil erosion practices and terraced over 3,000 acres of land.

Mr. R. E. Duncan, Short Creek, Grayson County, began terracing his badly eroded farm in the spring of 1930. The results were so satisfactory that he has continued the work and now has all but 20 acres of his 90 tillable acres terraced. By January he will have his entire farm terraced.

One leader training meeting and eight method demonstrations were conducted this year in Calloway County at which ten local leaders were prepared for promoting the work. These leaders terraced 21 fields in the county this year.

The county agent in Christian County has laid a foundation for conducting his terracing work thru local leaders by working with the leaders on fields terraced on their farms. The fields are terraced by the leaders with the assistance of the county agent. The entire community takes part in the work. After terracing, the fields low in fertility are sown to grass and legumes. One such field was subjected to two very heavy rains shortly after being terraced but held successfully.



Part of an old steel tank used as the inside form for a concrete sheep dipping vat on farm of Henry Besuden, near Winchester. Note mixing platform and 1 cubic foot measuring box.

Farm Buildings. The chief problem which has confronted extension workers in many communities in conducting farm building extension work is one of coordinating the plan service of the lumber dealers, the carpenters, contractors, with that of the University of Kentucky so that each agency will make the same recommendations to farmers. This plan of service should be based on the best known practices as adapted to Kentucky conditions and recommendations should emphasize the importance of building from carefully prepared plans.

The adoption by several cities of a milk ordinance to regulate the sanitary production and sale of milk and milk products raised many problems in connection with the remodeling, building and equipping of dairy barns and milk houses. The recent increase in the number of farmers growing Burley tobacco in many counties outside of the Bluegrass region, brought up the problem of designing a small tobacco barn suitable for curing from one and one-half to three acres of tobacco. The campaign put on this year for raising food at home, created a demand for plans and information regarding the storage of fruit and vegetables. A number of problems also arose in connection with the heating and ventilation of large brooder houses for the raising broilers by the battery brooder method.

The ultimate State goal is to have all farm buildings erected, whether new or remodeled, from carefully prepared plans which meet the individual requirements of the farm and which are especially adapted to Kentucky conditions. Eleven farm building schools were held in various parts of the State for the purpose of familiarizing the lumber dealers, carpenters, other building mechanics and farmers, with the recommended practices which have been developed at the University of Kentucky and similar institutions, and by other dependable agencies. By this method it is believed that local builders will function as leaders in this work and that all agencies will be in position to make the same recommendations and thus erect adequate buildings. A total enrollment for the 11 schools was 310.

Dairy Buildings. Because of model milk ordinances many requests were received for plans of dairy barns and milk houses which would meet the requirements. Plans for inexpensive milking barns have been prepared and distributed. There has been much demand for a two-room milk house to meet the requirements of the Louisville milk ordinance. A house of this type has been designed. Plans are

now available for both frame and cement block construction, with an itemized bill of materials which includes the necessary plumbing. A standard size milk cooling tank is recommended so that prepared package insulation may be used.

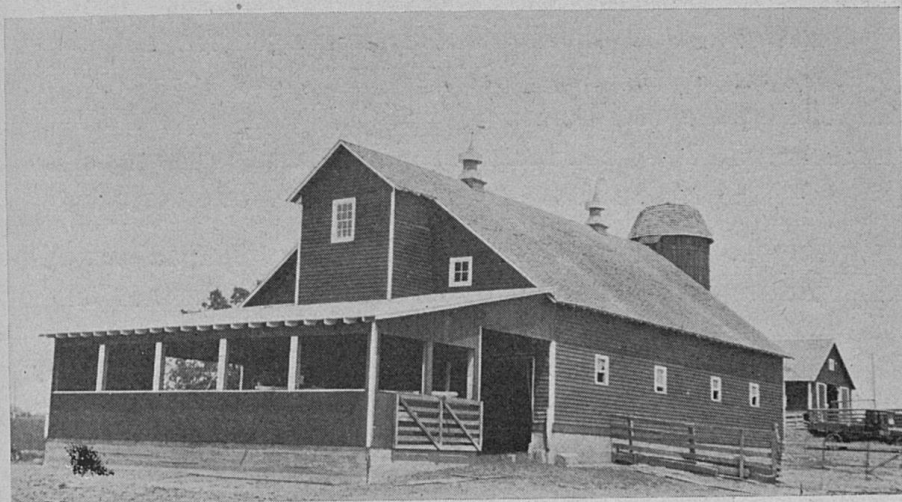
During the year 12 sets of new plans were prepared and six sets were revised, making available for distribution 144 sets of various kinds of farm building and equipment plans. This year 443 sets of plans were sent on request, to 79 counties.

Evidence that the farm building program is of real service to farmers is shown by 1,001 farms on which buildings other than dwellings were constructed or remodeled this year according to plans furnished and that the number of buildings involved was 1,271 including 175 dairy barns, 88 hog houses, 626 poultry houses, 74 silos and 308 other buildings. In addition the agents assisted 104 families with house planning problems, and 33 new dwellings were constructed and 80 homes remodeled according to plans furnished.

Sanitation. As a basis for an effective sanitation program, preliminary surveys were made in nine counties. The surveys showed the need of a more general adoption of practices for protecting sources of drinking water from sewerage contamination. Also it showed the lack of adequate water systems for homes. The value of such a survey is illustrated by the work done by the home demonstration agent in Boyd County. Surveys revealed the need in many homes of pitcher pumps, sinks and simple drainage systems. The home demonstration agent applied herself to the task of this particular home improvement and was soon able to report that 20 homes had put in pitcher pumps in the kitchen and simple drainage or sewage disposal systems according to recommendations. Also 18 new kitchen sinks and 30 drainboards were placed in kitchens.

ANIMAL HUSBANDRY

Beef Cattle. Beef cattle work undertook (1) the promotion of beef breeding herds for the production of baby beef, (2) demonstrations in proper feeding methods for beef production, including winter fattening and also the finishing of cattle on grass, (3) improvement of housing and watering conditions and encouraging the use of silos, (4) aiding in purebred cattle sales as well as fat cattle shows.



A good type of beef-cattle barn with watering troughs inside. This permits feeding under shelter and saving all manure.

Notwithstanding adverse economic conditions those who followed demonstration practices made a fair profit in the breeding and feeding of beef cattle. Special attention was given to the establishment of herds for the production of baby beef. It was found that nursing calves receiving grain on pasture returned much more profit than did nursing calves which received no grain on pasture. The demonstrations showed that it is more profitable to market beef cattle as baby beeves than as aged steers.

Aid was given in cooperative beef cattle sales in three sections of the State. These sales provided a means for

breeders to dispose of purebred stock also to obtain breeding and foundation stock.

Instructional work in the feeding, housing and management of beef cattle was conducted in movable schools.

Aid was given in formulating rations for 1,400 head of baby beeves and fat cattle exhibited at the Louisville Fat Stock Show.

Forty beef cattle meetings were held with a total attendance of 4,612 . Five hundred and nine visits were made to demonstrators and cooperators.

Better Sires Work. Extension agencies assisted in placing on farms, 549 purebred bulls, 800 purebred rams and 276 purebred boars. Since the campaign started in Kentucky in 1920 aid has been given in the placing of over 15,000 sires of the above mentioned types of livestock.

