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History of Cooperative Extension Work in Michigan 1914-1939
Michigan State University Extension Service

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History of
**COOPERATIVE
EXTENSION WORK**
In MICHIGAN

1914 -- 1939

MICHIGAN STATE COLLEGE :: EXTENSION DIVISION

EAST LANSING



Cooperative Extension Work in Agriculture and Home Economics, Extension Service, Michigan State College and the U. S. Department of Agriculture Cooperating.

HISTORY OF COOPERATIVE EXTENSION
WORK IN MICHIGAN - 1914-1939



History of
COOPERATIVE EXTENSION
WORK in MICHIGAN
1914 - 1939



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HISTORY OF COOPERATIVE EXTENSION WORK IN MICHIGAN—1914-1939

INTRODUCTION

Pioneering, even today.

In a quarter-century of Extension Service in agriculture and home economics administered through Michigan State College, there still is need to hark back to the year 1849, for the founding of a Michigan society and subsequently America's first agricultural college had purposes akin to purposes today.

State senators and state representatives in that year organized the Michigan Agricultural Society "to promote the improvement of agriculture and its kindred arts throughout the State of Michigan." This society sponsored formation of the State College for instruction in agriculture.

Thus the College, chartered in 1855, came into being through a legislature made up largely of farmers. It was their desire to aid Michigan agriculture and individual farmers in their struggle to overcome the handicaps and hardships of pioneer conditions.

Conditions have changed. Livestock has been improved; adapted varieties of grains and forage crops have been widely disseminated; methods of disease and insect control have been perfected; great advancements have been made in farm buildings and machinery; farm management has become an established science.

But new problems arise. Those which confront the farmer of today are no less trying than those faced by the hardy pioneer. Erosion control, marketing, credit, production adjustment and tenantry are reminders that there is still much work to be done. Results in the past quarter-century, marked by the beginning officially of the Extension Service in 1914 in Michigan and other states through Federal-State cooperation, reveal the how and why of today's agricultural industry. They give some insight also of the goal to which farming in this state is headed.

6,758,500 BULLETINS DISTRIBUTED

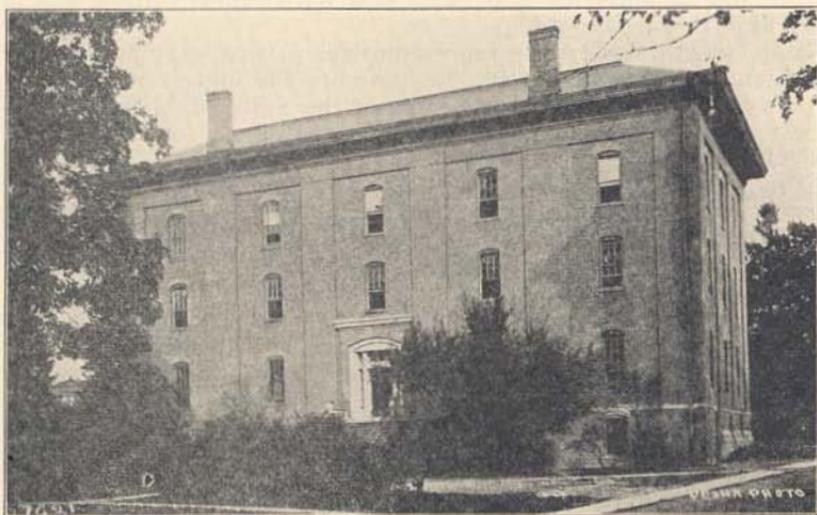
Since early in 1916 when the first extension and 4-H club bulletins were prepared, printed and distributed, there has been a total of 6,758,500 copies of these extension and 4-H club bulletins. Except for those of the latest editions still being distributed, the inference is that the average Michigan farm family has had 33 bulletins from the extension service.

There's the development of the Robust bean. What has that to do with Michigan agriculture and Michigan extension work in agriculture and home economics? *

In every county in which bean production is important this one development at Michigan State College is a drama, a pocketbook fatterer, a stronghold in keeping this state the most important of all navy or white pea bean producers in the nation. The Extension Service took the development of the new bean more than 10 years ago and

told the advantages throughout the state. Better production by Robust has meant in a decade an extra return to farmers of \$38,000,000, or an average of \$3,800,000 a year. That's progress. Farmers welcome the extra cash and their families enjoy better living. Even today Robust is being succeeded rapidly by Michelite, more superior variety bred and tested and finally released by the College in 1937.

Another phase has been the state's potato production—in 1939 a 15-million dollar industry. The Extension Service has played a part in broadcasting knowledge of the best varieties, the best cultural practices and improved marketing procedure.



Old College Hall was the first building in the world to be erected for the teaching of scientific agriculture. Its site on the Michigan State College campus is marked by Beaumont Tower.

In 4-H club work and in home economics extension work there have been other proofs of how the state's agriculture is advancing. Michigan has young men and women interested in agriculture to such an extent that this state is among the leaders each year in the number who start projects and complete them. In 1938 total enrollment showed 23,841 boys' projects and 27,993 girls' projects, an actual total of about 45,000 boys and girls in 51,834 projects. There was an increase in 1939 to 51,315 boys and girls enrolled, and in 1940 there were several thousand more in a total of 69,826 projects.

With those highlights indicating practical application of extension work today, let's reserve the details of the individual project reports and scan some more of the early agricultural and the pioneering extension service history.

The Honorable H. E. Lothrop addressed the state agricultural society with a plea in 1849 that attention be paid to "sons" in the state.

He estimated that four-fifths of the children of the state intended and probably would pursue agriculture as a profession. The society's efforts brought results in the 1850 constitution which made preliminary provision for some type of agricultural college in Michigan.

Actual founding of Michigan Agricultural College was in 1855, and first instruction was in 1857.

Farmers themselves took much of the initiative in getting this new type of school started, although authors of historical material, such as Dr. W. J. Beal of the early college staff, agree that the first few decades were a severe test. At times the college was unpopular even among some of the farmers it was trying to serve.

FARMERS' INSTITUTES FOUNDED

That may not have been entirely unfortunate. In 1876 something new was tried on authority of the State Board of Agriculture, governing body of the college. Winter farmers' institutes were conducted at Allegan and Armada. As far back in time as they now are, those meetings in effect constitute the beginnings of today's system of extension work in agriculture and home economics.

In subsequent winters there were six such institutes each year, designed to serve centrally for various sections in the state.

Then in 1891 the winter's program was expanded to 16 institutes. Formal recognition that this type of work was worthwhile came in action of the state legislature in 1895, establishing an official system for farmers' institutes. Under the State Board of Agriculture and with Kenyon L. Butterfield as superintendent, the institutes of the revised system numbered 70 in as many counties, followed by a four-day state-wide roundup meeting. That roundup is what has become the modern Michigan State College Farmers' Week, attended by more thousands of farmers each year than can be claimed by any other farm and home agricultural college program in the United States.

In the third year of this more comprehensive system of institutes, special sections for women were scheduled under supervision of Mrs. Mary A. Mayo. These succeeded, too, and are considered the forerunner of today's home economics extension service in Michigan.

Other states lay claims to earlier events similar to these, but writers of Michigan historical material say that this state was the first to pass an enabling law in 1861 providing for lectures to those not students at the college, first apparently to make state appropriations for the institutes, first to establish these institutes as a permanent and regular phase of work for the college staff members.

The first person expressly employed by the college for this growing type of extension service was W. F. Raven, named in 1907 as livestock field agent. One of his first projects was the organization of purebred sire associations. This livestock improvement work was given prominence by R. S. Shaw, then dean of agriculture and later president of Michigan State College. By 1909 Raven's work was becoming so successful he was made a full-time employee in extension work.

Then in 1909, still before federal-state extension work was organized formally, the college employed field agents in the departments of horticulture and farm crops. In the latter department, more definite

structure was given this work in the formation in January 1911, of the Michigan Experiment Association, forerunner of the present-day Michigan Crop Improvement Association.

BEGINNINGS OF 4-H CLUB WORK

Muskegon and Mason counties share in another phase of this historical progress. In 1908 there were boys' corn growing associations in those two counties. Prof. J. A. Jeffery reported on these and in 1909 found they had grown to an enrollment of 350 boys. By 1912 there was a Junior Agricultural Association under the leadership of Professor Walter French of the department of agricultural education. Those steps constitute the real beginning of Boys' and Girls' 4-H Club work as Michigan knows it today.



Agricultural Hall houses administrative offices of the Agricultural Division, including those of the Extension Division.

Establishment of agricultural courses in the high schools gave great stimulus to extension activities in the regions of these schools. The teachers proved natural local leaders in requesting speakers and arranging details of meetings. Prof. Walter H. French initiated the idea of extending these meetings to four or five days and gave them the name of extension schools.

The year 1912 marked the beginning of direct cooperation between the Federal Department of Agriculture and the College in extension work. Congress made certain appropriations for "Farm Management, Field Studies and Demonstrations," to be conducted in cooperation with the various states. The plan proposed by the federal department for carrying on this work was one of direct cooperation between the counties of the state, the College and federal bureau in the employment of a man to be located permanently in a county and to be known as a county agriculturist and later called county agricultural agent.

The first of this new type of extension worker was H. G. Smith, employed in Alpena county July 1, 1912. Within one year 12 agricultural agents had been employed and Dr. Eben Mumford was appointed their leader.

The extension enterprises became more and more numerous and centered in the office of the dean of agriculture. As early as 1911 Dean Shaw made mention of the fact in his annual report that nearly all of the departments of the agricultural division had assumed the triple functions of teaching, research and extension. In 1913 these activities were grouped together for administrative purposes in the Department of College Extension.

R. J. Baldwin, who had been administrative assistant to the dean of agriculture, was appointed superintendent of agricultural extension. The function of the new department was in administration, a sort of clearing house for the entire extension movement. The extension representatives were controlled, in administration and in subject matter presented, by the college instructional department to which each belonged. All matters not directly connected with the individual department or where several departments were involved were administered by the newly created extension department.

PASSAGE OF SMITH-LEVER ACT

The development and success of the "Farm Management, Field Studies and Demonstrations," later known as "Farmers Cooperative Demonstration Work," together with the large number of extension enterprises carried on by all of the states individually led to development of a comprehensive plan. There was a need to bring all the forces engaged in this educational work into a cooperative relationship. Funds were needed for the gradual building of a staff of trained workers reaching into all of the counties of all of the states. This plan was initiated and proposed by the land grant colleges and the federal department of agriculture and other sponsors and was provided for by an Act of Congress known as the Smith-Lever Act of May 8, 1914. This act was assented to by the Michigan legislature in 1915.

While the bill was pending, Congressman Lever explained the purpose of the legislation. He pointed out the essential information that was being gathered by agricultural colleges and stressed the need for putting this information in the hands of farmers. He described the potential extension service as an agency that had been sought for half a century. He complimented the cooperation given by the press, the use of farmers' bulletins and lecture and institute work but he asserted in sponsoring the bill that farm families needed even more direct contact with state agricultural colleges.

Vigorous support by the Michigan State Grange has highlighted the history and is evident today in the progress of the Extension Service of Michigan State College.

In legislative halls and otherwise, the Grange has approved carrying information to rural families. From the report of the Master of the State Grange in 1896 one may read, "The State Board of Agriculture, from earnest desires and long experiences, are striving to make this institution meet the true wants of the farmers of the State, in supplying their sons and daughters with practical and helpful education.

"As we look back over the history of the Grange in Michigan and recall the stand it has taken for many worthy objects, there is no part of that record which adds more honor than its continual support of the Agricultural College. With this the College has been benefited also, for it was the Grange that first gave public announcement to most of the changes and innovations which have kept the College well to the front among others of its kind in the United States."

Another organization has participated in college extension history and today remains a staunch support. This is the Michigan State Farm Bureau.

There was need in the early days of local organizations within the counties to assist in financing the county agricultural agents and to help in planning and carrying out the work of this new educational movement. Almost uniformly these county organizations operated early in extension history as county farm bureaus.

In its beginning the Farm Bureau was a federation of local organizations such as farmers' clubs, granges, crops and livestock associations, county bankers' associations and the Chamber of Commerce groups.

To finance work, a small membership fee ranging from 50 cents to a dollar a year was charged by the Farm Bureau to help pay the salary of the county extension agent, pay for the services of a stenographer, and furnish the necessary office supplies and travel.

In most counties the office was in the courthouse, so that there was no expense for rent, heat or light.

These initial local developments were recognized and accepted as satisfactory by the Federal Extension office. After the World War armistice of 1918, the Farm Bureau became more aggressive during the agricultural depression that developed. Local county Farm Bureaus were federated into State Farm Bureaus and from them was formed the American Farm Bureau Federation. Within a short time the original goal of education was expanded to include political influence and commercial enterprises.

Membership fees were increased to \$10 a year and an intensive drive in 1920 put 80,000 names on the membership rolls in Michigan. Increased revenues provided more money for hiring county agricultural agents.

It soon became evident, however, that the programs of the Farm Bureau and of the Federal and State Extension Service were such that extension work could not continue to receive financial support from the Farm Bureau. By mutual agreement, the Farm Bureau financial assistance for extension work in Michigan ultimately was withdrawn. The situation within the state worked out better than in some other states because the secretary-manager of the State Farm Bureau, C. L. Brody, appointed in February 1921, had been a county agricultural agent in St. Clair county since April 1, 1915. Mr. Brody recognized the limitations imposed by the Smith-Lever law and this made it possible to continue friendly relationships and for the two services to continue cooperative financing of county agricultural agents until in the late twenties.

There was other pioneering work in Michigan. When the first official boys' and girls' club work was conducted in 1914-15, the junior

extension projects were carried into six counties by E. C. Lindemann, first State Club Leader. His work and that which followed indicated need for paid leaders wherever such a worker can be supported financially.

Another first was the appointment of Miss Pauline Raven in charge of Home Economics Extension in 1914. Canning demonstrations in summer and extension schools in winter comprised the work. First special county worker was Miss Ilene M. Baily, employed as home demonstration agent in St. Joseph county in 1915.

AGRICULTURAL ECONOMICS

Although marketing of farm products may rightfully be considered the keystone of agricultural prosperity it has only been in the past half-century that Michigan farmers have made an organized effort to influence conditions of the sale of their produce.

Farmers woke up during the depression of the nineties to find that the lag of farm prices had placed produce rates below the wholesale prices of all commodities. That realization started movements to have farmers hold produce for more satisfactory prices but the results achieved were generally unsatisfactory, and the attendant abuses of marketing processes created an active interest in the formation of cooperative associations.

ORGANIZATION OF COOPERATIVES

In 1890 one cooperative marketing association existed in the state. Aroused farmer interest in the following 30 years increased that number by 1915 to 90. Such organizations consisted of associations for cooperative marketing of grain and beans, livestock, dairy products, fruit and potatoes. But admirable as were the early individual efforts the need for a point of centralization was felt and an increasingly large number of Michigan agriculturists turned to Michigan State College and its Extension Service for aid.

Such agitation culminated in the passage of Act 91 by the 1915 legislature providing: "That the State Board of Agriculture (governing body of Michigan State College) is hereby authorized to undertake the investigation and improvement of market conditions for Michigan products and appoint such competent and experienced persons as may be necessary to carry out the intent of this act."

Entire control of the purposes of the act was placed in the hands of the board with a resultant appointment, Nov. 1, 1915, of a director of markets and the beginning of organized extension work in economics and marketing on the part of the college.

During the formative period of Michigan cooperatives, intensified efforts on the part of the Michigan Grange, Gleaners and, later, the State Farm Bureau were coupled to the help offered by the College Extension Service in the organization of active farmers' cooperative marketing associations. Main problems facing these early organizations were the excessive marketing costs reflected in the disparity between farmer and consumer prices and inability of farmers as in-

dividuals to influence marketing conditions and correct selling abuses. Entrance of the United States into the World War and the creation of the food administration added impetus to the co-op movement through dissatisfaction with policies promulgated by that agency which affected the marketing of farm products.

Woefully short-handed in personnel, the college markets department found it impossible to cover thoroughly the field during those early years of co-op building. But plans for organizing such associations were formulated and presented at innumerable meetings and conferences and advisory service rendered groups of farmers desiring to organize. By 1920 the number of organizations had increased from 90 in 1915 to 418. Many mistakes are admitted but much was accomplished in assisting farmers to realize their objectives.

FARMERS AIDED BY COOPERATIVES

Such associations as the Michigan Milk Producers, Michigan Potato Growers and the Michigan Livestock Exchange, formed during these early years of the state's co-op history, proved by records their aid to Michigan farmers. Increased earnings of \$400 annually for every man producing 250 pounds of milk daily stands as the war record of the Milk Producers Association while reduction of handling costs between potato growers and dealers from 49 cents in 1918 to 27 cents a year later is the boast of the Potato Growers Association.

Although cooperative marketing had become an important phase of the state's agricultural industry, the price-drop occasioned by the post-war depression of 1920-21 showed up mistakes made during the period of intensive organization of cooperatives while the experiences of the cooperative themselves demonstrated the need for better business practices. Investigation proved that in the haste to derive cooperative benefits, cooperatives designed for handling grain, beans, farm supplies and other commodities requiring considerable investment in physical facilities and working capital had been organized on plans recommended for livestock and potato shipping associations requiring little investment.

Exposure of such errors, plus the desirability of extending a wider economic service to the state's farmers, led to the merging of the office of market director with the College Economics Department in 1920.

Following the merger and general reorganization, numerous changes were made in cooperative organizations then in existence and new groups were formed. In 1924, 486 cooperative organizations were in operation in Michigan. Effort was directed towards correct organization of new associations while old ones, in danger of internal decay from poor management or lack of adequate information, were rejuvenated through reincorporation and mergers and by liquidation of those having no chance to exist.

Along with the teaching and application of better principles of cooperative organization every effort possible, with the still limited personnel available, was made to encourage the management of cooperatives in better business practices. Development of accounting systems, information regarding methods of handling farm produce and the adoption of the fundamentals of merchandising to the sale of farm products and supplies were the tools of this new education

in farm marketing. Informative campaigns were, and still are, conducted among association members to encourage better grading, standardization of products and in some cases establishment of brands. Proof of the value of such work is attested by the fact that practically all handlers of farm produce or supplies have largely adopted the practices of the cooperatives in the past several years.

In answer to a growing demand for special investigation of factors affecting the marketing of farm products the college economics department was expanded in 1925 to include a personnel for teaching and research work in agricultural economics. A beginning was made during the latter part of the twenties to make available to the membership of the cooperatives, economic information concerning operation of their cooperatives as business institutions and factors affecting prices of farm products. The program to enlarge work in this field had been well launched by the close of 1929.

The world's unsettled economic status in the depression years of the early thirties brought farm cooperative's financial problems into the limelight more than ever before. The newly organized department of agricultural economics and the marketing extension service was faced with a marked decline in the value of farm commodities and the task of educating cooperative managers to coordinate their services to nationwide economic change.

Needy associations were directed to the Federal Farm Board and, later, its successor, the Banks for Cooperatives. Although 44 of Michigan's Cooperative and Marketing associations had loans outstanding with these agencies amounting to \$1,349,000 on Aug. 31, 1939, it is of interest to note that though some were reorganized to meet the requirements of the federal agencies only a very few failed during the period when financial and other business institutions were closing by the hundreds.

ORGANIZATION OF SUGAR BEET ASSOCIATION

An example of economics extension work carried on during the early years of the depression may be seen in the Farmers and Manufacturers Sugar Beet association, organized in 1930. When beet growers sounded a call for help in rehabilitating the industry, college agricultural economists surveyed the situation and came to the conclusion that improvement would only be reached through a sharing of responsibility in production and sales between grower and manufacturer. In an effort to insure sufficient acreage to make operation profitable for the manufacturer local cooperative associations were formed around each sugar factory.

Officers of these groups were empowered to negotiate contracts between farmer and manufacturer calling for each party to receive 50 percent of the proceeds from the sale of sugar, pulp and molasses. Details of the contract have been changed, yet it is still used to the advantage of both grower and manufacturer and the industry is rated in the best condition it has enjoyed in the past two decades.

Depression problems again emphasized the need for educational programs among the members of the cooperatives and accordingly three specialists were added to the extension staff to begin organized educational campaigns. Taking the form of meetings with local memberships

this work has been carried out in connection with the state commodity exchanges. Subjects discussed range from accounting practices and merchandising methods to the effects of governmental activities and general economic conditions on agriculture.

In addition to the extension activities carried on directly relating to marketing problems the economics staff has, for the past nine years, published, in bulletin form, *The Agricultural Outlook*. This gives factors which are likely to affect agriculture for the following 12 months, and their results. Fifteen thousand copies of the bulletin were distributed in 1938 to county agents, crop reporters, Smith-Hughes teachers and individual farmers. Supplementary material in the form of a quarterly publication "Agricultural Economic News for Michigan" is also distributed in the amount of 7,500 copies per issue.

The economics staff has not been unmindful of the importance of the preparation and presentation of timely agricultural economic information. Members also have devoted their efforts for the past 25 years in furthering the long-time program which is to assist Michigan farmers in building an efficient cooperative sales service for the major farm commodities produced in the state.

AGRICULTURAL ENGINEERING

In cooperation with the Farm Crops Department, members of the College Agricultural Engineering staff began extension projects about 1914 when a full-time Agricultural Engineering Extension Specialist was appointed.

Two and three-day institutes were held in various counties during the first year of the work and such topics as drainage, septic tanks, gas engines and home conveniences were discussed.

In the summer of that year the first septic tank demonstrations were put on in Allegan and St. Joseph counties. Each of these installations are still in operation. Since that time demonstrations have been held in all of the state's 83 counties with portable forms left at each demonstration site. More than 15,000 tanks have been built, and improvement in size and design of commercial tanks has been a direct result of the initial project.

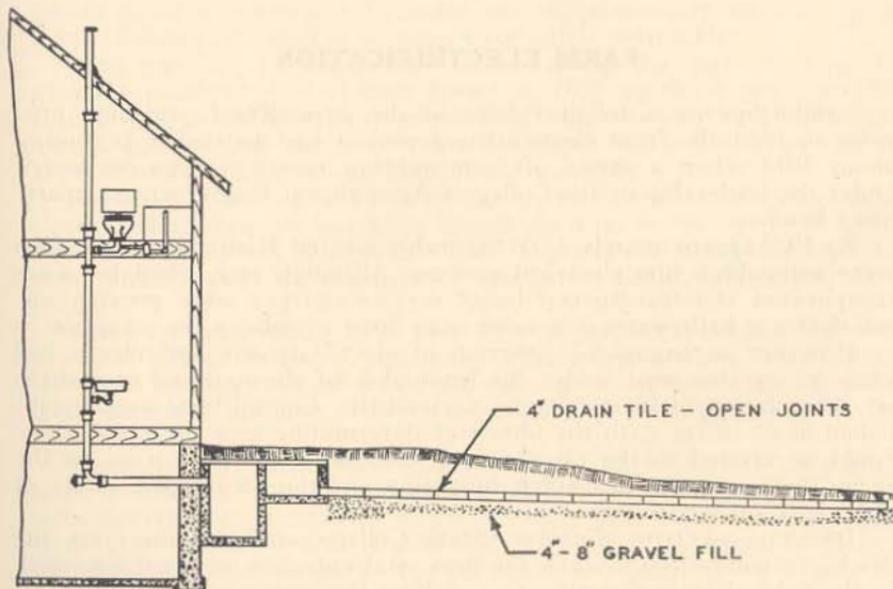
With the demand for increased crop production that began in the war years drainage work loomed especially important. Need for knowledge of drainage design on the part of farmers, contractors and drain commissioners resulted in a major share of the agricultural engineering extension work being confined to demonstration farms, meetings and conferences with contractors, manufacturers, commissioners and farmers.

DRAINAGE PROGRAM

At least partially a result from the early drainage work program of the division is the fact that today Michigan is exceeded by only two other states in the number of main outlet ditches. About 16,000 miles of such drainage is now claimed in the state and approximately 9,800,000 acres are affected by drainage structures now installed. Probably the

first planned and controlled drainage system in the country was installed on the Looking Glass river in 1936.

In 1921 a second extension worker was added to the project staff to conduct a land-clearing campaign in the Upper Peninsula with the object of stimulating clearing undersized farms and to teach safety and economy in the use of explosives and equipment. Such methods as demonstration trains, meetings, and truck demonstrations were used to further the campaign. Cooperation from various civic and commercial sources was utilized. A major activity in this project was the distribution of 5,766,050 pounds of war salvage explosives in Michigan at an average saving of 10 cents per pound to the farmer.



Construction of septic tanks has been promoted by extension specialists in agricultural engineering. The accompanying sketch shows a typical tank installation.

Although the clearing project continued as a minor part of the program for a good many years, intense interest had shifted by 1924 to marl digging demonstrations which were carried on in cooperation with the Farm Crops Department. As a result of these first practical demonstrations in digging marl nearly 250,000 cubic yards now are being used annually in the state.

A project in farm building work was also started in 1924 which, then, consisted of a few model displays at county fairs. In 1936 the first five demonstration poultry houses were built in the Upper Peninsula and insulation was introduced for the first time in farm buildings. From that time on the farm buildings project has been a major one stressing such things as safety bull pen demonstrations, model dairy and farm buildings and insulated brooder houses.

Some of the outstanding results of the project have been the development of better plan service, introducing insulation for farm buildings, obtaining water-proof insulation material from manufacturers, developing the Midwest Plan service, introduction of the laminated rafter type of construction, reduction of costs and an increase of efficiency.

A complete review of the work done in agricultural engineering extension since the inception of the service reveals farmer aid along such lines as home conveniences, machinery repair, pen barn demonstrations, sewing machine projects. Future expansion of the service will rest on increase in demand and amount of time and number of staff workers available to carry out the program.

FARM ELECTRIFICATION

Established as a definite phase of the agricultural extension program in 1928, the farm electrification project had an earlier beginning about 1914 when a series of farm-lighting meetings was conducted under the leadership of the College's Agricultural Engineering Department head.

By 1923 approximately 3,000 favorably located Michigan farm homes were using high line electrical service. Although rate schedules were complicated and transformer-based service charges were proving unsatisfactory, little extension work was done to relieve the situation.

However an organized program of electricity for agriculture had been set up that year under the leadership of the national committee on the relation of electricity to agriculture. Committees were established in 26 states with the object of determining how electric service could be carried to the farmer, how electricity could be used on the farm, the economics of electric operation and the sociological effect of electricity on agriculture.

Inclusion of two Michigan State College staff members on the Michigan committee marked the first vital entrance of extension work in the field of farm electrification. Under the sponsorship of this committee the Mason-Dansville experimental line was built to serve as a laboratory for studying the application of electricity to actual farming conditions.

Results of such experimental work were published in experiment station bulletins. By 1928 a new rate schedule and farm line construction policy, known as the "Michigan Plan" was adopted.

Increased demand for information pertaining to farm electrification service and methods brought about the establishment of farm electrification extension service in 1928. Pioneer work in that field was done through the use of an electrification demonstration truck equipped with a farm wiring installation, electric motors and other equipment.

For the five-year period until 1933 the truck was sent about the state carrying extension service electrification education to Michigan's rural families. A four-wheel trailer designed and built to carry a model electric kitchen was added to the entourage about 1930 and a home economics extension specialist accompanied other extension workers demonstrating household equipment and appliances.

ELECTRIFICATION SCHOOLS CONDUCTED

Electric schools were also conducted for a three-year period scheduling series of meetings at two-week intervals in locations selected by county agricultural agents. Work was largely of a follow-up nature and usually offered in communities previously visited by the demonstration truck. Further interest was stimulated through 4-H clubs and, in 1935, formation of the federal Rural Electrification Administration heightened interest in the already well-developed program.

Since 1936 demonstration meetings have been conducted in the form of two-day farm electrification schools set up in various counties and attended by manufacturers and local dealers as well as interested farmers. Detailed programs concerning the practical, profitable use of electricity in farm homes are discussed and supplementary material in the form of slides and motion pictures have often been added.

Michigan has advanced from 20th among the states having the greatest number of electrified farms in 1927 to third place in 1939. During this period electrical service has been extended to 115,000 farm homes and for the past nine years Michigan has led all states in the number of farm connections established annually.

A too-little praised portion of the service's aid to Michigan agricultural electrification has been standardization in the form of wiring and use of electrical appliances which has followed much research and experimental work on the part of specialists and the Michigan State College.

Other services which have been offered and accepted are the analysis and interpretation of the many differences existing between the electrical and agricultural industries and the recommendation of wiring methods which are now used in a majority of Michigan's rural wired homes.

Establishment of available electric energy for all farm homes in the state will not end extension service in that field. Michigan farmers are comparatively new users of electric energy and although the fundamental questions of line access and wiring of buildings have been answered, constant demands for information regarding new, practical and profitable uses for farm electricity are already piling up.

Future efforts in answering such questions may, eventually, result in farm electrification becoming a vital method of converting a farm house into a farm home.

ANIMAL DISEASE WORK

An increasing demand on the part of Michigan dairymen for assistance in fighting the Bang's disease epidemic threatening their herds resulted in the beginning of extension service in animal disease control.

Estimates that Bang's disease was costing dairy farmers \$5,000,000 annually and that it had increased 100 percent between 1920 and 1930 culminated in the establishment of the service in March 1930.

A sub-project, horse parasite control, was added to the program in 1933, and two years later, community health as affected by animal diseases, and better health for farm animals, were included as subordinate projects.

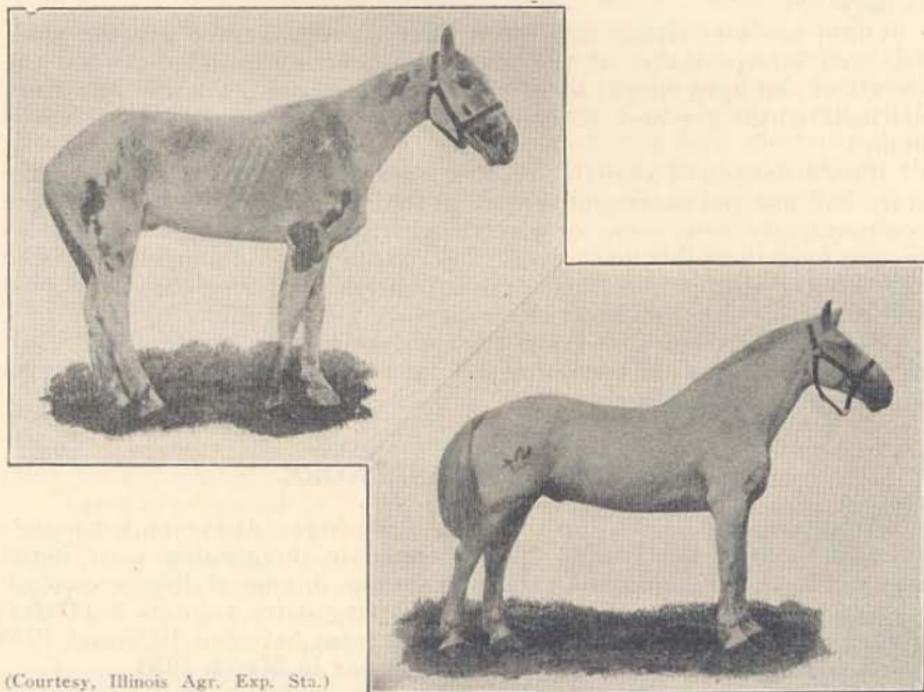
By 1936 the list of projects was expanded to include attempted control of nearly all animal diseases. Various phases of the work have been conducted through the cooperation of county agricultural agents with the help of veterinarians, interested local leaders and high school agricultural teachers.

Early control work among Bang's disease herds took the form of establishment of demonstration herds, organization of farmers for group herd testing and visitations to infected farms for the purpose of analyzing individual problems.

In 1934 the federal government began a Bang's disease control program. For cooperative reasons much of the extension program had to be changed. Demonstration herds were no longer necessary, group testing became largely confined to accredited herd work and farm visits have become limited to problem herds and organization work. Most of the extension service work is now devoted to organizing for area testing and discussing and explaining various problems.

BETTER HEALTH FOR FARM ANIMALS

Much of the work on the horse parasite control program, which included demonstrating the effects of parasite infestations and organizing farmers for group treatment of horses, has been diverted to county agents, veterinarians, high school instructors and local leaders. More



(Courtesy, Illinois Agr. Exp. Sta.)

Horse infested with internal parasites and same horse after proper treatment.

The Extension Service has stressed the importance of horse parasite control as illustrated here.

time is thus allowed for extension efforts in the controlling of other diseases. Promotion of better health for farm animals is handled through demonstrations, lectures and discussions. A minor activity assuming more importance on the program is the fostering and promoting of veterinary service associations.

Much of the animal disease control extension service is conducted through direct cooperation with individuals and agencies. Important cogs in the elimination of Bang's disease campaign are county agents and county supervisors. Close cooperation is carried on with the state department of agriculture and the federal bureau of animal industry, while help has been extended to and received from farm security administration officials, teachers of vocational agriculture and F.F.A. members.

Animal disease control men have participated with animal husbandry and dairy department members in several projects such as dairy schools, cow tester training schools and livestock sales. Assistance has been extended to 4-H clubs, veterinary medical associations have been helped in numerous ways and lectures have been given at the University of Michigan to classes in public health work as a co-operative project with the state department of health and hygiene.

Although the entire results in controlling Bang's disease in Michigan are not all traceable to extension activities the initial campaign which launched this phase of the service has been an important factor. A 1930 estimate placed at least 15 percent of the state's 1,000,000 young and mature dairy animals in the infected class but the number of tests for Bang's disease did not exceed 40,000.

In 1938 extension men alone tested 73,421 blood samples for the disease while federal agents tested 251,895. In addition the number of tests run by practicing veterinarians exceeded 10,000 a month by March 1939. All cattle in 22 northern counties have now been tested under federal supervision and reactors removed. It is now estimated that the incidence of infection in the state does not exceed 10 percent. The first herds accredited as free from Bang's disease were so designated in 1932. At present there are more than 7,500 accredited herds.

The increase in animal disease control shown in the Bang's disease campaign has been reflected by all other phases of extension control work.

Much current interest is being shown in control of mastitis infection and 7,717 tests of samples have now been made by extension workers in the official laboratory.

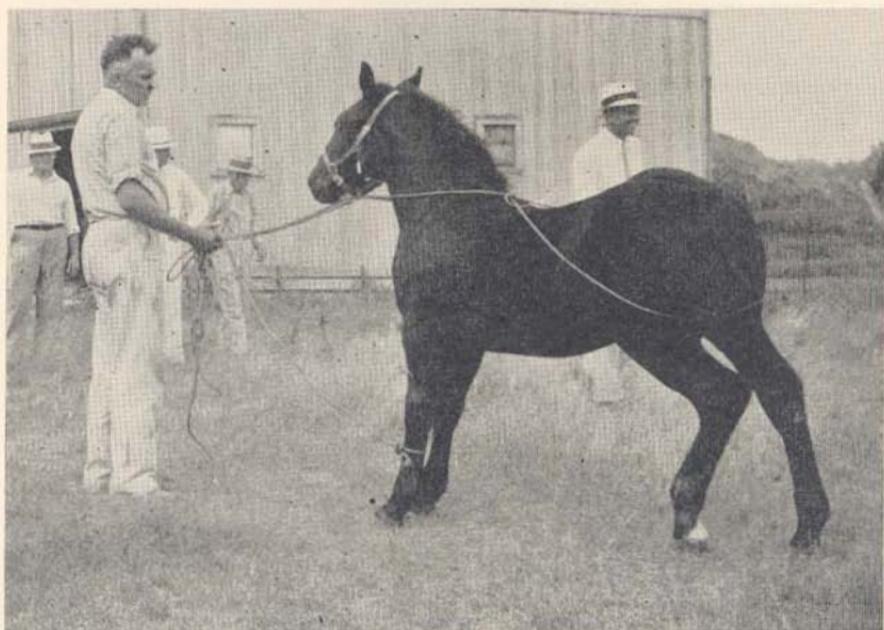
Increasing interest in farm animal disease control shown by members of 4-H and F.F.A. clubs indicates the future of this phase of the extension service program. Present trends call for more work to be done in the fight against mastitis, equine encephalomyelitis (sleeping sickness) and animal diseases affecting human health.

ANIMAL HUSBANDRY

When the Michigan State College Agricultural Experiment Station published a bulletin entitled "A Plan for the Improvement of Michigan Cattle" written by Pres. Robert S. Shaw, then acting dean of agriculture, in September of 1906 the nucleus for one of Michigan's first extension projects was created.

Incorporated in the bulletin were partial reports of animal breeding experiments then in progress at the college and a summary of the livestock situation in the state, together with plans for improving it. Shortly after the publication of the bulletin a plan for a cooperative breeders' association, known as the block system, was developed and in December 1907 had been put into operation.

Still patterning their work after Dean Shaw's plan, members of the animal husbandry staff in 1908 assisted the Michigan Improved Livestock Breeders' and Feeders' association in the preparation of a directory, containing names of all livestock breeders in the state. This list was used in promoting livestock improvement. More than 2,000 breeders, their postoffice address and their breed of livestock were listed in the first directory and A. C. Anderson, association secretary, acted as exchange agent between buyers and sellers, directing most of his efforts towards placing purebred animals where they were most needed.



Demonstrations in horsemanship have been a part of the program of extension specialists in animal husbandry. Here is illustrated a demonstration being given on how to teach a colt to lead.

With the appointment of a livestock extension specialist April 1, 1909, came an expansion in breeder association promotion. Local livestock associations were set up to consist of three units, each one of which pledged itself to the purchase of a purebred sire and the exchange of these sires at two-year intervals, thus providing six years of pedigree sire service. By July 1, 1914, more than 100 such associations had been organized most of which were incorporated under state law.

Owing to the excessive demand for wool during the war years the Michigan War Board set aside a \$10,000 revolving fund for the purpose of assisting farmers to bring good foundation sheep flocks to the state. So, in addition to carrying on the projects already started by his predecessor, the specialist was called upon to assist in Michigan's rapidly expanding sheep industry. He was aided by a sheep purchasing agent appointed by the board, in establishing a consistent purebred sheep project.

Prospective purchasers were assisted in locating suitable breeding stock, sheep men were taught the best methods of feeding and caring for flocks and special effort was made to focus breeders' attention on the fine northern Michigan pasture grasses then going to waste. During individual instruction campaigns, extension specialists spent much time with farmers and settlers in cut-over regions, pointing out the value of sheep in clearing land and their adaptability to northern Michigan farming conditions.