Sheep. It is now generally conceded by packer buyers and others in position to know that Kentucky has, during the past ten or eleven years, made greater improvement, both in quality of lambs produced and in purebred flocks of sheep, than has any other State. This improvement is very largely due to the aggressive extension program of the College of Agriculture. This improvement program, known as lamb standardization, has been prosecuted along the following lines: (1) purebred rams as flock headers, (2) docking and castrating, (3) parasite control, (4) better feeding and management practices, (5) accredited flocks, (6) Golden Hoof Clubs.

One field agent helped to establish 14 new purebred flocks and he also gave 72 demonstrations in the culling and classing of purebred sheep, mostly in accredited flocks, and assisted in the selection of stud rams for 34 of these flocks. Extension work with purebred flocks has led to such an improvement in quality that Kentucky breeders have developed a quality market from coast to coast, selling breeding stock in 16 different States.

Kentucky has been a leader among the native lamb

states in eliminating the bucky lamb. Ten years ago a negligible percentage of the ram lambs were castrated, whereas in the last few years, as the result of the extension program, the proportion of ewe and wether lambs has been estimated at fully 80 per cent of the offering.

One of the most important sheep management problems in Kentucky is the control of internal parasites, stomach worms in particular. In addition to the preparation and distribution of timely management hints and much correspondence on the subject, 36 parasite control demonstrations were held. The subject was treated at several group conferences of county agents and with hundreds of farmers.

Feeding and management practices were taught thru demonstration flocks, county and district meetings of sheepmen, timely news articles, 12 magazine articles, a number of radio talks and correspondence.

Swine. Much attention was given to disseminating information on the preparation and feeding of wheat to hogs. While it was not possible to keep accurate check of the total number of farmers demonstrating and adopting the suggestions, the results from a week of intensive effort in one county indicates the effectiveness of the work. During that week 53 demonstrators were enrolled and the practice spread with intensity exceeding expectation. Farmers engaging in this project report having received from 90 cents to \$1.30 per bushel for the wheat fed to hogs, when the local market price was 38 cents per bushel.

Feed records were received on 35 of the litters which were fed in the ton litter contest. The average selling price was \$120.10 and the profit \$25.21. This project not only is increasing the spread of improved feeding practice but, also is influencing an increasing number of farmers to get their hogs on the early fall market, before prices assume the normally downward trend. In one county, one ton litter feeding demonstration has caused 20 other farm-

ers to adopt the practice of getting their hogs ready for early fall market. During a period of 27 years the average decline in prices on the Chicago market from September to October was 55 cents per cwt., and from September to November was \$1.12.

According to the best estimates, 750 farmers in the State are using the plan in full, and more than twice that number are using some of the steps. Any amount of sanitation affords a measure of protection to pigs from worms and filth borne diseases. Where complete sanitation has been practiced, the records show a saving of two bushels of corn per pig, and 43 days is the time required to get pigs to marketable weight.

Home pork is an important item in the food supply of the Kentucky farm family. The extension plan of cutting and curing improved the quality and palatability and the keeping qualities of the cured cuts and other products, such as sausage. By this plan, smoked and canned sausage may be kept thruout the year, when formerly it could be had only during a few weeks of each year. The quality of the bacon is also improved. It is milder than that cured in the usual way on the farm and never gets strong. It is, therefore, more palatable for breakfast use.

Twenty-six demonstrations with an attendance of 552 have been given by one specialist, and twice that number by county agents and trained leaders. In connection with these demonstrations whenever possible, the home demonstration agent has given demonstrations on cooking and canning pork and sausage, thus hastening the adoption of practices recommended.

DAIRYING

Farmers who provided an abundance of home-grown hay and pasture and who balanced their grain rations from feeds grown on the farm and who retained in their herds only the cows capable of creditable production realized a

very fair return above the cost of feed from their dairy herds in 1931. Where money was lost, it was found that the owners retained too many poor cows, and failed to provide good home-grown hay and adequate pasture. They fed grain without attempting to balance the ration and did not give careful attention to the quality of products offered for sale.

Contacts were established with dairymen thru:

1. Dairy feeding and breeding schools
2. Dairy herd improvement associations
3. Dairy demonstration herds.
4. Junior 4-H Club projects
5. Cream quality improvement
6. Dairy "live-at-home" meetings.

Dairy, Feeding and Breeding Schools. These schools were held where similar subject matter had not been offered previously. Twenty-two schools were held with an average of 15 farmers attending. Suitable charts and outlines were furnished to six county agents who reported 596 farmers attending their community dairy feeding schools. Five breeding schools were held in sections where dairy farmers had been keeping records on their herds for several years. Breeding schools have been found over a period of years a very effective means of arousing interest in better dairying. They contribute a strong third link in a chain of "Feeding, Weeding and Breeding."

Dairy Herd Improvement Associations. Nine dairy herd improvement associations rendered valuable service to members. The following table summarizes the average production per cow in associations operating between November 1, 1930, and October 31, 1931.

In each association the average production per cow was increased over the preceding year. During the year 4,322 cows were tested in 197 herds. About one-third of the cows on test were registered and two-thirds were

grades. During the year 12 percent of the cows on test were sold as culls and 3.3 percent were sold for dairy purpose. It is significant that 17 percent of the cows were sold as culls in the association which excelled in production.

Association	Average Butter-	Average Butter-	Average Butter-
	fat production 1928-1929	fat production 1929-1930	fat production 1930-1931
Bluegrass -----	267	289	290
*Boyd			273
Dix River-----			271
Graves -----	245	255	280
Marion -----	227	263	279
Northern Kentucky	258	275	262
Ohio-Kentucky Valley		235	315
Oldham-Jefferson -----	266	273	300
Shelby-Henry -----	255	292	

*Finished first year testing November 30, 1931. Reorganized.

Registered sires were used in 93 percent of the herds tested as compared with 82 percent the previous year. Legume hay was fed in 80 percent of the herds and 84 percent received silage as compared with 72 percent and 55 percent respectively last year. Not a single herd owner was reported as feeding "yellow tag" (adulterated) feed and only nine percent fed non-legume hay. During 1931, four more sires were listed among Kentucky's growing list of proved sires, bringing the total to eleven. Following is a table summarizing 24 dam and daughter comparisons of these four sires.

	Average Butterfat Lbs.
Daughters -----	439.5
Dams -----	380.0
Gain, Daughters over Dams-----	59.5 lbs. or 15.6 percent

DAIRY DEMONSTRATION HERDS

Simple record books and other forms are furnished the herd owners in which to make the proper entries and complete the record on individual cows at no cash outlay. There

were 36 such demonstration herds in 15 counties in 1931.

4-H Dairy Project. 4-H Club boys and girls owned 1,600 heifers and cows, 305 of which were exhibited at district 4-H dairy club shows. Following the district shows 85 head of the very best individuals were shown at the State Fair. It is gratifying to see a large and increasing number of 4-H club heifers being bred by the club boys and girls. Especial emphasis was placed on obtaining heifers and cows with production records and sired by bulls with tested daughters. Thru the medium of dairy calf club tours, fitting and showing demonstrations and judging schools, much interest was aroused among club members in establishing herds of their own.