PROJECT METHOD USED

Since its inception extension leaders in animal husbandry in Michigan have carried on the major share of their work through the medium of projects and although some early work was done by the lecture and demonstration method the failure to develop community interest and local leaders has long since led to the abandonment of such a program. At the present time animal husbandry extension work is largely confined to projects with one major project underway for each class of livestock plus several minor ones.

One of the most successful livestock projects now in operation is the Michigan Colt Development plan which, in 1937-38, boasted an enrollment of 450 farmers from 43 counties. Designed to stimulate interest in the breeding and development of draft horses the plan has gained added momentum through local meetings conducted for the purpose of demonstrating methods of hitching and breaking, the use of multiple hitches, trimming, care of horses' feet and methods of feeding. County horse days, breeders' tours and dynamometer demonstrations at county and local fairs have also proved successful means of creating interest.

Various beef cattle projects are also proving their worth to Michigan farmers in several counties. Largest of these, the Michigan Beef Calf Feeding project, drew approximately 100 entries from 28 counties last year. With the aim of focusing attention of local people on methods which should be followed in proper raising of beef calves this project has stimulated interest in beef cattle breeding throughout the state.

Other notably successful cattle work now being directed by the extension service in animal husbandry includes special sire sales at Gladwin and Lapeer, cattle feeders' tours, cost accounting studies carried

on in cooperation with the farm management department and assistance rendered 4-H club youngsters and Future Farmers of America chapters.

Sheep breeders, who have benefited from college extension services, give primary consideration to the ram truck project and the construction of community dipping plants operated on a cooperative basis. The Wolverine Lamb Production project, with more than 200 cooperators, has also done much to arouse interest in improved breeding methods and such minor projects as wool improvement meetings, 'lamb feeders' and sheep breeders' tours and sheep shearing and wool grading schools have their place on the extension program.

Though still in the embryonic stage, project work in swine husbandry is rapidly assuming an important status in the eyes of animal husbandry staffmen. The Ton Litter project, the Michigan Swine Feeding and Michigan Pig Crop contests are the early steps toward a well-rounded program for improving Michigan swine herds.

Proof that animal husbandry extension work has been a vital factor in the improvement of Michigan livestock and an indication that it will continue in that capacity is shown through the increase in attendance at staff meetings held in the past decade. In 1930 a total of 481 staff meetings with an attendance of 25,679 people was reported. By 1938 the number of meetings had increased to 541 with an attendance figure of 129,990. An appreciable increase both in number of meetings and in attendance is evident in the past two years.

BOYS' AND GIRLS' CLUB WORK

"To make the best better"

That has been the motto and the goal of 4-H club participants since the work began unofficially in 1899 through Will B. Otwell's Corn Club in Macoupin county, Illinois.

Otwell's first agricultural club, like Mr. Finney's turnip, grew and grew until today 4-H club work has become an important phase in the work of the United States Department of Agriculture and is carried on in Michigan and other states in cooperation with agricultural colleges for the benefit of rural boys and girls in an effort to teach them better home and farm practices as well as broaden their philosophy of life.

James C. McLaughlin, Muskegon congressman, was instrumental in fostering Michigan's first agricultural clubs. Aided by the federal department of agriculture, Michigan Agricultural College, school commissioners and various groups of interested individuals McLaughlin, in 1908, inaugurated, in his district, corn-growing contests in the counties of Muskegon, Mason, Oceana, Wexford, Newaygo and Manistee.

Later clubs were organized by a Michigan Agricultural College professor, Walter H. French, and members of his staff under the title of junior agricultural organizations. These were promoted through the office of the department of agricultural education at the college.

In 1913 Dr. Eben Mumford was named to the position of state extension leader for Michigan Agricultural College and the United States Department of Agriculture. He conducted the first official corn growing club contests in the state.

Top club for that year turned out to be the Antrim County Boys' Corn Club led by Myron E. Duckles of Elk Rapids. Organized Jan. 17, 1913, with an initial membership of ten boys the club had, at the year's end, achieved the best club record in the state and had seen one of its members, Grant Withers, sent to Washington, D. C. as State Corn Club champion and the first in Michigan 4-H Club work to receive an educational trip in recognition of club achievements.

During the same year all state club work was turned over to the extension division of the college and, after the passage of the Smith-Lever act in 1914, was placed in charge of a state leader of boys' and girls' club work.



Summer camps, for recreation and instruction, are a part of the 4-H club work.

Still increasing, club projects added bean and potato growing to the list in 1914-15 and in 1916 a woman was employed as an Assistant State Leader to promote homemaking projects for girls.

World War emergency funds and the need for vegetable gardens kept club work booming from the year 1916, when one man and one woman comprised the state club staff with only six county leaders to handle a total club membership of 5,920 to 1918 which included the employment of 13 people on the state staff plus 64 part-time county club leaders and a total club enrollment of 50,000.

Clothing, gardening and canning projects seemed to be the main stand-bys of 4-H workers during the war years and the major part of the program was carried out in the cities and villages rather than in the country. Then came the post-war depression period, a lack of paid personnel and the necessity for shifting the 4-H program from urban to rural areas.

Taking advantage of the winter portion of their two-season program, state club workers first introduced handicraft projects to the boys in rural districts in 1918 and at the same time developed a hot lunch project with the object of providing school children with warm

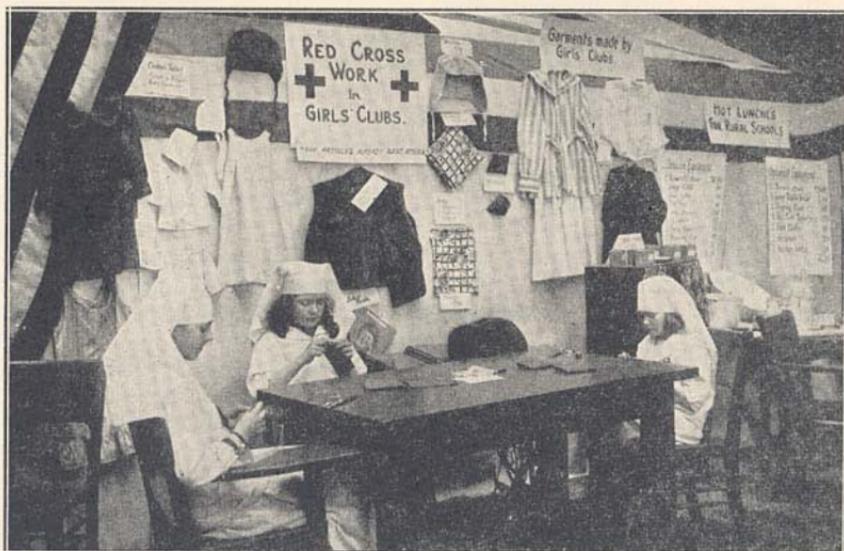
dishes at noon to supplement the cold lunches carried from home. Live-stock projects appeared in the 4-H club program in 1917 with pig clubs leading the way to be followed shortly by sheep, beef and dairy calf clubs.

24 PROJECTS OFFERED

Year by year Michigan's 4-H club schedule has grown until today rural and village members can choose from a program of 24 projects including handicraft, clothing, home management, home furnishing, hot lunch and deer yard study in winter, and corn, bean, potato and sugar beet growing, garden, forestry and forest fire study, pheasant raising, soil conservation, poultry, dairy, beef, sheep, pig and colt clubs, food preparation, canning and farm accounting in summer.

Means by which 4-H work has progressed are many. Considered an integral part of the college extension program it has been aided and supported by the State Board of Agriculture, the public school system, farm organizations such as the Grange, Gleaners, farmers' clubs and the Farm Bureau, various businessmen's organizations and numerous legislative appropriations.

The 4-H club camp buildings at Grayling were made possible through a \$25,000 legislative grant in 1928. By 1933 a special fund known as the "4-H Club Allocation" was created to help stimulate development of the program by assigning to each county on the basis of the program within the county a sum of money to be used in making suitable awards to 4-H clubs, members and leaders. Administered cooperatively by the office of the state commissioner of agriculture and the college 4-H club department the grant has risen from \$25,000 in 1933 to \$40,000 in 1938.



This 4-H club exhibit at the 1918 Farmers' Week illustrated the part Michigan 4-H clubs played during World War I.



Champion dairy club demonstration team at the Michigan State Fair with their demonstration equipment.

Additional 4-H club backing has come from county boards of supervisors, the various state livestock breed associations and especially from the county and state fairs. Established as a Michigan State Fair feature in 1917 the department has proved one of the real incentives and rewards for sound 4-H programs throughout the state.

Then there are the various other agricultural shows around the state including the 4-H livestock show in Detroit, the National committee on boys' and girls' club work, the national dairy show, the Michigan State College club week established in 1918 and in continual yearly operation since, the numerous camps, scholarship awards, educational tours and the helpful work of the state departments and institutions.

All these have gone into the development of 4-H clubs which today are a definite source of education, entertainment and a broader outlook on life for Michigan's rural youth.

WORK OF LOCAL LEADERS

However the opinions of those familiar with 4-H club organizations indicate that no resume of the work would be complete until adequate praise had gone to the local leaders. Dependent for success or failure on these unpaid and often unmentioned people behind the scenes of 4-H club life, most club members automatically nominate their local leaders for chief praise when compliments are passed around.

Today's 4-H participants take little time to look backward at the achievements in the first quarter-century under the Smith-Lever act. But when they do a satisfied smile usually breaks out. For they see a program that has grown from a six-county corn-growing club program

in 1908 to a banner year that in 1938 showed 5,572 clubs complete, 20,215 out of 23,841 boys' projects and 24,726 out of 27,993 girls' projects for an average 86.4 percent completion. They know that since the passing of the act in 1914 they have helped organize 53,583 clubs with a Michigan membership totaling 589,914 rural young men and women, 73.4 percent of whom completed their project requirements.

But though they may pause for a brief backward look on their silver anniversary, state 4-H members are much too busy to dream long of the past. Their dreams are for the future.

CHILD CARE AND TRAINING

Nine years after the calling of the first White House conference for the study of dependent children by President Theodore Roosevelt, active participation in similar projects had become accepted practice in the college home economics extension service.

A report released in 1919 concerning work done in child welfare stated that in some counties nearly all such work was being done by home demonstration agents while in others cooperation had been extended by the women's committee of the council for national defense. Assisted by the health specialist, demonstration agents had been active in establishing weighing centers for babies and in sponsoring talks and demonstrations by physicians and nurses on proper care and feeding of children and exhibits of diets, clothing and proper toys.

Loss of the health specialist in 1920 slowed down the amount of child welfare work carried on but by 1922 the nutrition specialist was organizing children's clinics and writing leaflets on child diets.

Child care and training extension work continued during the early twenties through the use of nutrition studies in rural schools, special clinics and installation of a college class in the home economics division dealing with home care of children. Students also were being sent from the college to the Merrill Palmer school in Detroit for study in child care.

FULL-TIME SPECIALIST NAMED IN 1929

Appointment of a woman to develop and teach a new course in child study at the college influenced the extension program but it was not until 1929 that the first child care and training specialist in Michigan was appointed to devote full time to extension duties in this project.

Early efforts to locate problems in the field disclosed the fact that the state health board was carrying an educational program for mothers which included pre-natal, infant and child care. For that reason it was decided to concentrate on the training program.

Because requests from mothers were for aid in solving problems of habit formation, obedience and self-reliance, behavior, sharing of home duties and pleasure and recreation, a series of extension programs titled "Understanding Your Child" was started. The specialist met with groups in training centers and lectures and problem discussions were the first methods of teaching used.

Though long-practiced in other projects, leader-training was not begun in child care and training extension work until 1931. In the

initial work carried on by that method the specialist met with the entire group for the first and last meeting of the period to explain the significance and philosophy of the program. The other three meetings were conducted by local leaders.

A cooperative project utilizing material prepared by the specialist and taught by the demonstration agents was offered during the 1932-33 season. By 1934 the trend of such extension service had veered away from teaching of skills in child handling and training to developing of an understanding and appreciation of the factors which make up human relationships and personal adjustments.

Establishment of emergency nursing schools was accomplished through the cooperation of the extension service and the F.E.R.A. in the fall of 1934 and the spring of 1935. The work consisted of supervision of nursery schools and the organization and supervision of parent education groups.

Previous projects were continued during the 1934-35 season and a new project, "Mental Hygiene for the Family" was added to the list. In addition a Parent-Youth program was begun in two counties during the summer months with the object of bringing about discussions between parents and young people on the future outlook for youth.

During the year 1936, work was begun in Jackson county on an educational film, "You and Your Family" and the following year a pre-school cooperative project for use in home agent counties was organized.

A change in specialists occurred in 1937 and a new program dealing with the problems of older children was prepared at the request of several women.

During the 1937-38 season 26 counties were given some phase of the extension work in child welfare. Groups were continued in both leader training and individual units and a camp for mothers, a new venture, sponsored by the Kellogg Foundation, was held at Clear Lake. Assistance was rendered the parents at Webberville and Williamston in establishing summer recreational programs supervised by WPA workers.

All through the thirties use of radio programs had been an effective part of the child welfare service and in 1935-36 a series for organized listening groups was established.

Efforts of the child welfare specialist aided by cooperation from various other college and state departments resulted in reaching a total attendance membership of 69,049 during the decade, 1929 to 1939. The number of children reached in the ten-year period total 25,822.

Centered on the better understanding of individual needs, this phase of the extension service program eventually will be broadened to include handling of community problems rather than simple family and child difficulties.

CLOTHING PROJECT

Home economics, one of the many extension activities whose beginnings date from the passage of the Smith-Lever act in 1914, largely limited early clothing project work to textiles.

Pioneer home economics extension work was carried on through one-week extension schools conducted by the specialist appointed Sept.

1, 1914. Such schools were scheduled throughout the winter months in counties where a sufficient number of women had applied for them. Lecture and demonstration methods were utilized while illustrative material such as sample textile fabrics and outline bulletins supplemented the work. Interest in the work was stimulated through contact with the state women's organizations. The first series of 12 schools attracted 922 women.

Textile study continued to be a major feature through the war years when extension schools and lectures were organized through schools, women's clubs, farm bureaus and farm granges. Active agitation by local women for county financial support in the appointments of home demonstration agents resulted in the employment of 25 agents in 1918.

A domestic arts specialist, who confined her efforts to instruction in clothing, was appointed the same year. Talks and demonstrations on dyeing, use of patterns, sewing machine attachments, cutting and fitting and remodeling were added to the study of textile fabrics.

During the following year children's clothing, clothing budgets and the choice of becoming colors were added to the list of sub-projects. Questionnaires were used to obtain information on clothes purchasing habits.

NEW METHODS

With the era of dress forms and millinery, which began about 1920, came new methods of extension service. Leader training was introduced for teaching methods of form-making while clinics were scheduled for those interested in millinery. The change has persisted and from that time until the present, extension home economic specialists have spent less time with individuals and more time in the training of local leaders and home demonstration agents. County executive committees of women to aid the county demonstration agent in planning and organizing the work came into being about 1920.

Some construction work was started in 1922-23 with finishes, patterns, cutting and fitting included in the program. The specialist met with each of two local county groups once each month for five months and where interest warranted it local leader work was introduced. First mention of an achievement day where results of the year's work could be displayed was made in connection with this construction project.

By 1924-25, when two clothing specialists were employed, local leader training had been accepted as the best feasible method of carrying on the work in an effective, comprehensive manner.

Three sub-projects, "An Introduction to Clothing Construction," "Garment Fitting," and "The Study of Color and Design in Relation to Clothing," were introduced in 1925. Six days of leader training and a seventh "Achievement Day" were required for the sub-projects. The short-time project of dress forms was continued and much stress was exerted on their correct use.

Surveys were used at this time as a basis for planning the work. Since the local leader plan necessitated much accurate and detailed preparation of subject matter material, numerous bulletins were written and illustrative material for the use of local leaders was also

planned. In 1925-26 a radio clothing short course presented by members of the extension and resident departments, initiated the first series of radio talks on the program.

Continuous work in the three sub-projects went on until 1933 but with the introduction of special phases of work designed to enable women to adjust to depression years, they became of less importance.

Depression years also served to reduce the staff of specialists from three to one and project changes became apparent in 1930-31. A group of four lessons on making over tailored wool garments was begun and a cooperative project on problems of the household buyer was tried out in one county. Lecture-demonstrations on children's clothing and on shoes and hose were offered by the clothing specialist.

By the following year home demonstration agents were holding clinics in remodeling and care and repair of clothing. Cooperative projects on the household buying and on child care were continued and, to aid rural women in stretching clothing dollars, a project featuring remodeling and making of dress accessories was introduced. During this period a number of home economics extension groups in eight counties assisted in sewing for the Red Cross.

Cooperating with the agricultural engineering department the home economics extension service added a sewing machine clinic to their program in 1933-34. This is still in operation. Dress-fitting, clothing selection, a clothing thrift series and the cooperative projects mentioned made up the remainder of the program for the year.

Tailoring of new wool garments was added to the project list in 1934-35 when special groups in two counties were enrolled for instruction given directly by the specialist.

PROJECT REVISED IN 1936

A complete revision of the local leader clothing project was undertaken in 1936. New bulletins were prepared for "Style in Dress" and a series of five discussions was used in every county enrolled in the clothing project that year. Planned for general interest the discussions centered on fashion trends, reviving of last year's clothes, line and color, posture and foundation garments, accessories and modern dress finishes.

A five-lesson discussion project planned around the making of a dress from a commercial pattern was included in the work in 1936-37 and the year following a similar discussion project was concentrated on family clothing problems.

Projects in operation during the 1939-40 season included "Dress Styles," "Spending the Clothing Dollar" and "Making a Dress from Commercial Patterns." Such short-time projects as tailoring classes, classes in children's clothing (specially designed to aid young mothers) style talks and clothing clinics, demonstrations of good grooming practices and sewing machine clinics were also on the 1939-40 program.

From figures in specialists' annual reports it is learned that extension clothing work has been carried on in 76 of Michigan's 83 counties and that a total of 173,606 women have been reached through leader-training in clothing since 1924.

Future plans of the home economics extension workers in clothing projects embody the continuation of present phases of the work with

additions and changes of emphasis to be made at the dictates of changing economic and social conditions. Available economic information will be incorporated in all future projects.

COUNTY AGRICULTURAL AGENTS

All of Michigan's 83 counties receive services of county agricultural agents—a goal attained in 1937—yet in every county the appointments followed demand from the rural population and approval by county boards of supervisors.

Officially the county agricultural agent became part of a recognized extension service in Michigan in 1914. The Smith-Lever law then authorized federal contribution of \$1,200 towards an agent's salary whenever a county agreed to supply funds to pay the balance of the salary and necessary expenses for maintenance of an office.

Yet there were services rendered in Alpena, Iron, Kent and Kalamazoo counties in 1912 and in 1913 seven other counties added the service. These seven included Allegan, St. Clair, Branch, Genesee, Saginaw, Houghton and Newaygo. It took war conditions in 1918 to bring the greatest increase of 26 counties in any one year. The final addition, of Mackinac county, occurred in 1937.

Slightly more than a quarter-century ago, apparently in 1912, I. W. Byers, then president of the Upper Peninsula Grange association, published a leaflet titled "Why a County Agriculturist?"

"Farmers have doctors, dentists, veterinarians, lawyer and preachers for their needs. Yet a farmer has no one to consult if his potatoes get blight, apple trees die, if his soil gets sick."