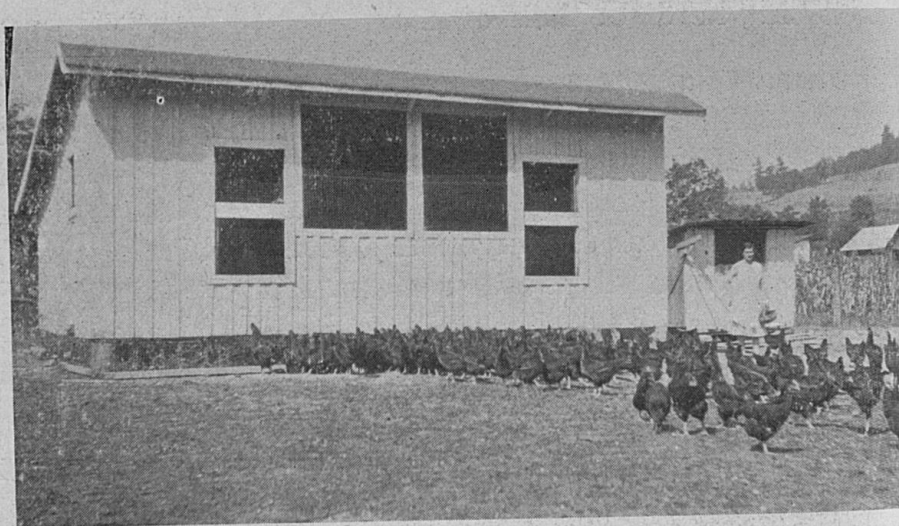
Cream Quality Improvement. The four-day plan of buying station cream has been continued in 55 counties in the State. It is the first step in improving the quality of cream sold to creameries. The plan provides for a price differential in favor of "Premium Cream" which is cream delivered at the buying station within four days of the patron's previous delivery. Cream sold at less frequent intervals is "Regular Cream." The following table shows that farmers are taking an increased interest in the advantage of the above mentioned price differential and the result is an improved quality of cream, at cream buying stations.

	Year ended Nov. 30, 1929	Year ended Nov. 30, 1930	Year ended Nov. 30, 1931
Pounds butterfat purchased-----	5,817,129	6,278,471	5,214,667
Pounds premium butterfat purchased-----	2,929,933	3,405,117	3,064,453
Percent premium butterfat purchased-----	50.4%	54.2%	58.8%
Pounds regular butterfat purchased -----	2,834,705	2,834,130	2,104,612
Percent regular butterfat purchased-----	48.7%	45.1%	40.3%
Pounds rejected butterfat-----	52,491	39,224	45,602
Percent rejected butterfat-----	.9%	.7%	.9%

Live-at-Home Dairy Program. A field agent in dairying cooperating with the Home Economics Department demonstrated approved practices and principles of making butter and cottage cheese in the farm home. Home demonstration agents and their trained foods leaders were present from 32 counties. Emphasis was placed on the efficient utilization of dairy products in the farm home.

POULTRY

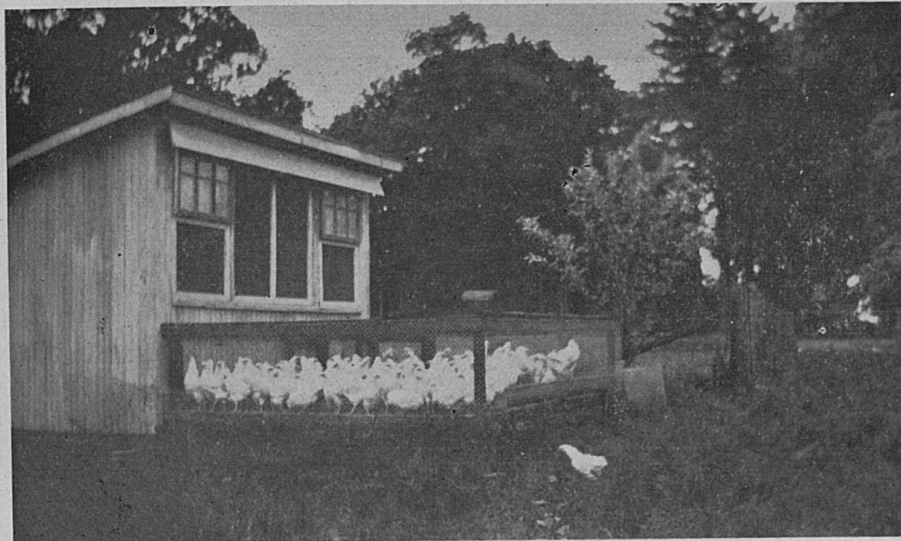
The immediate object of extension work with poultry is to develop in those sections of the State best adapted, a poultry industry not only profitable but which will be a



A demonstration flock in the Mountains. This looks like an excellent antidote for poverty. Such a flock on every mountain farm would add greatly to the earnings of the people.

major source of farm income. It has been emphasized that a flock should not only be a source of income but also a source of food for the family. That there has been a decided trend toward more efficient practices in recent years is clearly shown by the census figures for 1930. In 1929, Kentucky hens produced approximately 54 million dozen eggs as compared with 42¼ million in 1919, an increase of 28 per cent in egg production with 15 per cent fewer chickens on farms. This represents an approximate

increase from 54 eggs to 81 eggs per hen annually in the ten year period. At the same time, Kentucky farmers sold 60 per cent more live and dressed poultry, thus increasing materially two important sources of farm revenue at the same time reducing the overhead and cost of production. Each year during the past ten year period, from 100 to 500 Kentucky farmers who keep flock records have demonstrated that it is possible to make money from poultry where efficient methods are practiced, during the lean as well as the good years. One hundred and twenty-seven poultry men reported a labor income of \$1.47 per hen after



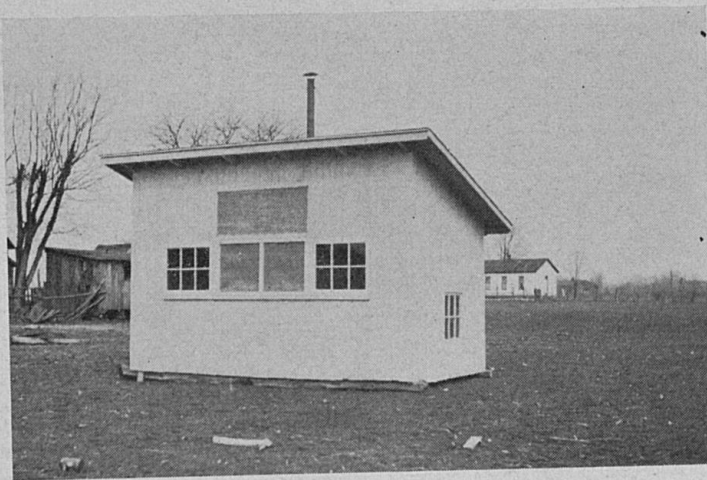
Showing the use of "a sun porch" for chicks raised in a poultry yard where the ground is infested.

feed and all other expenses were deducted, these flocks producing an average of 146 eggs per hen for the year 1931. In Trimble and Grayson Counties, 28 farmers kept brooder demonstration records and followed the "Clean Chick" program. Out of 8,689 chicks started, 90 per cent were raised, one farmer raising 243 chicks out of 250 placed in the brooder. The steps carried out by those farmers following the clean chick program are as follows: (1) Raise only chicks that are from blood-tested flocks, (2) Use

clean waste-proof equipment, (3) Brood on clean range, (4) Feed a balanced ration, (5) Follow clean management practices.