PROBLEMS NEEDING ATTENTION

So Mr. Byers proposed counties should be served by persons versed in these problems and he listed 10 problems that needed attention such as "the county agriculturist" could give. He suggested attention to:

- "1. Drift of population to the cities.
- "2. Exhaustion of the soil. This is a live problem before the State of Michigan and is taking place right under the nose of the Agricultural College and the State Grange.
- "3. Abandoned farms. By this I mean not only leaving the farms without anybody living on them, but when land owners will rent their farms and move to town or sell the farm and invest the money elsewhere. This is just as much farm abandonment as vacating the farms in the New England States or New York or Pennsylvania.
- "4. Farm Markets.
- "5. Farm Credits.
- "6. Comforts for farm life.
- "7. Social life among the farmers.
- "8. Trained leaders of men.
- "9. Cooperation.
- "10. Organization of the farmers. Just as are the plumbers, stone masons, carpenters, iron workers, etc., organized, and for just as definite purposes as they are organized."

Early financing was a problem. In some counties the Chambers of Commerce or similar commercial clubs assisted and influenced the boards of supervisors. Influential individuals often promoted the movement. L. S. Foote of Saginaw and Joseph Gerber of Fremont were typical men who corresponded with Dr. Eben Mumford in 1912 and 1913 when Dr. Mumford was working as the first state leader of agents in Michigan.

Financing in various periods was accomplished by the following methods:

1914-1920. State Funds—\$1,200 per year to each county for agent's salary. County funds—provided by appropriations by Boards of Supervisors, contributions from the Farm Bureaus obtained by \$1 membership; from voluntary subscriptions.

1920-1926. State Funds—\$1,200 per year to each county. County funds, provided as before but in the early part of this period the aid from County Farm Bureaus increased greatly because of the intensive membership drive at \$10 per member. However, toward 1926 these funds decreased as people failed to renew their memberships.

1926-1935. State Funds consisted of \$1,800 in most counties although beginning with 1927 a few counties in the northern part of the state received \$2,400. County funds were mostly from appropriations of boards of supervisors.

1935-1939. State Funds consisted of the entire salary of the County Agricultural Agent. County funds were from supervisors' appropriations for office maintenance, travel and stenographic help.

PUBLIC ATTITUDE

Public attitude has been relatively solid in favor of the extension service performed by the individual county agricultural agents. In the 11 counties where there were agents prior to 1914, only two counties dropped the service for a short time owing to a shortage of funds. In a quarter-century the extension service within counties has been put to popular vote on 30 occasions. A few of the early tallies were unfavorable. The attitude has changed since early days as rural families became better acquainted with the service.

In crops, livestock, insect and disease emergencies there have been periods in the quarter-century when the county agricultural agents have battled new problems and handled these tasks with a high degree of efficiency.

The war in 1917 was a typical period. Within a year after the United States entered the war, 41 agents and seven assistants were added to staffs in various counties, extending the service to 68 counties served. Food needs were recognized. Land and labor surveys were conducted, fertilizers distributed, land cleared. The Boys' Working Reserve was put to use in helping produce, harvest and market farm supplies. Agents listed available seed supplies, especially seed corn. Even up into harvest the emergency work continued.

In one county, Wayne, the threshermen were organized and managed to save at least 7,500 extra bushels of grain by care in threshing. In Tuscola county the agent's office helped issue sugar for canning purposes in county food administration.

When the war emergency passed, the adding machines indicated the county agricultural agent activities of emergency nature included:

No. of farmers assisted in securing or locating seed.....	23,360
No. of bushels of seed secured or located for farmers.....	153,235
No. additional acres seeded as result of special production campaign	173,587
Estimated total production on additional acres in bushels.....	2,006,294
No. bushels of seed corn saved for 1919 planting.....	169,454
No. persons assisted with home garden work.....	7,853
No. applications for farm labor.....	5,197
No. of persons applying for work.....	3,176
No. men and boys placed on farms.....	3,476
No. of farmers assisted in securing fertilizer.....	652
Tons of fertilizer secured.....	19,382
No. of sheep placed on farms.....	2,454
Increased number of livestock on farms:	
Cattle	2,220
Hogs	4,241
Sheep	6,925
Poultry	6,198
Increase of acreage of farm crops due to use of tractor.....	12,110

Since those days, other emergencies have occurred and normal contributions for a better Michigan agriculture have been added to the record.

FARMERS' ASSOCIATIONS

In 1920 the reports of 60 agents show that there were 236 marketing associations formed with a total membership of approximately 30,000 farmers. These new associations immediately began doing business. In a year's time more than five million dollars worth of business was transacted, saving members an estimated \$300,000. By November 1921, the associations numbered 481 and were doing a \$14,500,000 annual business, of which 10 percent represented savings to farmer members numbering 60,000.

Farm credit assistance, storage expansion, seed growers' associations, cooperative creameries were typical of organization assistance in which county agricultural agents worked. Peppermint farming in Clinton county was given aid for expansion in 1934, the AAA wheat adjustment program required time and thought in Jackson, Eaton and other counties in 1933, and the corn and hog program in 1935 affected many southern Michigan counties. Chinch bugs, army worms, grasshoppers and corn borers have popped up and spread alarmingly at various times, with farmers relying most immediately on their county agents for advice and assistance.

The job is not complete. New problems appear, according to the county agricultural agents, the farmers they are serving, and the extension service leaders in Michigan. Most vital are such problems as proper land use and conservation of soil and resources, better land use, improved marketing, better methods for distribution of information and work with Michigan youth. So a quarter-century closes, yet merely opens out into a new period of service.

DAIRY HUSBANDRY

Development of Michigan dairying as a profit-paying industry, rather than a supplementary aid to rural table fare, traces back to one of the college's early farmers' institutes held at Grass Lake in the winter of 1892-93. It was at that institute that some of the state's dairymen saw the first demonstration of the Babcock test. This test in later years, through the medium of the Dairy Herd Improvement association, was to place Michigan herds near the top of the nation's butterfat producers list.

Sufficient interest was aroused by the first demonstration to warrant a more extensive program of dairy extension work. A teacher, who had gained practical knowledge of his subject as a dairy farmer, was chosen to head the college's first extension course designed to benefit the dairy industry. With the help of one assistant more than 257 farmer meetings were addressed during the first three years of the course.

Tangible results from these meetings can still be seen in the form of an age-yellowed handbill (now in the possession of A. C. Baltzer, extension specialist in dairy husbandry) calling interested cattle breeders to attend a meeting in Newaygo county. Organization of the first cow-testing association in the United States was the result of this meeting. The pioneer association still exists as the "Newaygo Number One" unit in the Dairy Herd Improvement association.

BULL ASSOCIATIONS

The idea of improving Michigan cattle through organization of bull associations was added to the extension program in 1908. Within five months after the beginning of the work 10 such cooperative organizations had been formed, one of which still exists. The Leer-Alpena County Guernsey Bull association, first of its kind organized in the country, is still active.

Development of cow-testing associations and fostering of bull associations continued as the main phase of dairy extension work until 1921. In that year the first of the dairy-alfalfa campaigns, which have resulted in increasing Michigan's alfalfa acreage from 80,000 acres listed in the 1920 census to more than a million and a quarter acres, was begun. These campaigns were sponsored in cooperation with the College Farm Crops Department.

Increased interest in cow-testing organizations followed close on the heels of the alfalfa drives. The number of such associations increased from eight to 75 in the two-year period, 1922 to 1924. At present 29,000 cows from Michigan herds are included in the state's 76 active organizations.

Belief that more clearly-defined objectives were needed by those associations led to a recommendation at the American Dairy Science association meeting held on the campus in 1927, that the organization name be changed from cow-testing to dairy herd improvement. At the same time a set of rules, which are still followed as the standard rules for the conduct of the nation's dairy testing associations, was adopted.

Results achieved from the cow-testing associations can best be illustrated in terms of increased efficiency of production. In the first asso-

ciation year, records show the butterfat yield of Newaygo county cows on test to have been 215 pounds. That was in 1906. The summary of 9,864 cows under test in Michigan during 1937 shows a yield of 339 pounds fat and 8,110 pounds of milk. Additional figures, taken from census reports of 1910 and 1935, show a 40-pound butterfat increase for the average Michigan cow, from 150 to 190 pounds per year.

RECORD OF PERFORMANCE RECOGNIZED

Further aid and encouragement to Michigan dairymen came through a college sponsored project wherein certain production requirements were recommended in order to have cows qualify for recognition and to develop the proving of sires. In April 1926, the first Record of Per-



One of several points emphasized by dairy extension specialists is that good pasture and good cows are an excellent combination in producing milk economically.

formance certificate resulting from this project was issued by the dairy department to E. B. Loehne. Volume one of the record of performance was issued by the dairy extension service carrying records on cows completing a year's test between Sept. 30, 1923, and the same date, 1924. The volume was the first attempt of its kind to recognize dairy cattle by a record of performance and to supply a list of proved herd sires. R. O. P. records of 1,342 cows and information on 11 proved Holstein, 13 proved Jersey and one proved Guernsey sires were included in the first volume. Two later editions have been published.

Development of the Holstein herd test plan in 1927 offered breeders of purebred Holsteins a testing program recognized by the Holstein-Friesian association of America. Since that date other herd testing plans have been adopted nationally by other major dairy breed associations.

In September 1930, a celebration was held at the college in recognition of the fact that Michigan had joined Maine and North Carolina as the only three states in the union on the federal accredited list for freedom from bovine tuberculosis. In the nine-year period which began in 1921, about 1,500,000 cattle were tested in Michigan and a total of 58,324 reactors to tuberculin tests were removed from the state's 185,000 herds. In addition to the profits accruing to the industry through removal of this menace it has been of inestimable value in ridding the public of a health menace which has always been both dangerous and bothersome.

Extension service in the dairy industry in the past 25 years has done much towards developing the business from a farmers' sideline to a thriving industry that is now a main artery in the state's economic system.

FARM CROPS

Sixty-five years ago, in 1875, when Michigan Agricultural College was an 18-year-old pioneer in the field of agricultural education, occurred the first formal farm crops extension activity conducted by the institution.

Because he felt that Michigan farmers did not understand the aims and functions of their agricultural college, Dr. R. C. Kedzie, professor of chemistry, proposed a series of farmers' institutes in which members of the faculty and of the State Board of Agriculture would participate with leading farmers in each community.

Material from the classic experiments of Lawes and Gilbert at Rothamsted, England, furnished Dr. William J. Beal, professor of botany, who covered the field of farm crops at these first institutes, with a starting point. But even in those early days Beal realized that any permanent system of agriculture in Michigan must depend greatly on grass and forage crops. And he also realized that very little actual knowledge was available in that field.

Much of the time of these early meetings consequently was devoted to discussions of forage crops, haymaking, root crops, corn culture and the maintenance and improvement of soil fertility. About that time, too, corn silage began to interest leaders in agriculture, and many were the shrewd arguments put forth concerning its merits and demerits. Ensiling forage crops, which the modern farmer usually believes is a recent discovery, was not unknown to Michigan farmers of that era and 65 years ago an occasional venturesome farmer was testing the possibility of making usable silage from red clover.

"... SANDY SOILS FOR FARMING ..."

Though the earliest institutes were held in the southern counties like Lenawee, Macomb, Allegan and Van Buren, problems of northern Michigan's light land farmers were not overlooked. In fact, not everyone considered the sandy land worker at a disadvantage. One Alcona county farmer, at an institute in 1888, insisted that "God made sandy soils for farming and clay soils for brick making."

Awareness of grass problems often brought mention of quack grass (then called couch grass) as a plausible feed crop if it could be kept



Hay making demonstrations were a part of the "alfalfa campaigns" staged by crops specialists.

under control. Although little was known of alfalfa at that early date the editor of the Michigan Farmer in 1845 did send a packet of the seed to a French farmer in Monroe county and the latter was fairly successful in producing a good crop of forage.

But alfalfa as a paying Michigan crop had to wait until 1921 for recognition. Experiments as far back as 1874 by Beal on alfalfa led him to the conclusion that "alfalfa does not promise much for Michigan and grass is still king of the earth." Most promising livestock feeds in Michigan, Beal believed, would always be timothy, red top, tall oat grass, meadow fescue and June grass (Kentucky bluegrass).

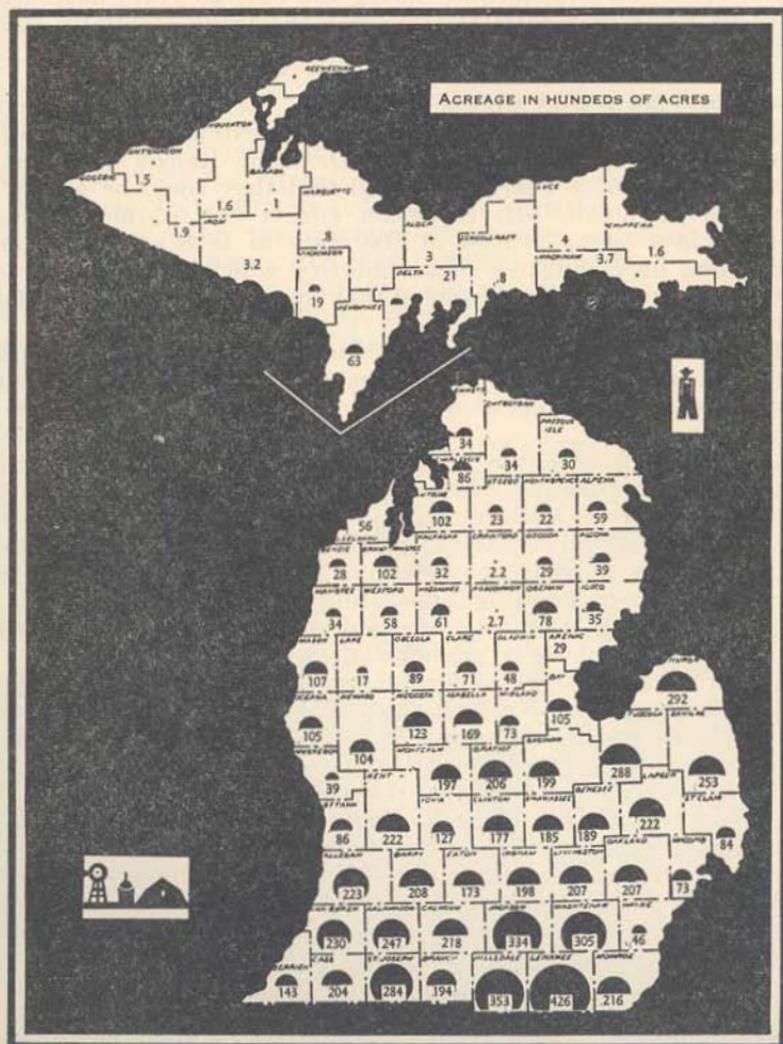
Although 1921, the year when Michigan's widely known alfalfa-dairy campaigns started, dates the real beginning of alfalfa progress, the starting blocks for those campaigns were laid down in 1909 when A. R. Potts, newly appointed field agent in soils and crops, began organizing alfalfa clubs of 10 or more members, each of whom was to grow at least one acre of the forage. Potts visited each club and assisted in planting and caring for the crop.

Then in 1921, under the careful planning of J. F. Cox, head of the Farm Crops Department and O. E. Reed, head of the Dairy Husbandry Department, came the dairy-alfalfa drives, the first of which was held in Allegan county where Alfred Bentall was county agent. Meetings were located conveniently in cow barns or hay fields so that neighboring farmers could drop their work for a few hours, attend the meetings and then go back to their own fields.

Held in every important agricultural county in the state, these meetings met with such success that they generally were repeated two or three times and in 1924 were supplemented by hay curing demonstrations, marl digging, soil testing and home grown seed production demonstrations. The latter phase of the work was helped materially

through introduction by the Experiment Station in 1920 of Hardigan alfalfa, a better seed-producing variety especially well-adapted to Michigan soil and weather conditions. Alcona county farmers, working with their agent, Casper Blumer, have been particularly active in alfalfa seed production, with Monroe, Saginaw, Tuscola, Huron, Ogemaw, and Cheboygan also developing as seed-growing centers.

In the early days of the alfalfa campaigns much of the seed was shipped in from the northwestern part of the United States. Because of the demand for assurance as to genuineness, cooperative seed distributing agencies were developed in Michigan and in several other



This map shows the distribution of alfalfa in Michigan in 1935—just 14 years after the beginning of the "alfalfa campaign".

states. So closely did the extension service cooperate with the early developments in the move for seed of guaranteed variety and adaptation that seven former staff members became and are today leaders in cooperative seed distributing agencies of national importance.

ALFALFA ACREAGE INCREASES

Significance of these early programs to Michigan farmers is demonstrated by the 1939 figures which show Michigan to have led the country in alfalfa production that year with 1,200,000 acres, an increase from 74,000 in 1919. In the same span of years Michigan has become a leading, in some years the leading, alfalfa seed producing state and the total Michigan farm income during the past 20 years has been enhanced by more than \$100,000,000 when the value of alfalfa actually grown is compared with that of a similar acreage of the hay crops which it has replaced.

As it has been with alfalfa, so it has been with many another Michigan crop initiated or improved by the extension service of the farm crops department. Back in 1890 Dr. R. C. Kedzie imported several varieties of sugar beets and found that they could be grown successfully in Michigan. His extension efforts led to the building of Michigan's first sugar factory at Bay City in 1898 and the eventual establishment of Michigan's sugar industry which today is a grower-manufacturer cooperative business that supplies a major portion of the state's sugar.

First appointed extension lecturer for the college was C. D. Smith. He began work July 1, 1899, and appeared for many years at farmers' institutes, picnics and special meetings to talk about sugar beets and soil improvement.

Then in March 1904, the Michigan Crop Improvement Association was organized to sponsor corn shows and develop "more and better corn for Michigan." Leading varieties of the day were Hathaway, Pride of the North, Hackberry, Mortgage Lifter and Reids Yellow Dent which was the parent variety of today's Duncan and Pickett corn. A boy's corn growing association was organized in 1911 and farmers' institutes of that time stressed adaptation of varieties, proper cultural practices and use of commercial fertilizers.

An interesting sidelight on corn experimentation of the time appears in the experiment records which show that Beal did the first work on hybrid corn more than 50 years ago. Making a cross between two open-pollinated lines rather than between inbred lines, as is the case today, Beal called his resultant hybrid the "bouyancy of the cross." Though he advocated this method of producing superior seed at Farmers' Institutes in Traverse City among other places Beal was a busy man and it remained for later breeders, improved technique and a more closely coordinated extension service to develop a hybrid corn program which is today having a direct influence on fully 65 percent of the crops of the nation's leading corn states.

MICHIGAN EXPERIMENT ASSOCIATION

Appointment in 1906 of Frank A. Spragg as first full-time plant breeder at any American agricultural college brought about the reorganization of the Michigan Corn Growers Association in 1911 into

the Michigan Experiment Association whose main objectives were to test and distribute new varieties of seeds resulting from plant breeding work. With the growing demand for these new varieties coupled to the problem of guaranteeing seed as to genuineness of variety, purity, vigor and vitality the Michigan Experiment Association became more than a research organization.

Guided by the Extension Service it took on the function of inspecting the growing crops of new varieties and again the harvested seed, maintaining the pedigree of each lot so it might be traced to the original foundation stock developed by the college plant breeders, and attesting to the information gained from this pedigree and inspection system by certifying the seed.