The number of persons reached at public gatherings gives an index of the far-reaching possibilities of the program.

	No. Meetings	Attendance
Poultry Schools -----	63	1,789
Result Demonstrations -----	37	2,204
General Meetings -----	37	2,950
Movable Schools -----	31	1,530
Field Meetings -----	29	1,538
Culling Demonstrations -----	24	545
Leader Training -----	17	158
Tours -----	7	283
	245	10,997



A model brooder house in Gallatin County on clean ground. This means early pullets that start laying before winter sets in.

Improvement Programs. Another indication of effectiveness is that farmers and poultrymen themselves are willing to invest their own resources in a breeding and disease eradication program as suggested and outlined by the College of Agriculture. Largely as an outgrowth of the activities of the poultry specialists, over 1,600 hatcherymen, poultrymen and farm flock owners have banded to-

gether into the Kentucky Poultry Improvement Association. This association raises annually from among its membership between \$4,000 and \$5,000 which is used in the main to finance the improvement program carried on under a memorandum of agreement with the Kentucky Experiment Station.



The extension veterinarian performing an autopsy in order to determine the cause of losses in this poultry yard.

VETERINARY SCIENCE

This work was performed mainly along four lines:

1. The prevention, control and eradication of transmissible diseases of animals.
2. Prevention, control and eradication of animal parasites.
3. Farm sanitation and herd management as related to the control, prevention and eradication of animal diseases.
4. Educational work on the importance of eradicating the Bang abortion disease.

The projects serve as a guide for discussing general

principles of dealing with animal diseases and are therefore applicable at all times and in all parts of the State. There are many disease conditions, the preventive measures for which should be outlined and put into effect from six months to a year in advance of their anticipated occurrence.

Any one of such diseases as hog cholera, Bang's disease (contagious abortion), rabies, white diarrhea, Johne's disease and parasitisms is often the principal topic of discussion and is dealt with in detail at a given meeting, in a community or section where the disease is prevalent.

While the work as a whole is carried out on a systematic basis and regularly scheduled meetings are planned in advance, usually thru the county agent, it often happens that requests come urging that the extension specialist in Veterinary Science be present at a meeting or visit a community because of the sudden appearance of an unusual condition among livestock. An effort is always made to respond to these emergency calls if the nature of the problem and the number of animals involved seem to warrant. Unusual and new conditions demand immediate attention if assistance is to be most effective. At such times livestock owners are in a mood to act and they apply corrective efforts which are directed in a way to assure success.

The loss of animals from death owing to acute disease and the loss from unthriftiness because of chronic infections, parasitic and nutritional disturbances constitute a heavy drain upon the resources of farmers. Many of the losses that occur are preventable. For many diseases there is no effective curative treatment. The work of the extension veterinarian is largely devoted to consultation and advice regarding the application of preventive measures.

Summary

Consultations with farmers and stockmen.....	719
Consultations with veterinarians.....	79
Consultations with county agents.....	99
Demonstrations of taking blood samples.....	9
Farm visits.....	280
Number counties in which demonstrations were held.....	84
Total meetings held.....	115
Total attendance at meetings.....	2,784

HORTICULTURE

The work in pomology was mainly devoted to orchard management, commercial berry production and Junior Club work. It was presented thru general meetings, thru the selection and training of local leaders and tours for inspection of demonstrations. General meetings were held each month in McCracken, Henderson and Jefferson Counties, and in the Covington section. Forty-five meetings were held in cooperation with county agents for the training of local leaders.

Orchard Management. The slogan adopted was, "Economy without Sacrifice."

Timely spray service letters were prepared in cooperation with the Department of Entomology and were sent to a mailing list of 500 growers. Field insectaries were established in Jefferson, Henderson and McCracken Counties, to aid the spray service work. The result was improvement of the grade of fruit and reduced cost of spraying.

Economy of management was attempted by the use of legume cover crops in place of clean cultivation. This resulted in a reduction in labor costs while the trees seemed to maintain good vigor.

Spraying demonstrations for fire blight control resulted in a reduction of the amount of blight and many growers plan to use these sprays next year.

The storing of apples on the farm was stressed this year as a means of disposing of the large crop. The num-

ber of cool-air storage houses constructed this year exceeded the total number in use at the beginning of 1931. A cool-air storage house was displayed at the State Fair and at the Robinson Substation Fair.

General meetings, radio talks, and an exhibit at the State Fair were used to get information to growers.



Lucretia dewberries. This is a comparatively new cash crop in McCracken County.

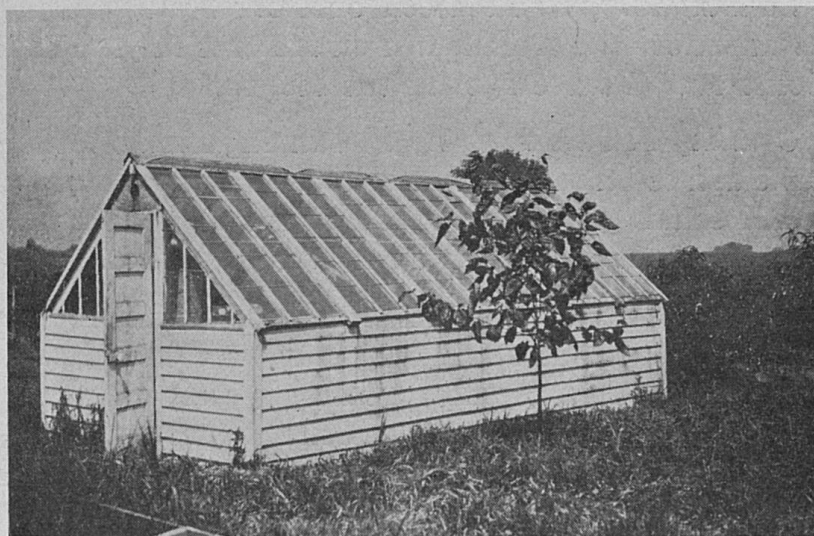
Material assistance was rendered to growers in marketing the 1931 fruit crop. Instruction was given on roadside marketing and local advertising. Many crops were sold locally at reasonable prices at a time when the terminal markets were demoralized.

The strawberry project was particularly successful. Demonstrations of the control of the crown borer, and the growing of sweet clover in the rotation were outstanding. A good crop at good prices stimulated much interest in this crop. Two new counties established sufficient acreage for organized marketing next year. The new Blakemore va-

riety of strawberries which fruited for the first time last season, created much favorable comment.

The commercial plantings of dewberries and raspberries were practically doubled this year as a result of successful demonstrations by adult growers and by boys in 4-H Clubs. The small fruits have been popular among the Junior Clubs because of the excellent returns received. Full cooperation has been given by local banks in lending money to club boys for these projects.