Change in function brought a change in name so that by 1916 the association became the Michigan Crop Improvement Association with John Nicolson, extension specialist in farm crops, its first secretary. Functioning for the past 24 years as an arm of the extension service, the association's policies have been formed jointly by farmers and college workers in the interest of developing, proving and discriminating quality seed of adapted and superior varieties of crops. Serving, on a statewide basis, the interests of growers of corn, wheat, oats, rye, barley, field beans, soybeans, alfalfa, grass seed and potatoes, this association has seen Michigan acreage devoted to superior varieties increase to such an extent that 25 percent is the lowest of any crops while others range all the way to a 95 percent of the recommended kinds.



Extension work in crops has included work with potato growers in promoting the growing of disease-free seed stock.

A concerted program of potato improvement began at the college with the appointment of C. W. Waid, in the Horticultural Department as potato specialist in 1914. Transfer of potatoes to the Farm Crops Department in 1922 placed seed supervision in the hands of H. C. Moore, present potato specialist, who came to the college in 1917, and the work was carried on through the crop improvement association from then on.

Advent of seed certification standardized the great bulk of the Michigan potato crop on Russet Rurals for late and Irish Cobblers for early harvesting, and at the same time reduced considerably the 80 percent mixed shipments which had left Michigan in carload lots at lower prices prior to 1920. Introduction of the Katahdin, Chippewa and Pontiac varieties, improvements both in productive characteristics and culinary qualities, resulted from cooperative breeding work carried on by the Michigan Experiment Station and United States Department of Agriculture. These varieties, plus an intensive educational program sponsored by the Extension Service, have improved both the reputation and price of Michigan potatoes in state and out-of-state consuming centers.

Potato production both in quality and yield has been enhanced through the medium of county, district and state shows, organization in 1922 of the 300-bushel club, recognition of successful growing achievements and the inauguration in 1927 of the premier growers contest which recognizes good yields and skill in commercial grading and exhibiting of quality potatoes. Since the advent of the extension program Michigan potato growers have turned out a 25 percent greater yield per acre than a generation ago.

BEET SPECIALIST APPOINTED

Despite Kedzie's early sugar beet work the industry in Michigan did not begin to really take hold until 1927 when C. R. Oviatt, a graduate of the college and experienced grower at Bay City, was appointed sugar beet specialist. After using his first two years encouraging use of productive methods to improve both tonnage and extractable sugar quality, Oviatt began in 1929 to direct his efforts toward working out a contractual relationship between growers and processors. With support from both elements of the industry this resulted in the adoption of the cooperative contract by which terms growers and processors shared alike in net sales returns from sugar, pulp and molasses. Development of a close relationship among processors, growers organization and the research and educational activities of the college and the United States Department of Agriculture plus the advantage of generally good economic conditions has brought Michigan's beet acreage to its highest level.

It was in 1929, too, that cooperative research on Michigan pasture problems was begun with the United States Department of Agriculture which pointed out the advantages of alfalfa and grass mixtures for Michigan's dry summers. And Beal's ghost must have grinned amusedly if it noticed that, despite his lament in 1875 over the lack of information concerning grasses and grassland management, it was not until 1936 that C. M. Harrison was appointed to devote his time to pasture improvement work, dividing his efforts equally between research and extension. Earlier discoveries had shown the English system of pas-

ture management, which involves use of liberal phosphate fertilization, close grazing and use of wild white clover as a source of both livestock feed and nitrogen for associated grasses, was applicable to moisture retentive soils especially in the north. Much of Harrison's work has been devoted to the drier soils.

This has already borne fruit. Recent surveys show about 50 percent of Michigan's herd feeds during the summer dry period on alfalfa or alfalfa-grass. Dairy herd improvement association reports indicate a definite trend on the part of dairymen to provide better pasture throughout the season with alfalfa and brome grass providing self-harvested feed from early May through September, supplemented by second and third cutting alfalfa, sudan grass as a one-season summer pasture, and rye for early spring and fall. Natural June grass seedings are used advantageously in spring and early summer and for livestock where intensive grazing management is less important than with dairy cattle.

In conclusion, it may be pointed out that the caliber of men chosen by the extension service to carry on its farm crops program has been all-important to its success. Because of the high quality of their services demand for these men, in other lines of work for which extension experience has qualified them, has been constant. Of the 17 who, since 1920, have gone into other activities, five are in cooperative and commercial seed marketing, two are in federal service, two are managers of large farms and three are in other responsible extension activities. The five now at the College include two half-time and three full-time workers.

FARM MANAGEMENT

Farming and farm management as a coordinated business rather than a haphazard enterprise received little academic encouragement and virtually no scientific research in the nation's agricultural colleges and experiment stations prior to 1900.

Earliest forerunner of the present federal Bureau of Agricultural Economics came into being July 1, 1905, when an Office of Farm Management was set up under its own appropriation within the Bureau of Plant Industry of the United States Department of Agriculture. By 1910 a field study and demonstration section was incorporated into the Farm Management Office and more and more emphasis was placed on net returns from the whole farm at the end of the year at the basis of economic measurement.

C. B. Smith, a graduate of Michigan Agricultural College in 1894, was the pioneer farm management specialist in the Michigan section. In line with the department's staff work of running farm surveys to determine the most profitable types of farming for various sections of the country, Smith made early surveys in Lenawee county for the year 1911. Partially because of his work in this field Smith was granted an honorary doctor of science degree from the college in 1917.

One year later, on Oct. 28, 1912, the first department of Farm Management Field-Studies and Demonstrations was organized at Michigan Agricultural College with Dr. Eben Mumford as state leader. Activities

of this department were cooperatively conducted by the College and the federal Department of Agriculture, and with its organization began Michigan's county agent system.

County agriculturists working under Mumford divided their time between farm management investigations and agricultural extension activities placing heavy emphasis on the study of the farm as a unit and its inter-relation with the community in the agricultural development of both.

Utilizing their own preliminary surveys, county and state reports plus all available sources of information, Michigan's first county agents began activities by making an inventory of a county's agricultural conditions and prospects before offering direct aid to farmers along such lines as soil problems, specific farm enterprises, setting up of farm business as a unit or an organization of farm enterprises and the study of the community in its relation to the farm, the farmer and successful agriculture.

With an initial appointment of a district supervisor employed under farm management extension funds, Nov. 1, 1912, farm management as an active college program was well launched. The first year activities were largely of an investigational nature in the extension service. By 1913-14, through a shift of responsibilities, more time was devoted to farm management investigation in counties having agricultural agents.

In an attempt to induce both agricultural agents and farmers to think, not only in terms of corn, alfalfa, apples and other individual crops, but of all farm enterprises taken as a unit, schools were instituted for study by farm management survey methods. Consideration of cost or producing crops, investments needed in various factors of farming and the proportional relationship of such factors as land, buildings, livestock, machinery and labor formed the basis of these first studies and from them developed the first supervised system of cost accounting for farmers.

FARM MANAGEMENT SURVEYS

By 1915 farm management surveys were carried on in six counties—Newaygo, Alpena, Saginaw, Branch, Kent and Wexford. Between 50 and 100 farms were studied in each county. After complete financial records for the year had been obtained and analyzed for each farmer a county report was prepared and cooperating farmers were thereby furnished with a basis of comparison to better judge the quality of their own performance. Benefits derived from these first reports were two-fold; the more progressive farmers became more interested, many even asking for account-keeping information that would increase accuracy and county agents involved in the studies were enabled to contact farmers they had not reached before.

Michigan's first farm account book was devised in 1915-16 in an effort to familiarize more farmers with the method of analyzing their own farm business. County agents distributed a total of 970 books to farmers that year, at the same time offering personal assistance.

Iron county was added to the list of counties already in the survey group and interest was promoted through the medium of field meetings and short course instruction at the college.

In 1917 the program of work was expanded. Surveys were con-

perience the College gradually improved the account books and developed a credit statement to be used by farmers.

Programs of general educational nature were continued during the next few years. January 1, 1921, the college appointed a professor in charge of the College's first Farm Management Department organized as a regular college department.

Two cost accounting routes were taken over from the Dairy Department and two additional routes were established. With the program expansion came a concentration of farm management work along three definite lines: farm accounting, farm credit, and price movements and their effects on agriculture. More books were issued, follow-up work in farm accounting courses was introduced in Smith-Hughes schools. Farmers, county agents and rural bankers were furnished with facts to show farm credit needs and returns from the several classes of farm investments and expenditures.

When the agricultural post-war depression began to set in farmers in 1920-22 became more interested in prices and in a regular service dealing with price trends and factors influencing price movements was sent to all county agents. Many farmers also registered their desire to be placed on the Washington mailing list for crop and market reports.

A lull in farm management activities, following the disbanding of the department in 1922, carried through until the organization of a new department in 1928.

Streamlining and revamping of the department brought promotion that has seen farm account projects established in 76 of Michigan's 83 counties with about one percent of all Michigan farmers enrolled during the past year.

FARM ACCOUNTS KEPT

More and more Michigan farmers are keeping accurate records of their farm business in the Michigan Farm Account Book obtained from the college or the county agent. Records include a detailed inventory of all items, a complete record of all financial transactions pertaining to the farm, a record of produce used by the farm family, production records, breeding records and a net worth statement. It became increasingly necessary to devote more time to farm account education. With that end in view farm account schools are now conducted at the beginning of each year in each county in the state. Instruction is given in recording a complete farm inventory. Later, individual cooperator's inventories are reviewed by extension specialists and at the end of the year the farmer is again met by appointment and aided in recording his ending inventory and checking his book for accuracy and thoroughness. The ending inventory is transferred to a new book as the beginning inventory for the ensuing year and the book is summarized for every farmer who so desires.

Working on the theory that comparison brings better results farm management specialists now draw up detailed farm business analyses for different type farm areas in the state and turn them over to farm account project cooperators at the end of the year. Report figures are so arranged that individual cooperators can compare their averages with those of other farms of the same type and size as well as with the averages of more, or less, successful farmers. Reports are inter-

preted by extension specialists or county agents and an effort is made to suggest changes that will remedy weak points revealed through the comparison.

Specialists in farm management extension work do not contend that mere keeping of account books will insure profitable farming. That is the reason that analyses reports are necessary.

The farm management extension service, in the past quarter-century, has established itself as an integral part of the college extension program. But proof that department members are casting an eye towards the future is evident in the form of the national 4-H club farm accounting contest which they sponsor and in the increasing effort being made to have farmers adjust their production, when possible, in accordance with the supply and demand situation within the state and the nation.

And now, with farm accounting problems becoming more a matter of routine than innovation department heads and their staffs are scanning farm leases. The project is still in a growing stage but a rather complete range of the various types of lease agreements is now available to interested farmers.

FOODS AND NUTRITION

Not to be outdone by their male co-workers, those on the distaff side took food and nutrition extension service work into the home as early as 1912 when college extension schools were held both for farmers and their wives.

Demonstrations on methods of food preparation and talks on food values were given. Protein foods seemed to hold the center of the stage so far as furthering better nutrition was concerned, a tendency characteristic of that period in the science of nutrition.

A specialist was employed in 1914 and the scope of activities increased to include lectures to students at county normal institutions and canning demonstrations. Rural school hot lunches were also suggested as community projects.

By 1916 extension work in foods and nutrition was well-established, contacts having been made through the state federation of women's clubs, state nurses' association and with home economics teachers. Cooperative meetings were held with the national Potato Growers' association.

An extra service during the formulative period of the service was the bureau of information. Special diets were planned for individuals in cooperation with their physicians. A 1916 notation indicates that 50 percent of these were for diabetics.

Coming of the war years accompanied by an under-supply of food-stuffs changed the aims of extension service nutrition workers so that conservation of food, helps in the use of food substitutes and promotion of health became the most stressed projects. Volunteer workers were enrolled and a school for emergency work was held at the College attended by 200 women who had previously had at least two year's home economics training.

One outcome of the war years' program was a pledge signed by

many Michigan housewives who promised to buy food in season, avoid the purchase of expensive foods low in nutrition value, encourage a wider use of skim milk, cottage cheese and sour milk, to cook vegetables in their jackets and to use left-over foods. A commentary from the Detroit garbage collection department reports much less garbage in 1917.

DEMONSTRATIONS

With the addition, in 1918, of three food specialists and a health specialist, the food phase of the extension program broadened. Demonstrations were given all over the state on uses of potatoes and wheat and sugar substitutes. Classes on feeding the pre-school child, care of the teeth and home sanitation including care of milk and other foods in the home were initiated by the health specialist.

During the influenza epidemic of the early twenties, foods and nutrition workers were instrumental in setting up and supervising diet kitchens.

In 1920 community homemakers' classes were started and by the



A part of the program of the home economics extension program has been the promotion of better living through use of home-produced products. One of the more recent projects has included the preparation of meat products for preservation in the cold storage locker.

following year project emphasis had shifted from cooking and distribution of recipes to a more detailed inclusion of the latest nutrition knowledge. Children's clinics were held, rural school teachers were urged and aided in teaching values of proper nutrition and, through the cooperation of the county school commissioners, nutrition programs were inaugurated in many of the state's schools.

During 1923 some work was done with foreign groups on the "American Manner" of food preparation. Happy, unhurried meals at regular intervals were emphasized as were the effects of simple psychology on all aspects of home life.

With the beginning of the local leader method of relaying classes in 1925, enrollments increased and better organization helped stabilize the work and make it more effective in the community.

In 1929 such goals were set up as the attainment of a high standard of health and nutrition and the overcoming of avoidable illnesses. In line with reaching this goal, food demonstrations were included as part of the lessons to be relayed and 2,710 housewives made improvements in vegetable cookery while 2,186 families used more milk during the first year of the project.

Owing to the impossibility of reaching a majority of the state's population through the medium of the small staff of extension workers the suggestion was made in 1930 that each person pass on some bit of information to at least two others. As a result 16,019 people, not group members, made at least one change in everyday food habits.

OTHER PROJECTS

Other projects introduced during the late twenties included result demonstrations in special feeding problems and a course in corrective and preventive diets.

Several cooperative projects carried on with other college departments engaged in extension work from 1930 to 1935 resulted in special State Fair exhibits, sponsorship of a nutrition program on a tourist-resort train, demonstrations on the use of dairy products given at each town on the itinerary of the dairy profits-alfalfa train, various radio talks and addresses and sponsorship of several foods and nutrition exhibits during the college's annual Farmers' Week.

Both inter-college department and college-state department cooperation was necessitated during the depression years of the early thirties. The home demonstration agents and the food specialists assisted state and county welfare agencies during the period and the specialist was loaned to the State Relief commission to survey the methods of food relief in use in the state.

Recommendations made subsequent to the survey resulted within three months in the appointment of a nutritionist to secure food relief; institution of a standard state-wide plan of relief; discontinuation of the commissary system; training of case workers in nutrition, and the setting up of classes for homemakers on relief.

When, in June of 1933, the Relief commission began sponsoring community canning projects, foods and nutrition extensionists again aided in choosing equipment and in giving demonstrations in all districts to supervisors of canning centers. Later, the specialist acted as adviser to the canning supervisor employed by the commission.

During the same period projects designed to increase home food production and to encourage the manufacture of such foods as bread, cheese and baked goods on the farm were begun. Through the use of yearly food plans records from 10 counties showed an average of 67.3 percent of farm families' food was home-produced. At the same time, in an effort to improve home and community morale, extension workers sponsored a project which offered suggestions for home parties and for serving Michigan refreshments. Various communities reported 1,321 such gatherings as a direct result of the latter project.

STUDY OF FOOD-FADS

In 1935 home demonstration agent counties began to develop programs based on an analysis of the needs of various communities. These plans resulted in a composite consumer buying project and a study of present day food-fads, modern meal planning, feeding the convalescent, table service and buffet meals.

Since the keeping of the first records in the foods and extension portion of the extension service an increase of 4,426 enrollees has been made. First records, made in 1916, show 1,561 enrolled members while in 1934 5,987 names were on the member book. A total number of 18,866 persons were reached through the extension service in foods and nutrition the same year.

Although changes in emphasis will undoubtedly be made in programs, the work of this phase of the extension service will in the future operate on the same ten-point program which has governed it in the past five years, namely:

To keep each person as near actual buoyant health as possible and free from any ailment due to family nutrition or poor hygienic habits; to aid all members in planning balanced meals in accordance with their budget; to encourage simple and attractively served meals in every home; to improve food preparation methods; to initiate modern consumer buying methods in purchasing food; to induce farm families to plan for a yearly supply of home-produced food insofar as conditions allow; to encourage every farm family to can and store a portion of the winter food supply; to aid in the application of safe, modern methods of canning in every home; to offer nutrition instruction to both boys and girls in all grades of rural schools, and to establish well-planned meals at all community gatherings.

FORESTRY

Although official inclusion of forestry as part of the College Extension Division's program did not occur until 1912, field work had been carried on by the forestry department since 1908, when the State Board of Agriculture passed a ruling permitting the department to render free assistance to farmers and land-owners in management and marketing of forest products.

In 1907 the practice of selling surplus nursery stock at cost price was innovated and in the following year 51,861 seedlings were distributed in that manner. An additional 3,377 trees were given to state institutions while 26,736 trees were planted on the college farms.

During the same year a recommendation that the college forestry department establish model plantations planted to various species on different soils and sites was made and partially carried out. Cooperating parties furnished the land and the trees were donated by the college.

Extension activity by the department took the form of a circular letter in 1909 offering assistance in woodlot management. Ninety-three woodlots in 37 counties were examined and a total state sale of 250,730 trees, made that year, is partially attributed to the extension program.

Pressed for time, department staff members did very little forestry field work in 1910 and 1911. In 1912, however, a circular titled "The Michigan Woodlot" was distributed and forest survey projects were undertaken in a few townships. In April of that year the first full-time extension representative in forestry was employed and a program of woodlot management, forest tree, windbreak and shade planting was begun. The work was conducted by personal assistance and farm visitation.

SCHOOL PLANTINGS ENCOURAGED

In the spring of 1913, 140 Michigan schools took advantage of the service's offer of free shade trees for Arbor Day planting and in 1914 permission was obtained from the State Board to donate ash and maple trees, four to six feet tall, to schools for similar planting.



Extension specialists in forestry have promoted more windbreaks on Michigan farms. Not only have these windbreaks provided more comfort for farmers and their families but wind erosion has been checked.

Program expansion brought the sub-projects of sand dune fixation and demonstrations on the care and repair of shade tree wounds into the extension program in 1916. Another important activity was the encouraging of planting of basket willow so that imported products, stopped by the war in Europe, might be replaced by home-grown timber.

Appointment of a new extension forester resulted in the inclusion of a maple syrup project organized to encourage better and more economical production. At this time demonstrations and lecture meetings began to replace the old system of personal and individual attention. As a result the new specialist conducted 20 demonstrations and 10 lecture meetings in addition to making 169 farm visits his first year.

During the year 1918-19 the extension forester was granted a leave of absence for duty on the war front, and extension service was carried on by the college department. Main activities consisted of cooperation with the federal fuel administrator in spotting available quantities of firewood and the opening of municipal forests to supply needy towns and communities with a continuous supply of fuel wood.

Return of the specialist in 1919 marked the resumption of the forestry extension program which continued along earlier lines until Dec. 31, 1920, when the specialist resigned.

Forestry extension services lagged until 1925 when the Clark-McNary appropriation for educational work in farm forestry made money available for the appointment of another forestry specialist.

Since the Clark-McNary law provided for cooperative effort in educational forestry between the federal government, the land grant colleges and the state department of forestry, outlines of anticipated programs were prepared by the college and the state department to shut out possibility of overlapping services.

Extension work under the new specialist was broadened considerably with more emphasis placed on demonstration and illustrated lecture methods in order to reach larger groups. Such projects as community improvement, improvement in maple syrup production methods, preservation of farm timber, timber estimating, farm woodland improvement and boys' and girls' 4-H club forestry work were incorporated in the program after 1925.

1,469,480 TREES DISTRIBUTED IN 1930

Efforts to produce sufficient stock in the college nurseries to allow provision of seedlings and trees to farmers at low cost continued, and 1,469,480 trees were thus distributed in 1930, a sizable increase over the 335,261 figure of 1926.

Attempts to increase youth interest in forestry methods resulted in conduct of the first 4-H Ranger camp at the Dunbar station under supervision of the extension forester in 1930. Drives were launched the same year on forest fire protection and tree planting. A cooperative exhibit train was operated between Kalamazoo and Petoskey to further the educational phase of the program.

It was also in 1930 that training of high school students in the fundamentals of conservation was started with the establishment of 12 school forests. Schools were assisted by various agencies to secure land for forestry purposes and a later legislative action allowed the conservation department to sell lands to schools, towns, townships

and counties for the same purpose. Each participating school has received, free, a few thousand seedlings a year from the conservation department's forestry division for school forest planting.

Following earlier lines of work in blow sand, control attempts were made in 1932 and 1933 to control moving dunes. In some dune areas brush was spread over moving areas for stabilization, followed by planting cuttings of poplar and willow and pine seedlings.

In 1936 a new specialist was appointed with a resultant further broadening of the forestry program. New projects introduced have included the planting of street shade trees, farm woodlot tools, sugar bush management, use of portable sawmills and methods of preservative treatments of timber.

With the adoption of the agricultural adjustment program, started in 1936 and revamped in 1938, came nation-wide interest in tree planting and woodland improvement and forest tree planting in different areas of the state.

Most of the specialist's time is still being devoted to such activities but upon completion of the program it is expected that a renewal of former projects will be attempted on a larger scale and will be coupled with the introduction of several new, much-needed programs designed to conserve the state's timber resources while at the same time helping rural land-owners to realize profits on hitherto unused woodlots.

HOME DEMONSTRATION WORK

Home demonstration work developed from girl's club work, although it was not until about 1913 or 1914 that the work with farm women assumed any very substantial proportions. It was a natural matter when the girl's club agent visited the home of a club girl and taught her how to can her vegetables and fruit products to make the acquaintance of the mother and to discuss with her other matters of the home.

In the year 1914, "Cooperative Extension Work in Agriculture and Home Economics" was provided for by Congress as a joint enterprise between the Land Grant Colleges and the United States Department of Agriculture. Agricultural Extension Work was defined in the Act as "instruction and practical demonstrations in agriculture and home economics." Accordingly, in that year, the State Board of Agriculture appointed Miss Paulina Raven a home economics extension worker. The work consisted of canning demonstrations in the summer and extension schools in home economics during the winter. The employment of special county workers in home economics was begun in 1915 with the employment of Ilene Bailey as home demonstration agent in St. Joseph county.

The entrance of the United States into the World War early in 1917 created an emergency food situation which greatly increased the need for more home economics extension workers.

Emergency war funds were made available by the state for the employment of additional staff members and during the years of 1917

and 1918, 24 county home demonstration agents were employed. September 1, 1917, Miss Edna Smith was appointed the first state leader of home demonstration agents in Michigan.

AGENT STAFF REDUCED AFTER 1920

The post-war depression and the elimination of war emergency funds greatly reduced the staff of home agents. However, the staff of home economics specialists was maintained, and with the use of the local leader plan of teaching, the number of women enrolled in the various Home Economics projects was not materially decreased. Mrs. Louise H. Campbell became state leader of home demonstration agents in 1920 which position she held until her death in 1930.

In June 1935, the Bankhead-Jones Law became effective, making additional federal funds available for extension work. This made possible the organization of home economics extension work on a district and county basis.

In the year 1939, 18 home demonstration agents were serving 36 counties in the lower peninsula. The plan proposes that as more funds for extension work become available, additional home demonstration agents will be employed until each of the larger counties will each have an agent and the smaller counties will be grouped into two or three with one home agent in charge.

In 1939, the organized groups in the projects of child care and parent education, clothing, home furnishing, home management and nutrition numbered 1,569 with 2,952 leader meetings each month for training in county meetings. The group members totaled 19,433. These enrolled members reported that they had relayed the information to 47,947 others who asked for help with their home problems.

Outside of the enrolled groups, home economics specialists reported an attendance of 11,823 at individual demonstration meetings. Special meetings held by home demonstration agents were attended by 54,533 farm women. Important home practices were brought into the family living of all the homes represented at these meetings. Farm women are making a serious study of the arts and practices of home making.

HOME FURNISHING

Home furnishings, as an individual unit of the home economics extension work, began with the appointment of a specialist in the field in 1926. Work carried on prior to that date had been in cooperation with home management project workers.

"There is a real need to make every house into a home because the home greatly influences every member of the family." This was the project purpose as the first home furnishings specialist outlined a series of lessons and illustrative material designed to teach homemakers in four counties the use of color and design.

Emphasis in early projects was placed on improving the home through utilization of materials already on hand and that which needed periodical replacement such as paint, wallpaper or curtains. Six subject matter lessons and an achievement day were scheduled in each county.

Demands for work in the project created the need for a second specialist who was appointed in 1928. That year's program consisted of a two-year schedule was the first year's work involving principles of color and design. In the second year problems of construction and selection of inexpensive accessories were studied. Four training meetings and an achievement day were held in counties which had county agricultural agents and two additional meetings were offered in home demonstration agent counties.

MEMBERSHIP DOUBLED

By 1930-31 the membership following this project had more than doubled. Conditions rising out of the economic depression made it necessary for rural families to spend more time in the home and special attention was given by extension workers to aiding homemakers in creating home surroundings that would be attractive and satisfying to members of the family.

Special attention to reconditioning furniture at home was given by extension workers in home furnishings who offered five lessons and an achievement day for the year's work. Leaders set up minimum requirements for each member.

Requirements adopted for the first year's work embodied perfect attendance at local group meetings or the making up of missed work with the project leader; passing on of some phase of the work by each member to at least two outsiders; elimination of some useless articles in member homes; rearrangement of furniture and the making of a new color arrangement using things already in the home, and the making of a rug. Project members meeting the requirements were presented with certificates.

Two special meetings were conducted by the home furnishings specialist that year in cooperation with the home management and the child care extension programs.

In 1935-36 the two-year program was stretched to three years and a project dealing with suitable use of articles and materials on hand was added. Cooperative projects were dropped in 1936 and more emphasis was placed on happier home relationships through application of the principles of decoration to the home and through higher standards of workmanship in the constructive processes.

Thousands of women in the state know by participation that work in this phase of the extension service has been largely conducted through the medium of local-leader projects. County groups enrolled under the supervision of county agricultural or home demonstration agents and then selected two local members to act as project leaders. These leaders attended the training schools conducted by the specialist, received the subject matter and illustrative material for the series and then relayed the lessons to their own groups.

PUBLICITY

Local publicity work relating to the project has been handled by agricultural and demonstration agents while Farmers' Week and other state exhibits are under the supervision of the specialist. Publicity through press releases to Michigan weekly newspapers and through the college station, WKAR, has been directed by the specialist. Under

the auspices of the college home economics department, college officials and the extension service a Farm Women's Week is held the last week in July on the campus with the aim of providing a period of education, recreation and inspiration for Michigan farm women.

In the 13 years of its existence as a separate project home furnishings extension work has reached members in 76 of the state's 83 counties. During the 1936-37 period alone a total of 5,618 members were aided through the service while it is estimated that more than 18,000 non-member women received help. During that year 7,418 new practices, designed to bring extra satisfaction to members in the home, were adopted.

As has been the case in most phases of extension work, emphasis has shifted from the individual to the family and community as a whole. It is anticipated that the trend will continue in that direction until the goal of promoting wholesome family life, through long-time and immediate cooperation of all members of the family, will be reached.

HOME MANAGEMENT

Some work in the home management project of the home economics extension service was done during the 1914-15 season, but no records were kept until the following year when all projects were expanded.

Discussions during the war period centered on better time management by the homekeeper and the elimination of food wastes in the kitchen. Such projects were carried out through the medium of newspaper publicity, posters and lectures.

Home account work was added to the project in 1918. Home demonstration agents conducted work in various counties and for the first time, according to reports, tours and fair exhibits of kitchens and home conveniences were used for demonstration purposes.

The work continued along the same line for several years. In 1921-22, the reports showed 10 kitchens rearranged and equipped, a large number of homemade fireless cookers constructed, 60 pressure cookers purchased and women in 21 counties keeping account books.

In 1922 local leader meetings were coming to the fore in all home economics extension work and this type of carrying on the service was adopted by home management project workers. Early local leaders conducted surveys of lighting methods and home conveniences. Cooperation was forthcoming from the farm management and farm mechanics department and a drive to produce other than kerosene lighting in farm homes was started.

FURNITURE REFINISHING

Furniture refinishing, a project now included in the home furnishing division of the service, was begun in 1923-24 and the following year county groups were organized by county agents and voluntary choice projects were carried on in several counties through use of the local leader plan. Reports made in 1925 indicate that 930 homes improved management practices, 230 kitchens were rearranged and 132 project groups with 1,102 members were organized.

Additional work in home furnishings and landscaping was added

to the program during this period. Local leader training was continued, county achievement days were held, radio talks were made and a Women's Institute was held at the college in July of 1926. In 1927 a home convenience truck was used to extend the work in the counties and during that year 401 kitchens were rearranged. Thirteen hundred and fifty-nine members were enrolled in project groups.



Saving the homemaker time and energy in food preparation has been promoted by specialists in home management. Here is pictured a portion of a cupboard, showing shelves especially constructed for storing ingredients and equipment.

A new phase of work, household economics, was introduced in 1928-29. Methods of saving by planning, things to consider when buying for the home and family budgets formed project themes. Use of electricity was stressed and an equipment exhibit was made during Farmers' Week.

In order to meet depression year needs a cooperative project was

organized in 1933 to help families adjust to low income levels. Home management phases of this project included the stressing of safety in the home and the use of homemade supplies for laundry and cleaning purposes. Work on kitchens and home accounts was continued.

A new theme entered the program in 1933. Five hundred and thirty-one women in two counties enrolled in the "Legal Phases of Home Management" project. All management projects during the year reached a combined total of 14,443 persons.

Rural electrification and home account work was reinstated in 1935 after a lapse of several years. The home management program was also broadened by the use of outlook information for farm families. Discussions dealing with credit for rural homemakers in cooperation with the Farm Credit Administration were held and specialists also worked with the Farm Security administration, the Michigan Safety council and 4-H club camps.

In 1936 projects concentrated on the farm family outlook and on credit were added to leader training projects. Reports that year show that 53 percent of the farm homes had been electrified and that 434 groups were enrolled with a membership of 5,347 in 34 counties. A total of 15,380 people were reached that year through the home management extension services.

Kitchen improvement, use of home accounts and planning of the homemaker's time and energy have formed a vital part of the home management service's program for the 25 years of its existence.

Future work will be continued along such lines with the ultimate goal of enabling each homemaker to realize that homemaking is truly a profession, requiring as much time, training and thought as any other and in helping everyone to appreciate the contribution of fine families and homes to the well-being of the community.

HORTICULTURE

Dame Nature seems to smile kindly on orchard and garden ventures in Michigan, yet the state's fruit and vegetable production has for many years felt the helpful touch of the extension work in horticulture carried on by the Michigan State College staff.

Better orchard management in fertilization and sod culture are direct dividends of extension work spreading out through the state. There have been quality campaigns aimed at and attaining variety standardization, spraying controls have become more scientific and trees have been getting better protection from mice and rabbits. Vegetable gardening for home use and commercial pack has had science brought to it by extension methods. Horticulture thus has been another tie binding producers out in the state to their institution—Michigan State College.

Although horticultural extension work had its beginnings as far back as 1909 it was not until an extension director was appointed following the passing of the Smith-Lever act in 1914 that steps were taken to coordinate the work of the department.

Under the leadership of O. K. White, first appointed extension

horticulturist in 1909, some beginning service in fruit culture practices was offered Michigan farmers.

Lecture work was decreased to give more time for demonstrations the following year with potato spraying demonstrations the major project. In 1911 the first complete yearly plans for horticultural extension service were laid down and meetings were held in orchards where persons interested could be instructed as they observed the actual operations of pruning, grafting, spraying and budding performed before their eyes.

At the time extension work in pomology was started at this institution, virtually no fertilizers were applied to orchard trees in this state except for limited applications here and there of barnyard compost.

NEW PROJECTS

Two new projects in 1922 were orchard fertilization and setting up of a variety standardization list for future plantings. Reports show that 25,000 tons of nitrate fertilizer were used that year as direct and indirect results of the project. Generous use of nitrates and other fertilizers by orchardmen has continued to offer greater yields and real profits.

Twenty years ago virtually all of the orchards of the state were under a clean cultivation system of management. Today a third of the orchard acreage is under a sod system of management and the percentage of sod orchards is increasing. This, too, is a change in orchard management based on the result of college and experiment station research work and the teachings of extension specialists.

In order to solve the pollination problem which bothered orchard men in the late twenties extension men cooperated with fruit growers in placing honey bees in orchards at blossom time. Variety planting and arrangement in new orchards was also stressed to aid cross-pollination.

Twenty-five years ago the commercial apple orchards of the state commonly consisted of some 25 or 30 varieties and this made a difficult marketing problem. Many of these varieties were distinctly second rate from a commercial standpoint. A steady educational program has been put on by extension specialists to stress variety standardization. The list has been gradually reduced from 25 or 30 to less than 10. Today one seldom finds, at least in young plantings, a commercial orchard that contains more than four or five apple varieties. This has simplified marketing problems. The change has been brought about in large measure by educational programs with producers.

Within the past 20 years the spraying program that has been employed in the commercial orchards of the state has become much more standardized. There is still too much variation, but on the whole the commercial producers follow college and extension spraying recommendations both as to materials and as to timing. This has been due in part to the research work of the departments of horticulture, plant pathology and entomology, and in part to the extension program of the specialists in those three lines. It has likewise been aided very substantially by the county agricultural agents, most of whom in the horticultural counties send out news bulletins at the critical periods for spraying.

Though field mice and rabbits still continue to cause a great amount of damage in orchards because suitable protective measures have not been employed, each fall for a number of years the extension specialists have put on short but intensive mouse poisoning and rabbit repellent campaigns. Orchards are now much better protected during the winter from the inroads of mice and rabbits than formerly. There is still some occasion for grafting in the spring, and extension specialists each spring put on educational programs to assist growers to repair damaged trees.

The first full-time vegetable extension specialist of Michigan went on the job in the spring of 1923. It is somewhat difficult to measure the results of the vegetable extension program which has been largely with the commercial interests. Cooperation has involved the canners' organizations and the canners' fieldmen, and through them and the college short courses held for canners' fieldmen the science reaches annually some 15,000 or 20,000 Michigan farmers who produce crops for the commercial canneries. The assistance to them has been largely in the direction of better fertilizer and soil management methods, better control of a number of insects and diseases. In a similar way through the pickle packers' association and the fieldmen at various salting stations, information goes annually to between 5,000 and 10,000 growers of pickle crops.

Attention each spring is devoted to some gardening projects. Through meetings held by county agricultural agents and home demonstration agents a large amount of educational work has been done with amateur home gardeners to help them with both variety and culture problems in the production of the home food supply.

OLERICULTURE

Extension activities in olericulture (vegetable culture) began with the appointment, in 1922, of a part-time specialist.

Since its inception in 1922, major phases of the work in extension olericulture have been in the fields of canning crop production, commercial vegetable production, home gardens and vegetable forcing.

Pioneer work in canning crops consisted largely of consultations with individual canners and their fieldmen plus lecture meetings with prospective growers. Leaflets on the production of major crops were printed and distributed to growers along with their contracts by various canners.

An agricultural committee was appointed by the Michigan Canners' association in 1935 to work with the specialist in planning extension programs and, in 1936, the first annual conference for canners and their fieldmen was staged.

Value of such conferences is manifested in the increased faith shown by both growers and canners in soil tests, fertilizers, rotation and improved varieties. Many companies will no longer write contracts unless the farmer agrees to follow extension service recommendations. Similar conferences, stressing satisfactory production of high quality raw products and satisfactory acreage returns, are held yearly in connection with the bacteriology department for pickle and kraut packers.

Activities of olericulture specialists working with commercial vegetable growers and vegetable forcing interests has consisted largely of

lecture meetings, demonstrations, timely publications, personal visitations and tours. Information includes new and improved varieties, proper methods of fertilizer application, value of rotations with cover crops and numerous other improved cultural practices.

Considerable time was spent by extension specialists in home gardening during the depression years in promoting and executing extensive gardening campaigns among the unemployed. Working cooperatively with relief agencies, extension representatives carried on statewide gardening projects which accounts for 6,200 gardens grown in Detroit alone in 1934 at an average cost of \$4.40 per garden. The average produce value of such gardens amounted to \$50 each and 31,000 people were benefited by the project.

Home garden project work has been mainly the supplying of authentic gardening information on the subject to county, home demonstration and club agents plus the holding of lecture and demonstration meetings in various counties. A 52-page bulletin "The Home Vegetable Garden" was prepared jointly by the horticultural, entomology and plant pathology specialists in 1930 and has been revised every two years since then. Thousands of copies of each revision have been issued.

The future program of this department of the extension division calls for a further strengthening of the ties between growers, canners and packers and the possibility of allotting more time to home gardening projects.



Extension work in vegetable crops has promoted the growing of home gardens.

FLORICULTURE

Comparatively recent as an extension project, floriculture took its place on the extension service program in 1928 as a result of activities and requests on the part of the Michigan State Florists' association.

Under the leadership of Kenneth Post, appointed specialist in that year, extension floriculturists devoted early efforts largely to work with commercial florists, conducting the service through the medium of personal visits and individual assistance.

As the industry expanded and interest in growing increased, sub-projects were added. First of these was the gladiolus growers' project in 1928 followed by similar programs for dahlia growers in 1931, miscellaneous bulb growers in 1932 and nurserymen in 1936. A growing demand from the state's home gardeners in the past ten years has made their project the largest and most time-demanding of all.

Floriculture, as a project, has been actively associated and cooperative with memberships of such groups as the Michigan State Florists' association, the Michigan Association of Nurserymen, the Michigan Horticultural Society, the Michigan Gladiolus Society, the Michigan Dahlia Society, the Michigan Peony and Iris Society and most of the state's garden clubs.

With the aim of increasing the use of plant materials in farm and home grounds, at the same time increasing the sales of commercial growers and improving the quality of crops grown, the project is carried on through lectures, demonstrations, exhibitions and personal visits.

Basis for the project to date and the probable future is the fact that Michigan growers of ornamental plants yearly devote more than 10,000 acres to their crop. Since the acre valuation of such crops is very high it is essential that growers be continually advised of the latest cultural methods as well as the latest scientific methods of controlling insects and diseases.

APICULTURE

Another first for Michigan State College.