Truck Crops. The truck crops program dealt with the following: Potatoes, canning crops, pickle cucumbers, sweet-potatoes, commercial gardening and home gardening.



An improvised plant house made from hotbed sash, built according to suggestion and sketch of the College of Agriculture.

Potatoes. The introduction of certified seed was carried into new territory and its use was extended in the potato sections. There were 67 carloads of certified seed potatoes planted in the State. Eight counties used certified seed for the first time, and an organization of growers in Knox County was perfected for supplying the local potato markets formerly dependent on the outside sources.

The number of bushels of certified seed produced in Kentucky was 9,088, a reduction from previous years owing to the dry season.

Seed treatment demonstrations were conducted in all potato sections. The acreage of potatoes planted with treated seed reached about 3,500 acres, the largest to date.

Fertilizer demonstrations continued to show increased production in spite of the dry season. Four demonstrators of spraying increased their yields by an average of 28 per cent over unsprayed plots. The new Kentucky Snowflake potato was introduced into six counties this year. The yield from this variety was about four times that of stocks in general use in these counties.

Canning Crops. Fourteen one-acre bean demonstrations in six counties resulted in an increase in yield of 140 per cent over the average for the section.

Canning-Tomato Meetings. Canning-tomato meetings were held in seven counties. Altho the season was unfavorable for canning tomatoes, the returns to demonstrators were about three times that to the average grower.

Pickle Cucumbers. Sixteen demonstrations were started in four counties, but only four were completed, because of the failure of the contracting companies. The average returns per acre from demonstrations was \$192.18, while the average for the community was \$73.40. Improved practices in the use of fertilizers and of insect control were largely responsible for the success of the demonstrators.

Sweetpotatoes. Seed treatment and use of fertilizers were demonstrated in five counties. Emphasis has been placed on the desirability of treating seed for crops to be stored. All the warehouses in Ballard, Carlisle, Hickman and Graves Counties, representing about 225,000 bushels, stored crops from treated seed only.

Commercial Gardening. Sixteen general meetings

were held in five counties. A service sheet of timely suggestions was sent each month to August 1st, to about 600 market gardeners.

Home Gardens. Because of the drouth of 1930, which created an actual shortage of food supplies, as well as reduced income, a special project was formed to give extra emphasis to home gardens. Sixty-three meetings were held in 22 counties, with a total attendance of 1,447.

A weekly garden article was released thru the Associated Press.

Six radio talks were given over radio station WHAS.

Actual results of the home garden project could not be obtained, but reports indicated a material increase over previous years in the amount of vegetables canned.

Exhibits. A mechanical device was used to show how to grow large crops of potatoes. This device was used in an exhibit at the State Fair in Louisville and later at four county fairs.

Landscape. The extension work in landscape was started December 15, 1930, on a part-time basis. An excellent beginning was made in developing an extension program. The project was adopted as a part of the general program of work in 25 counties, in cooperation with the home demonstration work. Twenty other counties which did not adopt the work as a major project called on the specialist for 44 demonstrations on the improvement and planting of farm home grounds and school grounds. Working plans were provided and demonstrated. The work has been received with enthusiasm everywhere and several new counties have requested this work for the coming year.

The work has been prosecuted thru the training of local community leaders in all counties which have adopted the project. A brief statistical report of the work accomplished follows:

Work Thru Home Demonstration Agents

Counties reached	25
New lawns started.....	188
Old lawns improved.....	1,334
Adopted other improved practices.....	1,479
Premises cleaned up.....	2,850
Improved walks, fences or driveways.....	738

Work Thru County Agricultural Agents

Counties reached.....	20
Farm demonstrations	14
Landscape schools	27
Utopia club meetings	3

Subsistence Gardening. This work was begun July 1, 1931. It was intended to serve unemployed or partially employed persons in industrial communities and is carried on in cooperation with the President's committee on unemployment and is financed by private subscription. It was a new field without guiding precedent. It was thought necessary, therefore, first to study the needs of Kentucky's industrial communities. To this end a survey was made of the cities of Ashland, Covington, Dayton, Louisville, Newport, Owensboro and Paducah, and also of the coal fields. The information thus gained indicated:

1. That such a service could be made exceedingly useful to part-time employes who otherwise might become charity cases, but who still have self reliance, energy, available land and connection with some industrial concern.

2. That subsistence gardening is not a feasible relief measure for totally unemployed charity cases, who lack ambition, energy, land, transportation or connection with any agency whose interest in them is more permanent than that of emergency relief.

3. That Ashland, Louisville and Paducah predicted more distress because of unemployment than existing agencies seemed able adequately to handle.

4. That nearly every miner in both coal fields, except

25
188
1,334
1,479
2,850
738

strikers, has derived some income from one to three days' work per week.

5. That few miners have adequate incomes for maintenance of their families' health.

20
14
27
3

Incidental to this survey work, 1,500 families who already had started gardens were provided with service sheets, "Possibilities of the Fall Garden." To assist in salvaging cheap, surplus foods, 20,000 families were provided with service sheets, "The Home Canning of Fruits and Vegetables," and a like number with instructions upon preservation methods not requiring the purchase of containers. Thru the excellent cooperation of the Home Demonstration Department, several special food preservation demonstrations were conducted in mining camps of Johnson, Letcher and Perry Counties.

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Following the survey, effort was centered upon establishing definite cooperation with suitable agencies thru whom the various needy communities might be reached efficiently. Of the agencies and concerns personally interviewed, 70, representing about 20,000 families needing such a service, agreed to assume responsibility in arranging meetings, canvassing and signing up participating families, properly distributing seasonal service sheets, providing competition and supervision and reporting results. Concerns not yet personally interviewed, representing about 15,000 such families, have written requesting the service.

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Effort has been concentrated upon holding garden meetings in industrial communities, arranged by concerns that appeared to be in the best position to sponsor successful garden projects. In advance of the meetings, sponsors are assisted in arriving at a definite working plan.

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About 25 such meetings have been arranged. Five of these already have been held in Union, Webster and Hopkins Counties, with a total adult attendance of about 1,075 persons.

Louisville, thru The Municipal Public Welfare, Real Estate Board and Family Service Organization, plans a community garden project for creating jobs as a substitute for direct relief, the products to be distributed to existing charity cases on order from the Family Service Organization. Ashland plans a similar project thru the Real Estate Board and Federated Charities.

ENTOMOLOGY AND BOTANY

During the Spring of 1931 a spray service for fruit growers was begun in Kentucky in cooperation with the Kentucky Horticultural Society and county horticultural societies in Jefferson, Henderson and McCracken Counties, the principal centers of commercial fruit production.

Because of its central location and the volume and diversity of the fruit crop, Henderson was chosen for the principal fruit laboratory where detailed studies were made and activities of fruit pests and diseases were observed. Additional observations were made at Louisville and Paducah by local observers who forwarded their records to Henderson daily.

In each of the centers of observation the county agent's office was used daily to disseminate information to fruit growers in that county and adjacent territory having similar conditions. News letters and news articles in daily papers with rural distribution carried most of the timely information. The telephone and the radio at the University and the radio at Paducah were also used.

A smaller fruit growing region, located in the area about Franklin, while not having an observer was so located that the spray information was approximated from the Paducah and Henderson data when necessary weather adjustments were made.

News columns in Henderson papers continued from April to November setting forth the pest situation as revealed by the insectary records and field observations.

Many fruit growers subscribed for the paper during the period, expressly for the spray service. Many other papers from Paducah to Louisville copied the articles during critical periods. The response to this service was exceedingly gratifying and there is strong demand from growers for its continuation.

The army worm, sod webworm and grasshoppers were exceedingly troublesome during the months of June and July. During this period many county meetings and demonstrations were held, relative to the control of these pests. Written instructions were supplied to every county agent in the State on methods of control of these insects. The newspapers of the State were furnished with similar information. Hundreds of individual inquiries about these three pests were answered by personal call, telephone, and letters.

During the year county beekeepers' meetings were held at Owensboro, Pineville and Harlan. At all meetings there was good attendance and much enthusiasm. At Harlan, an apiary inspector was appointed who rendered a great service to the beekeepers of the county, especially by eliminating several centers of infection of American Foulbrood.

FARM ECONOMICS

There were 578 cooperators in the project on farm business analysis thru the farm accounts. Of these, 254 were keeping accounts for the first time.

Accounts for 186 farmers were closed and summarized. Each cooperator received a summary and analysis of his business for the year with comparisons with other farmers in his community keeping similar accounts. Each received a personal visit when his summary and analysis were returned and all of them declared the service to be valuable to them. The business analysis summaries included nine county or regional groups.

Farm Budgeting and Reorganization. A select group

of 35 farmers participated in this work. Each kept a record of his farming business under supervision. He was assisted in planning a definite long-time program which included the selection of crops and livestock which it appeared would give the largest net returns from the resources available. In a number of cases maps were drawn embodying plans for improving gradually the layout of the farm.

The work was confined to those farmers who are willing to carry out consistently a plan of long-time adjustment. The results are demonstrating the profitableness of a well-planned cropping system and livestock program.

A form was prepared for the convenient use of farmers in making budget calculations and copies were distributed to all county agents accompanied by a bulletin giving simple and direct instructions.

Farm Business Education. The fundamental purpose of extension work in farm management is to help farmers to understand the economic principles underlying the organization and operation of their farming business. Only by such an understanding are they able to make the largest continuous income. Pursuant to this idea outstanding farmers in ten counties were given training in fundamental economic principles underlying successful farm organization and operation. In these counties, 24 meetings were held with a total attendance of 718 farmers. As a means of maintaining contact with cooperators thruout the season, a series of seven mimeographed bulletins embodying timely discussions of economic and farm management principles were sent to them.

Twelve radio talks were given during the year, dealing with timely economic and farm management problems. Ten news letters and press articles on farm management and business problems were prepared and given statewide distribution. The farm management educational exhibit

presented at the Kentucky State Fair was later used at three county and community fairs.

Rural Life Improvement. This work consisted principally in holding rural life conferences and in advising committees in carrying out community improvement projects. In two communities where such conferences were held, they represented consecutive annual conferences. The main purpose as originally conceived was to cooperate with the people in studying community needs and devising and executing plans for improvement. The communities were scored on the basis of 1,000 points including farms, homes, community economics, business, schools, churches, health, citizenship, community spirit and recreation. The work showed definite progress. One community published an attractive pamphlet of facts pertaining to the leading events and personalities in the history of the community.

Another committee made definite progress in bringing about the beautification of home grounds and in the installation of home conveniences and increasing the reading of good books and magazines. An achievement of the committee on churches was the organization of a Union Christian Endeavor Society and work on the beautification of church grounds. Churches are making progress in providing adequate parking space and the building of additional Sunday School rooms.

As a result of the suggestions of extension workers in one of these communities a community building association was organized. A commodious gymnasium-auditorium was completed in the fall of 1931. This also serves as a community center for recreation and other purposes.

In cooperation with county agents in four counties, Boyle, Boone, Kenton and Fayette, community leader conferences were held, the leaders being the officers and committee chairmen of the various local community organizations including the homemakers' club, the farmers' organization, the parent-teachers association, fraternal organi-

zations and churches. The chief purpose of these conferences was the working out of plans for coordinating and unifying the efforts of these organizations in a way calculated to promote a long-time program of community development.

In Boyle County a council has been organized for the purpose of providing a clearing house in which the leaders in the various organizations come together to work out a well-rounded program for the development of all the interests of the community. This organization is helping the county agent to set up a program to fit all the needs of the community. It furnishes a rallying point and a fostering group to encourage present community projects and to ascertain new projects which may be needed.

MARKETS AND RURAL FINANCE

Reduced consumption of most of the major products of the State and larger supplies of many crops resulted in low prices and an unprecedented demand from farmers for information relating to markets. Plans for cooperative marketing of farm products received chief attention from the extension specialists of this Department. Approximately 150 meetings were held with farmers and farm leaders in the interest of cooperative marketing. At these meetings, attended by more than 6,500 persons, marketing specialists discussed the possibilities and limitations of cooperation, plans for cooperative organization and other phases of cooperative marketing. Producers of tobacco, dairy products, strawberries, livestock, wool, orchard grass seed and lespedeza seed composed the principal commodity groups affected. Partly as a result of these efforts, there were perfected four tobacco associations, three cooperatives to market grass seeds, and two cooperative strawberry marketing associations.

Marketing schools were held for agricultural leaders in seven counties. This represents a new development in the

Extension Service of the College. The good attendance and the interest shown by farmers was sufficiently encouraging to make this a permanent feature of the extension program. Each school comprised a series of four meetings at which were discussed the history of cooperative marketing, lessons to be learned from cooperation, relationships between production, consumption and price and local problems in marketing.

Community grading demonstrations for potato and fruit growers, in cooperation with commodity specialists, analysis of business of strawberry marketing associations, and several community surveys to determine the possibilities of improving local market conditions represent some of the other activities designed to assist farmers in this period of low prices and congested markets.

Agricultural Outlook. In view of the great need for information to enable farmers to adjust their production to changing market conditions, a special effort was made to prepare a comprehensive statement of the outlook for Kentucky agriculture. The press, radio and other means at the disposal of the University were utilized to disseminate the information thus prepared. Sixty-eight county agents and 60 agricultural high school instructors cooperated with extension specialists in taking the statement of outlook to farmers and in aiding them to make desirable farming adjustments. A summary of the market situation for the principal agricultural products of the State was also published monthly.

Tobacco Marketing. Greater interest than in any recent year was shown by farmers in preparing tobacco properly for market. Two hundred and fourteen sorting and grading demonstrations were attended by 5,350 farmers in 46 counties. Many requests could not be met because of lack of time available to specialists for additional demonstrations. For the first time instruction was given in grading tobacco of each type grown in Kentucky.

Tobacco Market Information. Radiocasts of tobacco prices and market conditions on the Lexington market were continued during the Burley marketing season. Many favorable comments from farmers and others interested in tobacco marketing indicate the value of the service. Reports were broadcast daily instead of thrice weekly as in the previous year.