Years before bee culture extension work assumed its present proportions Prof. A. J. Cook, College Zoologist, taught in old College hall the first course in beekeeping to be offered in any college. This was in 1863.

Through Cook's assistance the Michigan Beekeepers' association was organized at Jackson, April 7, 1869, and by 1881 a regulatory law dealing with bee diseases had been passed by the state legislature.

Despite these pioneering efforts in apiculture it was not until May 1, 1918, that a full-time apiary extensionist was appointed. In the succeeding decade results included organizing of county beekeepers' associations and an educational program designed to aid bee men in foulbrood control methods and improvement of apiary management.

Later the project included full-time to such projects as improvement of beekeeping methods through demonstration apiaries, assistance to fruit and seed growers having pollination problems and improvement of marketing methods.

Since 1935 the specialist has spent one-third time on apiary ex-



Improved management of commercial apiaries has been one of the goals of the extension specialist in apiculture.

tension work fostering organization, apiary management and honey marketing projects.

Direct and indirect action on the part of apiary extension service workers has resulted in the present organization of 39 county and five district associations as well as the state organization. In December 1938, the Michigan Honey Institute, organized to improve grading, packing and advertising of the state's honey crop, came into being and currently Michigan apiculturists are discussing the organization of a cooperative honey marketing group.

INFORMATION

News services of the extension division are comparative youngsters. Yet they have become of sufficient age to contribute their share in the last two-thirds of the history of the state's quarter-century of extension work in agriculture and home economics.

It took the World War to give impetus and new-found need for an extension information service in Michigan.

Through the federal War Preparedness Board which sought means of increasing food production, 38 emergency agricultural agents were

appointed in 1917 to serve 49 Michigan counties. Work of these men was made easier beginning April 1 of that year through appointment of a special publicity man at the College.

Thus the original news service was established and its success made it feasible since then to continue various but consistently scheduled news services.

Today's news service for distributing information pertinent to extension work in agriculture and home economics includes a variety of devices and outlets. The very growth of the College in scope of service, enrollment of students and size of campus, farms and staff has brought a natural increase and divergence in handling news.

More special service was demanded in 1939 in the twenty-fifth year of extension work than in any previous year. This is true in demands for news and features, as well as in publicizing the increased activities of the various departments.

That first man has been followed in succession by a number of extension staff members in the information service.

In 1926 new emphasis was placed on the service supplied weekly to Michigan's weekly newspapers, a policy which continues to prevail. Daily newspapers largely obtain information through special correspondents or through the Associated and United Press wire services which have bureaus in Lansing. These wire services rely upon daily contacts with the college.

SERVICES AVAILABLE

Services include editing bulletins, preparing copy for weekly newspaper releases and keeping contact with the various agricultural departments, especially those engaged in the extension service.

A new member of the staff had been obtained from the college music department in August 1934. He assumed the role of program director for the college radio station which operates under the sponsorship of the extension service.

There have been no personnel changes since 1936. The staff then included a radio station director, extension editor, and the two assistant editors.

In the information service, newspapers continue to use a gratifying amount of material in the face of decreased business, less available space and greater competition which the college material faces from governmental agencies both state and national and from private news, publicity and propaganda devices.

Recently a more serviceable arrangement in cooperation with the Michigan State Department of Agriculture has been put in motion. It is working out satisfactorily. It consists of alternating news pictorial mats which newspaper editors can use in regularly published agricultural sections, pages or columns.

In bulletin work the "dressing-up" of bulletins is apparent in the demand for copies from all sections of the state. Covers, inside layouts and printing jobs have proved popular enough to present a financial problem in keeping copies on hand. This condition directly constitutes a compliment on the quality of the bulletin work.

At present a new system is operating for paper purchase and for a morgue or file for bulletin cuts. Each of these programs involves

ultimate savings of many dollars annually. The morgue of engravings likely will contain \$40,000 of usable cuts. Many of these can be utilized in multiple ways with proper care and identification. In the paper stock purchases, estimates indicate probable annual savings of \$500 in buying less costly but more suitable paper stocks.

INSECT CONTROL

Previous to the passing of the Smith-Lever act, farmer educational insect control work was conducted by members of the college entomology teaching staff. Just prior to May 1915, and until the appointment of an extension entomologist, July 1, 1915, such activities were conducted by the now retired Prof. R. H. Pettit and his staff.

Early entomology extension work covered such long-time projects as codling moth control, spray date service, beekeeping, livestock pest control and garden and field crop insect control.

Outstanding among these first projects was the codling moth date service which, in the past 24 years, has been refined, reorganized, extended and modified until present growers rely on it for complete information as to the time to begin second brood spraying.

A foster child of the codling moth service has been the cherry fruit-fly spray calendar. The calendar is modified each year in accordance with the emergence dates of the egg-laying moth and, by 1932, had become so dependable that many canners refuse to buy cherries which have not been sprayed in accordance with it.

More time was allowed for the extension service insect fighters when the beekeeping project was transferred to the horticultural department after the organization of county associations and other preliminary work had been set up. This time, together with the development and availability of non-poisonous insecticides, allowed for the introduction and popularization, by extension men, of treatment for control of livestock pests.

Demonstrations among the rural population that rotenone and pyrethrum would kill livestock pests without any possibility of accident were followed by the adoption and use of these materials in all parts of the state and in the past five years there have been fewer reports of insect outbreaks affecting livestock.

ANTI-FLY CAMPAIGN

Applying the ideas of Professor Pettit on fly control in connection with the livestock project an extensive campaign was conducted by extension entomologists during the influenza epidemic of 1918 in an effort to rid livestock and stock barns of possible carrier flies. Universal use of kerosene-pyrethrum extract for this purpose has been the result of these campaigns. The adaptation since has been nationwide.

In the meantime garden and field crop insect authorities were concerned with a number of major insect pest outbreaks. Successive campaigns were waged against grasshoppers from 1918 until 1922, army worms and chinch bugs from 1922 to 1924, corn borer from 1927 to 1929, bean weevils in 1933 and 1934. A second grasshopper influx

in 1932 and the chinch bug invasions of 1934 and 1935 also attracted a major share of the extension workers' time.

Early efforts at chinch bug and grasshopper control were carried along entirely on extension funds with the exception of one state appropriation for grasshopper control. Necessarily such campaigns were not on the same scale as those federally financed against corn borer, chinch bugs and grasshoppers.

Most important campaign directed prior to 1930 was against corn borers. Information was disseminated to keep farmers informed as to control measures on this insect and numerous instances of local borer outbreaks were put down through the application of materials publicized at that time.

In 1927 a half-time extension specialist was appointed for work in insect control. The other share of this man's services was allocated to experiment station work principally on the European corn borer problem. After 1929 little need was found for intensive corn borer educational activities and the principal specialist's activity centered more on garden and field crop insect control and the control of live-stock insect pests.

Garden and field crop work was conducted principally on a general problem lecture basis until 1934. At that time a need for better organization of the program was felt and plans were made to concentrate, in an organized manner, as much control work as possible on selected pests.

Although the outbreak had been anticipated and a tentative program already outlined, extension men requested assistance from the state bean shipping interests to combat the bean weevil situation which developed in the winter of 1933-34.

Control recommendations were listed and attempts made to present this information to all Michigan bean dealers and growers through the medium of news releases, radio talks and letters to bean dealers. Dealer and farmer meetings with extension specialists were also arranged. A four-page illustrated leaflet was distributed at all meetings as well as through county agents and bean dealers. Planters were urged to sow clean seed and destroy or treat other sources of infestation such as bean straw, cull beans and beans stored for later marketing.

At least partially resultant from this program was the bean jobbers' association reports which showed 50 cars found infested by out-of-state buyers in 1933 and only three such cars in 1934.

CHINCH BUG INFESTATION OF 1934

Along with the Michigan chinch bug infestation of 1934 came federal assistance to eliminate these pests. Surveys were conducted to determine the extent of probable damage and more than 100,000 gallons of federal tar were distributed through county agents for the construction of barriers to protect crops, mostly corn, adjacent to infested grain fields. This program was conducted largely in Berrien, Lenawee, Monroe, Washtenaw and Wayne counties.

During the same year distribution of federal materials by county agents and extension men saved more than \$2,500,000 worth of crops and seedings from the grasshopper invasion in the upper peninsula and counties immediately below the straits.

To anticipate the need for control material in 1935 extension insect fighters surveyed all counties likely to be infested with chinch bugs or grasshoppers. It was found that the small stock of chinch bug material left over from the 1934 campaign would be sufficient to handle localized problems but since grasshoppers promised to be epidemic, federal material was obtained for the continuation of control work. Considerable of the 1935 material went unused that year and further federal assistance was not required until 1937. Baiting programs were continuous after 1934 and have been handled each year through the county agents' offices.



Many phases of insect control are included in the program of extension specialists in entomology. Here is shown spraying for control of scale insects on dormant nursery stock.

Experience in promoting grasshopper baiting activities led to adoption of several uniform practices in affected counties. Bait is mixed before being issued to farmers and always handled in bags carrying a "poison warning" tag. Material is allocated to counties after fall and spring surveys indicate their potential requirements and after signed requests are submitted by interested farmers showing their potential infested grass acreage.

Although some losses occurred each year, principally in pastures and seedings, savings in 1935 totaled about \$1,500,000 and were followed by savings of \$500,000 in 1936, \$660,000 in 1937 and about \$1,118,000 in 1938. Importance of the grasshopper control sub-project warranted the full attention of the insect control extension specialist after the 1934-35 seasons. Corn borer experimental work was discontinued after that time and the entomology extension project assumed full-time proportions, Nov. 1, 1935.

In addition to the bean weevil, grasshopper and chinch bug campaigns the specialist continued lecture work. Both lecture and demonstration work in several sub-projects were carried on after 1935.

In 1935 a series of district schools on insecticide and fungicide dealer training was instituted and the work was continued, in cooperation with the extension plant pathologist until 1938. It is now planned to offer such work as demand for it arises.

Entomology was introduced into the 4-H club program in 1935 at the three state camps. Classes in introductory entomology with special emphasis on the economic importance of garden and field crop pests were conducted. In connection with this work three county camps have been visited since 1937 with work on nature study from the insect angle.

LIVESTOCK PEST CONTROL

Lectures and barn demonstrations on livestock pest control were continued in 1935 and, in addition, an attempt was made to organize community groups interested in such projects.

Again with the cooperation of the plant specialist, a program of intensive lecture and demonstration work on potato protection, with special reference to the problems of the small acreage grower, was carried out in 1936. A series of meetings dealing with muck farming pests was instigated and promoted in several counties in the same year.

New work in 1937 consisted chiefly of special control methods on cabbage maggot and the release of parasites of the oriental peach moth. A series of card releases called the "Livestock Pest Control Calendar" was started. They were so well received in the winter by county agents and listed insecticide dealers that a similar service was worked out for summer months. Printed with the conventional red lightning symbol across the face of the card the releases were called bug flashes and 20 subjects were covered in 18 weeks.

The grasshopper menace required full time attention in 1938 and an extensive program including spring, summer and fall surveys, allocation of material and conducting of educational activities for leaders and at farmers' meetings accounted for most of the time spent from March to December. Livestock pest calendars, bug flashes and a series of press stories took care of the routine summer work except for responses to occasional emergency calls for aid against army worms.

Fruit spray timing service, usually done by other members of the college entomology department, was continued and available winter time was devoted to lecture work on garden and field crop pests and control of cattle louse and ox-warble.

The first few months of 1939 were devoted to preparation of material for the grasshopper control program and starting of the educational survey. A brief interlude permitted the continuation of several barn demonstrations on cattle louse and ox-warble control.

Future extension insect control work will follow along past lines with additional sub-projects added as time and demand justify the calls.

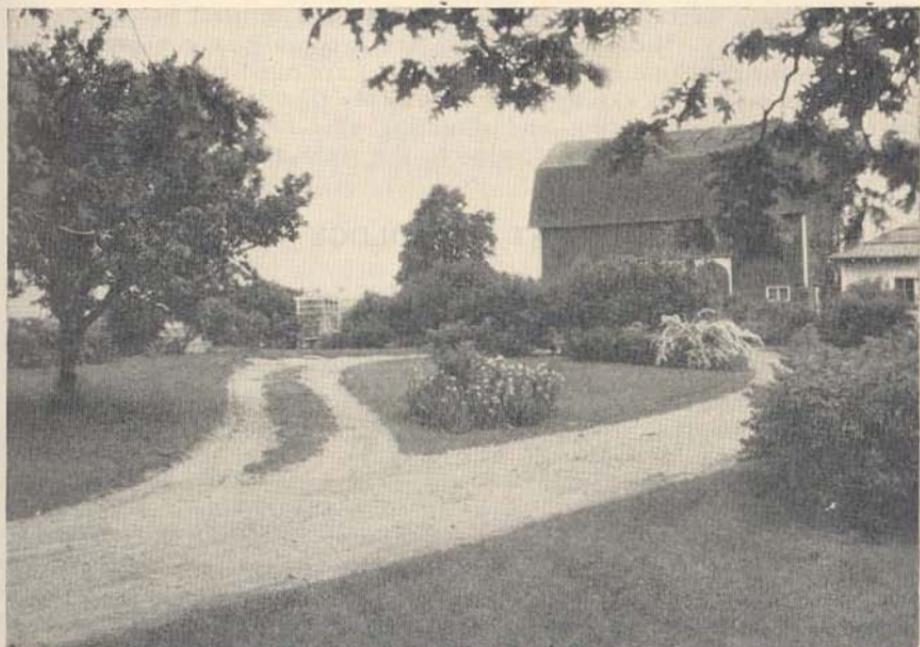
LANDSCAPE GARDENING

Prior to 1926 extension activities in the field of landscape gardening were carried on by Michigan State College through the facilities of bulletins, popular illustrated lectures and other limited means of educating the citizens of the state to an appreciation of the value of the native beauty of their landscape. Foresight indicated this was a foundation for establishing the summer vacationing and recreational industry that is now of such great economic importance.

Demand for further work and instruction in landscape projects led to the appointment of a landscape extension specialist in 1926. For the first few years an educational program featuring popular lectures formed most of the landscape extension workers' program.

In line with the lecture series, designed to direct interest towards rural sections and the beautification of farm home grounds, came such projects as the landscaping of rural highways, improvement and landscape development of rural cemeteries, parks and playgrounds and landscape planting of rural consolidated school grounds.

After such promotional educational work had aroused the public interest, extension practice was modified to include the landscape planning of a few selected farm grounds in each county for community demonstration purposes.



Many Michigan farm homes illustrate the results of the extension program in landscape architecture. Here are shown a "turn-around" drive and the use of shrub masses to screen the barn from the highway.

Planting demonstrations were arranged and held during the planting season in an effort to create general interest in various communities. After demonstration plantings had grown to demonstrate materially the improvement in appearance that had been accomplished by their presence, county landscape tours were arranged for interested groups.

In order to meet the demand on the part of rural people for assistance from the extension landscape specialist, county agricultural agents have organized classes which are attended by the specialist where he presents a series of three or four lectures on the subject. Personal conferences are then arranged and from proposed plans and snapshots landscape workers draw up detailed plans of proposed drives, walks and plantings for individual farm homes.

In addition to the 500 such individual plans made by the specialist each year numerous landscape plans for rural civic projects such as parks, cemeteries and school grounds have been made for rural committees.

The promotional lecture program of the landscape extension pioneer days has served its purpose so well that in the past few years it has been necessary to abandon it to give more time towards meeting the demand for assistance in landscape projects. All but 10 of Michigan's 83 counties put in a call through their county agents for landscape extension service last year and in the past 13 years the college specialist has made 5,841 planting plans, most of them for Michigan farm home grounds.

Through the facilities of landscape extension workers, Michigan residents have become conscious of the state's natural resources for landscape beauty. Rural homeowners are becoming as concerned over the landscape development of their homes as are most suburban dwellers and it is a matter of extension service pride that its men have been a potent force in promoting and directing this beneficial development which should prove of lasting value to the state and its people.

PLANT PATHOLOGY

A particular appointment in 1911 to the college botany department marked the beginning of plant pathology extension work in Michigan.

Early work consisted mainly of press releases dealing with plant disease control. In 1913 the potato blight epidemic furnished impetus to educational work carried on through the agricultural press.

After the passage of the Smith-Lever act in 1914 the first cooperative plant pathology project was laid out. Early projects stressed control of potato blight, bunt of wheat, oat smuts and bean diseases and for the first time some record of accomplishments was kept.

During the World War period other members of the botany department staff assisted in arranging meetings at which disease control for cereal, potato and vegetable crops were discussed. Appointment of a muck crop specialist in 1916 allowed considerable extension work to be done on vegetable diseases along with other duties.

Following the war years, during which the benefits of disease control had been established, extension activity in the field of plant pathology increased. News letters to county agricultural agents, timely

press releases on plant disease topics, disease surveys and subject matter conferences with extension specialists in farm crops and horticulture proved the main medium of expression for plant pathologists during the early twenties.

Appointment of a half-time extension plant pathologist in 1929 coordinated previous work into an organized project aimed to aid farmers in control of potato, cereal, raspberry and vegetable diseases.

Close contact was kept between extension specialists and county agents, and by 1937 a county agent committee was appointed to discuss the entire project and its application in various sections of the state. Following these meetings county plant disease surveys and special meetings with insecticide and fungicide dealers were added to the project list.

In line with their early program of cooperation, county agents in many localities set up local committees to determine what phases of the plant pathology extension program would be most applicable to their community needs. Such active cooperation of county agents and their county groups has been a decided benefit to the entire program, project leaders claim.

Plant disease project leaders favor the lecture methods of educating farmers to disease control methods but such talks stress special crops and diseases rather than being of a general nature. Demonstrations on disease control are set up on the college farms and on some individually owned land: Lecture material for disease control addresses on such subjects as spraying, dusting, seed treating, crop roguing, establishment of disease-free plantations and seed and seedbed treatment for control of vegetable diseases is prepared from these demonstrations.

A special control project has also been carried on by plant pathology specialists and members of the farm crops extension service in the control phase of quality potato production. Colored slides, film strips, charts, mimeographed circulars and bulletins are used in the service's educational program.

Conservative estimates list accomplishments of this department of the college extension service since 1929:

An increase of 250,000 bushels in amount of seed wheat, barley and oats treated for smut control.

An increase of 50,000 acres planted to treated seed potatoes.

An increase of 10,000 acres of potatoes sprayed and dusted for disease control.

Establishment of grain treating services in 15 elevators.

Acceptance of seed treating recommendations by 60 percent of the vegetable growers of the state.

Establishment of potato seed plots on 300 additional farms.

General acceptance of dusting or spraying for celery blight control.

Establishment of disease control demonstrations by county agents in 50 percent of Michigan's counties.

The outlook for plant disease control projects indicates increased yearly activity as farmers realize the benefits to be derived. More and more farmers are becoming "conservation minded" and with that state of affairs existing, plant disease control as an essential factor in crop conservation is becoming more readily adopted as standard agricultural practice.

POULTRY

Always considered a necessary evil on the farm, poultry flocks as income-producing units didn't begin to come into their own until about 1910, four years after the establishment of a Poultry Department at Michigan State College.