PUBLICATIONS ISSUED DURING THE YEAR 1931

- Circular No. 77, Revised, Management of Tobacco Plant Beds.
 Circular No. 84, Revised, Sow and Litter Project.
 Circular No. 98, Revised, Small-Fruit Project.
 Circular No. 106, Revised, Baby Beef Project.
 Circular No. 107, Revised, Housing Farm Poultry.
 Circular No. 131, Revised, Septic Tanks for Sewage Disposal.
 Circular No. 186, Revised, Feeding for Egg Production.
 Circular No. 187, Revised, Bound Buttonholes.
 Circular No. 193, Revised, Pig Project.
 Circular No. 220, Revised, Canning.
 Circular No. 222, Revised, Garden Project.
 Circular No. 225, Revised, Food for the Pre-School Child.
 Circular No. 231, Revised, One Dish Meals.
 Circular No. 242, Practices in Seeding Meadows and Pasture Crops.
 Circular No. 243, Vegetable Gardening.
 Circular No. 244, Chicken Pox.
 Circular No. 245, Annual Report for the Year ended December 31, 1930.
 Circular No. 246, The Hydraulic Ram.
 Circular No. 247, Burning Limestone for Agricultural Use.
 Circular No. 248, The Renovation of Millinery.
 Circular No. 249, Producing Milk of Good Quality.
 Circular No. 250, Dairy Project, Junior 4-H Clubs.
 Circular No. 251, Variation in the Butterfat Content of Milk and Cream.
 Circular No. 252, Clothing Unit I, The 4-H Club Girl's Home Costume.
 Circular No. 253, Clothing Unit II, The 4-H Club Girl's School Costume.
 Folder, Has Your County a Home Demonstration Agent?

EXTENSION WORKERS

January 1st to December 31st, 1931

ADMINISTRATION

Thomas P. Cooper, Dean and Director
T. R. Bryant, Asst. Director
D. H. Peak, Business Agent
S. K. Slaughter, Secretary

AGRONOMY

George Roberts, Head of Department
Ralph Kenny, Field Agent in Crops
S. C. Jones, Field Agent in Soils
E. C. Vaughn, Field Agent in Improved Seed Production
Russell Hunt, Field Agent in Tobacco

AGRICULTURAL ENGINEERING

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

ANIMAL HUSBANDRY

E. S. Good, Head of Department
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)

CLOTHING

†Isabelle Story, Field Agent in Clothing
Edith Lacy, Field Agent in Home Economics
*Mary Purcell, Field Agent in Clothing

DAIRY

J. O. Barkman, Field Agent in Dairying
Ted S. Besh, Field Agent in Dairying
Jesse Collins, Field Agent in Dairying

FARM MANAGEMENT

*R. E. Proctor, Field Agent in Farm Management
†Z. L. Galloway, Field Agent in Farm Management
*John H. Bondurant, Field Agent in Farm Management

*Appointed during the year.

†Resigned during the year.

FOODS

Florence Imlay, Field Agent in Foods

HOME MANAGEMENT

Ida Hagman, Field Agent in Home Economics

HORTICULTURE

W. W. Magill, Field Agent in Horticulture (Orcharding)

J. S. Gardner, Field Agent in Horticulture (Truck Crop)

N. R. Elliott, Field Agent in Horticulture (Landscape)

JUNIOR CLUBS

J. W. Whitehouse, State Leader of Junior Club Work

J. M. Feltner, Field Agent in Junior Club Work

M. S. Garside, Field Agent in Junior Club Work

Anita Burnam, Field Agent in Junior Club Work

G. J. McKenney, Field Agent in Junior Club Work

E. E. Fish, Field Agent in Junior Club Work

Carl W. Jones, Field Agent in Junior Club Work

MARKETS

L. A. Vennes, Field Agent in Markets

E. A. Johnson, Field Agent in Markets

MOVABLE SCHOOLS

L. C. Brewer, Asst. in Short Courses and Exhibits

PUBLIC INFORMATION

C. A. Lewis, Editor

POULTRY

J. H. Martin, Field Agent in Poultry

J. E. Humphrey, Field Agent in Poultry

C. E. Harris, Field Agent in Poultry

Stanley Caton, Field Agent in Poultry

RURAL SOCIOLOGY

W. D. Nicholls, Head of Department

VETERINARY SCIENCE

T. P. Polk, Field Agent in Veterinary Science

COUNTY AGENT WORK

C. A. Mahan, State Agent

I. C. Graddy, Assistant State Agent

E. J. Kilpatrick, Assistant State Agent

H. F. Link, Assistant State Agent

*Appointed during the year.

†Resigned during the year.

W. C. Wilson, Assistant State Agent
A. C. Burnette, Agent in Charge of Negro Work
S. W. Anderson, County Agent, Jefferson County
W. J. Ashbrook, County Agent, Butler County
J. H. Atkerson, County Agent, Allen County
John C. Bach, County Agent, Magoffin County
*H. A. Berge, County Agent, Gallatin County
†D. S. Bishop, County Agent, Adair County
C. O. Bondurant, County Agent, Owen County
Stuart Brabant, County Agent, Todd County
W. L. Browning, County Agent, Powell County
H. C. Brown, Asst. County Agent, Fulton County
John C. Brown, County Agent, Warren County
C. V. Bryan, County Agent, Taylor County
H. B. Cravens, County Agent, Breathitt County
Carl B. Day, County Agent, Martin County
C. O. Dickey, County Agent, Calloway County
R. S. Dunn, County Agent, Spencer County
†J. M. Dyer, County Agent, Henderson County
†H. A. Edge, County Agent, Hickman and Carlisle Counties
C. B. Elston, County Agent, Nelson County
F. C. Ewen, County Agent, Laurel County
Robt. T. Faulkner, County Agent, Johnson County
John H. Finch (Colored), County Agent, Warren County
B. W. Fortenbery, County Agent, Pike County
T. E. Ford, County Agent, Hardin County
H. R. Forkner, County Agent, Boone County
C. E. Gabbard, County Agent, Morgan County
H. K. Gayle, County Agent, Union County
C. L. Goff, County Agent, Rowan County
M. F. Goff, County Agent, Pulaski County
J. F. Graham, County Agent, Caldwell County
D. S. Green, County Agent, Leslie County
†R. M. Greene, County Agent, Mason County
Robt. T. Harrison, County Agent, Harlan County
H. J. Hayes, County Agent, Wayne County
R. M. Heath, County Agent, Franklin County
C. L. Hill, County Agent, Logan County
*J. W. Holland, County Agent, Shelby County
Ray C. Hopper, County Agent, Meade County
J. O. Horning, County Agent, Barren County

*Appointed during the year.

†Resigned during the year.

Wm. B. Howell, County Agent, Oldham County
 Joe Hurt, County Agent, Boyd County
 S. L. Isbell, County Agent, Floyd County
 H. R. Jackson, County Agent, Crittenden County
 Wm. C. Johnstone, County Agent, McCracken County
 †S. J. Jones, County Agent, Larue County
 T. H. Jones, County Agent, Lee County
 G. H. Karnes, County Agent, Monroe County
 R. H. King, County Agent, Carter County
 H. A. Laine (Colored), County Agent, Jessamine County
 Orem LaMaster, County Agent, Trimble County
 E. E. Lambert, County Agent, Menifee County
 Harry B. Lane, Asst. County Agent, Jefferson County
 †Fred Lawson, County Agent, Floyd County
 †Aaron Lee, County Agent, McCreary County
 R. H. Lickert, County Agent, Fleming County
 H. S. Long, County Agent, Clark County
 J. S. Loyd, County Agent, Knox County
 J. E. McClure, County Agent, Daviess County
 R. B. McClure, County Agent, Garrard County
 Floyd McDaniel, County Agent, Montgomery County
 R. J. Matson, County Agent, Nicholas County
 †Earl Mayhew, County Agent, Knox County
 J. W. Michael, County Agent, Knott County
 C. E. Miller, County Agent, Boyle County
 J. L. Miller, County Agent, Madison County
 Thos. W. Morgan, County Agent, Trigg County
 M. P. Nichols, County Agent, Ohio County
 J. Ed. Parker, County Agent, Fayette County
 John E. Parsons, County Agent, Lawrence County
 H. S. Patterson, County Agent, Grayson County
 S. A. Porter, County Agent, Campbell County
 †D. B. Redman, County Agent, Greenup County
 W. R. Reynolds, County Agent, Jackson County
 Edgar Rice, County Agent, Elliott County
 Harry D. Rice, County Agent, Henry County
 †R. R. Robbins, County Agent, Perry County
 G. C. Routt, County Agent, Graves County
 M. H. Sasser, County Agent, Casey County
 *Walter C. Scott, Asst. County Agent, Pulaski County
 C. C. Shade, County Agent, Jessamine County

†Resigned during the year.

*Appointed during the year.

E. R. Sparks, County Agent, Clay County
Robt. F. Spence, County Agent, Madison County
Runyon Story (Colored), County Agent, Christian County
J. E. Summers, County Agent, Marion County
W. D. Sutton, County Agent, Hopkins County
Joe Thompson, County Agent, Bath County
H. H. Thompson, County Agent, Harrison County
E. P. Tichenor, County Agent, Marshall County
R. V. Trospen, County Agent, Bell County
C. M. Wade, County Agent, Scott County
P. R. Watlington, County Agent, Bourbon County
Clyde Watts, County Agent, Carroll County
O. R. Wheeler, County Agent, Whitley County
H. W. Whittenburg, County Agent, Simpson County
C. A. Wicklund, County Agent, Kenton County
W. E. Wiedeberg, County Agent, Christian County
G. H. Williams, County Agent, Letcher County
*J. B. Williams, County Agent, Edmonson County
J. E. Wilson, County Agent, Grant County
†Ralph W. Woodfin, County Agent, Wolfe County
Troll Young, County Agent, Washington County

HOME DEMONSTRATION WORK

Myrtle Weldon, State Leader Home Demonstration Agents
Lulie Logan, Asst. State Leader Home Demonstration Agents
Zelma Monroe, Asst. State Leader Home Demonstration Agents
Christine Blakeman, Asst. Home Demonstration Agent
Bernice Bonar Bottorff, Home Demonstration Agent, Oldham County
*Zilpha F. Bruce, Home Demonstration Agent, Warren County
Zelma Byerly, Home Demonstration Agent, Kenton County
*Mary Clopton, Home Demonstration Agent, Breathitt County
Florence Cobb, Home Demonstration Agent, Graves County
Anna Culton, Asst. Home Demonstration Agent, McCracken County
Louise M. Craig, Home Demonstration Agent, Hickman County
Dora M. Duncan, Home Demonstration Agent, Hopkins County
Marie Elmore Fortenbery, Home Demonstration Agent, Pike County
*Ruth Etheridge, Home Demonstration Agent, Bell County
Hazel Graves, Home Demonstration Agent, Madison County
Jennie C. Grubbs, Home Demonstration Agent, Boyle County
Mildred Hall, Home Demonstration Agent, Leslie County

†Resigned during the year.

*Appointed during the year.

*Pearl Haak, Home Demonstration Agent, Henderson County
 Alda Henning, Home Demonstration Agent, Fulton County
 †Virginia Howard, Home Demonstration Agent, Garrard County
 *May Hutchinson, Home Demonstration Agent, Garrard County
 Lois Husebo, Home Demonstration Agent, Boyle County
 Miriam Jay, Home Demonstration Agent, Ohio County
 Catherine T. Johnson, Home Demonstration Agent, Jefferson County
 †Mary Kate Ledbetter, Home Demonstration Agent, Madison and Rock-
 castle Counties
 Dicksie Lee Lewis, Home Demonstration Agent, Union County
 Mabel McKinsey, Home Demonstration Agent, Ballard County
 M. Alma Moore, Home Demonstration Agent, Muhlenberg County
 Roxie C. Perkins, Home Demonstration Agent, Harlan County
 Irene Piedalue, Home Demonstration Agent, Clark County
 Elizabeth A. Porter, Home Demonstration Agent, Campbell County
 Frances Stallard, Home Demonstration Agent, Madison County
 Ritchie Stevenson, Home Demonstration Agent, Hardin County
 Dorothy Threlkeld, Home Demonstration Agent, McLean County
 †Kate B. Walker, Home Demonstration Agent, Perry County
 Helen M. White, Home Demonstration Agent, Daviess County
 Frances Wiese, Home Demonstration Agent, Christian County
 Sadie Wilgus, Home Demonstration Agent, Calloway County

*Appointed during the year.

†Resigned during the year.

RECEIPTS AND DISBURSEMENTS

For the Fiscal Year ended June 30, 1931

RECEIPTS

Federal Smith-Lever and Supplementary	-----	\$206,883.86
Federal Capper-Ketcham	-----	37,291.95
Additional Cooperative	-----	34,000.00
State Smith-Lever and State Capper-Ketcham	-----	159,533.25
		\$437,709.06

DISBURSEMENTS

PROJECTS	FEDERAL FUNDS			STATE FUNDS
	Federal Smith-Lever and Federal Supplementary	Capper-Ketcham	Additional Cooperative	State Smith-Lever and Capper-Ketcham
Administration	14,465.43			10,715.48
Publications	4,718.08			742.50
County Agent Work	114,204.48	14,587.93	19,855.00	40,607.85
Home Demonstration Work	19,204.29	22,704.02	7,737.78	13,609.40
Clothing	2,338.70			5,041.66
Foods	1,441.52			2,750.00
Movable Schools	2,282.91			4,318.33
Junior Clubs	12,461.50			22,647.06
Agronomy	4,788.58		2,056.40	9,468.33
Dairying	3,416.33		1,000.00	4,191.66
Animal Husbandry	4,065.18			10,871.66
Markets	2,708.98		1,106.56	3,072.69
Farm Management	2,297.76		2,066.66	3,596.67
Poultry	3,778.28			8,249.99
Horticulture	4,218.97			7,124.99
Veterinary Science	4,404.68			
Rural Engineering	2,076.11		46.45	5,356.65
Publicity	968.93			3,868.33
Farm and Home Week	883.91			
Home Management	1,660.31			2,475.00
Rural Sociology	250.51			825.00
Entomology	249.32		131.15	
	206,883.86	37,291.95	34,000.00	159,533.25

1910

THE STATE OF TEXAS
COUNTY OF DALLAS

Know all men by these presents

that _____

of the County of _____

State of Texas

do hereby certify that _____

is the true and correct _____