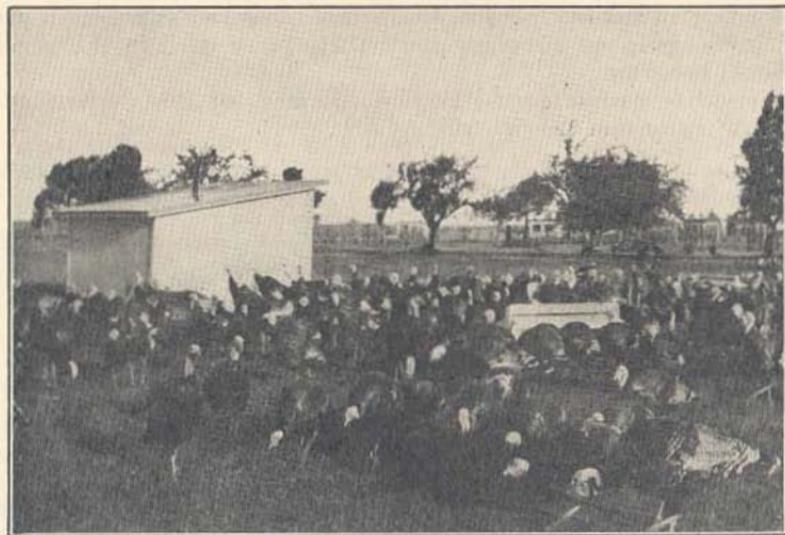
The decade between 1910 and 1920 saw the poultry business strengthened, primarily on the show-exhibition angle. Strong poultry associations began to appear in many counties and the production of blue ribbon winning chickens for county exhibits and fairs was strongly stressed.

Cooperating with field judges the college department aided students and outsiders by teaching the rudiments of exhibition judging. Department members give honorable mention to Frank Mitchell, now head of the college electrical service department, for his help in developing better poultry at this early date.

Just before 1920 interest in exhibition poultry slackened and, from 1920 on, more and more attention was devoted to the production poultryman. From 1915 to 1920 the development of culling flocks formed an integral part of all extension service programs. The specialist published a book, "Culling By Head Points," at that time in addition to holding six or eight culling demonstrations a day for many years.

A new service of the department, the International Egg Laying Contest, was established in 1922 to obtain authentic records of trapped birds from different poultry breeders as a guide for prospective buyers.

John A. Hannah, a graduate of the college in 1923, became leader of the poultry extension project in that year and under his guidance



The extension poultry program has included work with Michigan's turkey industry.

the Michigan State Poultry Improvement and the Michigan Record of Performance associations were organized. By 1927 the work connected with the Poultry Improvement association had so increased that a man was hired by the association as field manager.

A resume of Hannah's regime as extension project leader shows the following innovations in the work: demonstration farms; beginning of the annual baby chick show which one year exhibited 10,000 chicks; introduction of the state egg show and the state turkey show during Farmers' Week; opening of relay "culling schools" for community poultry project leaders; conducting of state and county poultry tours, and organization of the State Poultry Improvement, Michigan Record of Performance and Michigan Turkey Growers' associations.

An outstanding figure in the history of poultry extension work is Dr. H. J. Stafseth of the College Bacteriology Department. Nationally rated among poultry pathologists, Stafseth has always given liberally of his time to poultry extension meetings and many of the pullorum disease control measures now in use throughout the state are traceable to his work in conducting pullorum testing schools for the training of testers to eradicate the disease.

Since the appointment in 1935 of a poultry disease specialist the extension division has conducted a special program with poultrymen and veterinarians in an effort to curb laying house losses.

Currently, poultry extensionists are paying extra attention to marketing problems. Following the establishment, two years ago, of a federal-state egg grading system, problems in quality egg production have been numerous. Stressing such methods of efficient production as rearing healthy chicks, increasing egg production per bird, economical feeding for high production and similar subjects have been an important phase of the extension program in the past two years.

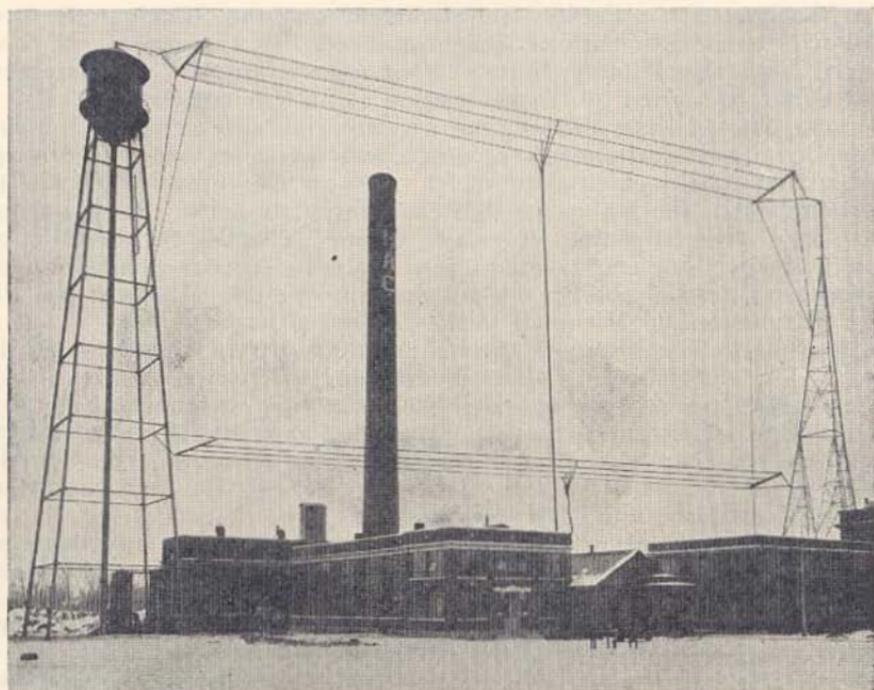
In the future more attention will be paid to teaching poultrymen to increase profits by improved methods of preparing eggs and meat for marketing.

Availability of cheap feed and improved marketing facilities have increased Michigan's poultry population from 10,380,000 birds by the 1930 census to 11,114,000 in 1935. Because of geographical location the extension service can do little about the first factor and future activities will be largely centered on improving marketing conditions in an effort to make the poultry business more profitable for its owners.

COLLEGE RADIO

In the short, quarter-century existence of the College Extension Service many old things have been developed and many new ones have come into being. One of the most important of the new developments to the College in general and the Extension Service in particular is radio. This includes the College's broadcasting service with its station, WKAR.

In 1922, just 18 short years ago, Michigan State first went on the air. These first feeble beginnings evolved as a by-product of engineering student pranksters. They thought it would be fun to "broadcast" from the engineering building, and so the radio neophytes constructed



The antenna and "outside trappings" of the College radio station certainly attracted the eye of the campus visitor in the 1920's, but the signal strength did not reach far.

a sending apparatus and presently startled residents within a 12-mile radius of the College. Listeners, equipped with head phones, were shocked to hear their usually respectable crystal sets emanating bits of ribald songs meant only for residents of Wells Hall.

Since that early broadcast by error, College station WKAR has become an important and powerful arm of the College Extension Service. Early recognizing the possibilities in this new method of communication the College arranged in 1922 for a series of agricultural talks to be delivered over WWJ, Detroit. Prof. H. C. Rather, then extension specialist in farm crops was first on this series, speaking on the quality of seeds as a means towards quality crops. He told how the state of Michigan and the Michigan Crop Improvement Association were cooperating to provide seeds of known and demonstrated excellence. Many claim this was the first and others class this talk among the first talks on agricultural subjects ever given via the airlines.

LICENSE GRANTED IN 1922

First official college entrance in the radio field came on Aug. 18, 1922, when a federal license was granted to operate a transmitter on 360 meters (834 kilocycles) with 250 watt power and the assigning of the call letters, WKAR. Interested staff members and students in the electrical engineering department developed the first transmitter which was operated on a limited schedule for two years.

When the Detroit News, early in 1924, installed a new transmitter they gave the College their old 500-watt equipment and on January 12 a license enabling the College station to cover the operation of this new power was granted.

As WKAR grew it came more and more to the notice of the Extension Service. In 1925 a Farm Radio School was inaugurated for the presentation of such courses as home economics, animal husbandry, poultry and veterinary medicine, horticulture and gardening, dairying and farm crops. This novel experiment of agricultural education by air attracted large enrollments and examinations were given and certificates awarded to all who completed the courses.

Further service to rural audiences, which began about the same time, included market reports and timely information on agricultural practices. This program has continued uninterrupted for 14 years and has become one of the leading contacts with rural listeners.

The farm radio school was repeated in 1926 with a 12 weeks' course of study and a schedule which included 182 lectures with 100 different instructors cooperating. In addition there was a series in nature study and one by departments of state government. The schedule of classes this and the following year was offered from January to April. The farm program at noon provided the program material throughout the rest of the year.

By the time WKAR was ready to apply for a license renewal in 1927 it had come a long way from its pioneer days which Fred C. Holmes, engineering graduate of 1923, describes thus: "We had the thrill of accomplishing everything with makeshift equipment, of tearing everything and everybody loose on the campus to get through, and feeling important in a telephone booth on the track at basket ball games and lectures. But everything was pretty crude. Rarely did anyone know until five minutes before broadcast time if the program would go on. We had no monitor, and one of us ran back and forth from the armory to the next house where Secretary Halliday had a receiver. There was much more enthusiasm in those days than there was skill and finesse."

By 1927, radio had come far from that description. In the license application were listed faculty talks, valuable information on crop and market conditions and insect pest campaigns. The application further states that the College station, in addition to having become an important information source to its listeners, had become of material assistance to other extension facilities such as county agricultural agents, boys' and girls' clubs, home economics demonstrations, railway demonstration tours and publications.

POWER INCREASE GRANTED

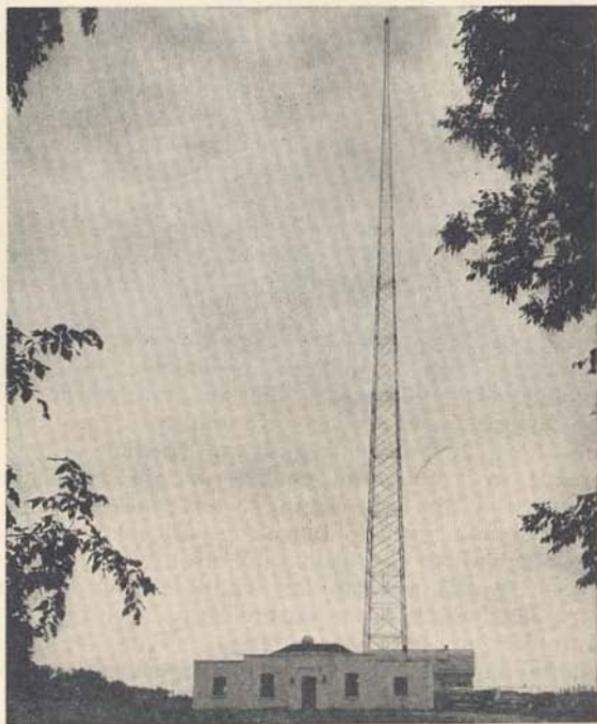
Several shifts of frequency assignment occurred during the year, 1927, but when the Federal Radio Commission reallocated all stations on Oct. 31, 1928, WKAR was placed on 1040 kilocycles and authorized to use 500 watts of power during daytime hours.

Resultant re-scheduling of programs brought in an afternoon period and placed the farm course broadcast at 7:30 a. m. daily.

When broadcasting hours were limited to specified times by the Federal Commission on Jan. 30, 1932, a second schedule shift brought

in a half-hour farm program including markets and talks by agricultural staff members and an hour period in the afternoon which included music, home economics, and educational talks by various college departmental staff members.

First actual student participation in educational programs occurred in 1932 when agricultural courses were presented for Smith-Hughes high schools. With the revision of the course in 1933 to a high school biology course (which is still in operation) regular participants leaped



Today, the transmitter and antenna of WKAR are located south of the Red Cedar River and the studios are housed in the new College Auditorium. The station now is the most powerful in Michigan outside the Detroit area and is capable of consistently reaching more than 85 per cent of Michigan's total population.

from the original 700 to more than 2,000 in 1938-39 when a series including physiology, botany, zoology, entomology and bacteriology was offered by the various departments.

Because of economic conditions, the radio station had been somewhat restricted, but in 1934 it was decided to rebuild the service and a new schedule of broadcasts was inaugurated which broadened the scope of the subject material but still stressed farm programs. With the appointment of a full-time director came a program expansion

which scheduled 13 hours per week, the most attempted by WKAR until that time.

With this expansion came such new features as the broadcasting, direct from the meetings, of Farmers' Week events for the benefit of those who could not attend in person. Twenty-one pickups were aired during the week and the feature has been continued as a regular part of the Farmers' Week schedule.

Interference from other stations, making reception difficult in several parts of the state, became such a serious problem in 1934 that application for a frequency change was made. The new frequency (850 kilocycles) was assigned Jan. 14, 1935, by the Federal Communications Commission and has not since been changed.

By 1935 the earlier search for "skill and finesse" had been answered. During that year the Michigan State College of the air was scheduled, and included courses in agriculture. Offering of such courses as flower growing, gardening, rural electrification, planning farm buildings, poultry (direct from the classroom), dairy, farm crops, soils, feeding of livestock and nutrition of farm animals plus several courses in academic subjects proved popular during the years 1935-38.

Programs continued to expand as each year additional hours were added until in 1937 the schedule was 11 hours per day, 66 hours per week. This is the full time allotted the station by the Federal Communications Commission.

STATION REACHES 86% OF STATE'S POPULATION

With the added programs and hours, increased listener demand for service became so acute that in April 1937, a request was made for increase to 5,000 watts. On July 2, 1938, the F. C. C. authorized the power boost and a construction permit was issued in March 1939, to build new studios and transmitter that would enable WKAR operating on 5,000-watt power, to reach 86 percent of the total state population and 73 percent of Michigan's rural radio audience.

(These studios in the new college auditorium have been completed and the 5,000-watt power is now being utilized. The new service was inaugurated June 6, 1940.)

WKAR's present programs are planned to provide a wide variety of educational material in every field represented on the campus. Although new features are not exclusively agricultural in nature new methods of communication, the automobile and modern inventions have made the rural listener as discriminating as his city brother so that his added interests also range wider than his work.

Where radio is going is yet to be determined. But the large group of listeners who depend for service on WKAR (figures of Jan. 1, 1938, show 278,720 rural and 293,090 urban families owning radios within the service area of the station) is ample proof that this station has demonstrated its worth in the field of agricultural extension. The next 25 years will undoubtedly bring much greater uses of this modern medium.

SOILS

Production rather than preservation keynoted the extension efforts of soils experts in the days before the passage of the Smith-Lever act. In an effort to increase yield appreciably per acre, pioneer service work in the field of soils was concentrated primarily towards establishing desirable soil-moisture relations through drainage and tillage practice to increase intake and storage of moisture.

Early soils experts gained practical experience laying out the drainage system of the original College farm and the emphasis placed on soil moisture is apparent from a study of the titles of bulletins then published stressing such work as "Tile Drainage" and "Soil Moisture—Its Importance and Management."

But although moisture control received major attention, inklings of the coming switch to soil preservation are shown in early attempts to solve problems of soil composition and to build up soil through the use of legumes, manure, fertilizer and liming.



Extension specialists in soils since 1914 have encouraged the use of lime to correct the acidity of certain soils.

Liming of acid soils through applications of marl came early under discussion among members of the Soils Department, but failure to follow talk with immediate action brought no results and, in fact, is blamed for failing to increase the state's alfalfa acreage during the initial campaign.

In 1922, however, Dr. C. H. Spurway, of the department, developed a simple field method of testing soils which contributed greatly in the state to the establishment of more than a million acres of alfalfa and a large acreage of sweet clover in later years.

By 1914, College representatives' early skepticism over commercial fertilizers had vanished and the Soils Department began an active program to encourage the use of lime on acid soils and commercial fertilizer on all lands. Demonstration plots were established in Ingham, Lenawee and Van Buren counties and assistance was given institute speakers presenting the theories of improved agricultural practices to farmer groups throughout the state.

Requests for department members to speak at farmers' meetings were so numerous in 1914-15 that it became necessary to employ a specialist to carry on extension work in soils. William Murphy, present county agricultural agent in Macomb county, was appointed soils extension specialist.

Murphy and his aides had their work greatly emphasized shortly after his appointment because the increase demand for foodstuffs during the war years resulted in state-wide and even nation-wide poor farming practices. Extension workers intensified campaigns to increase production without harming soil resources needlessly but their numbers were few and produce profits were high. Consequently, land which should have remained in grass was put into grain, and limited farm help resulted in much poor farming.

During the war years College soils men stressed utilization of fertilizers, application of manure and green manuring. Non-extension members of the department joined in the campaign, and gradually the number of demonstration fields was increased in order to supply local data to support approved soil management practices. Experimental work in field, greenhouse and laboratory supplied pictures and data for extension use.

EXTENSION PROJECTS INCREASED

As information accumulated concerning the chemical composition of soil, humus supply, need for lime, value of green manures and sod crops, and fertilizer requirements of Michigan soils, corresponding extension projects along such lines were introduced. The classification and mapping of Michigan soil types facilitated and gave new interest to the work. By 1926, projects were outlined in such subjects as acid soils and liming functions of humus in the soil and methods of maintaining humus supply, rotations, plant food requirements of crops, soil composition and fertilizer needs, plowing and preparation of the seed-bed, preservation and the use of manure and legumes in soil planting.

In 1927 much extension effort was exerted through the medium of "local leader" types of schools. Winter months for the following five or six years were largely devoted to such schools and by 1928 lessons on farm crops and associated subjects were given prominence. The

first series of "schools" was allowed to lapse but was followed by a second series in the early thirties. Discussion groups were formulated to consider soil problems, and from these discussions many farmers accumulated a fund of basic knowledge concerning soils that both increased acre-yield and conserved soil resources through the summer working months. In addition, neighbors of many communities formed the habit of gathering to review local difficulties and search out answers to their problems.

During the spring, winter and fall months a demonstration truck became the center of soils extension service activity in those years. Panel exhibits, protected by swing doors that could be shut while the truck was not in use or on the road, were mounted on the inclosed body. Lectures on the principles of soil fertility and similar subjects were so arranged that the speaker could move around the panels illustrating pertinent points. Lectures were offered in school yards, barn lots, at Grange halls and other suitable places.

By 1930 special attention was being given to the excavation and use of marl for soil preservation. In cooperation with the college agricultural engineering department a project featured this enterprise for several years. In 1934 some attention was given to marl excavation projects by the WPA but a subsequent ruling from Washington caused the discontinuation of marl digging as WPA work. However county boards of supervisors and groups of farmers throughout the state continued to push such projects vigorously.

Along with the depression era and the attendant low farm income came the "Live at Home" project. In line with this work a listing of livestock units on individual farms was drawn up together with the acreage of various crops. A balance was then figured to determine how near home-grown feed met the livestock requirements and adjustments toward a more perfect balance were suggested to those farmers who found it necessary to buy produce for their livestock consumption. Soil treatments to increase yields of feed and cash crops were introduced and farmers were urged to analyze their farming system as closely as possible and to consider all enterprises as a unit.

SOIL CONSERVATION SERVICE

In 1936 E. C. Sackrider, then extension specialist in soils, was chosen state coordinator and director of the newly-organized soil conservation service. From that time on the service and the college soils department have cooperated closely in furnishing Michigan farmers with a well-rounded soil management and land use program. A soil conservation specialist was employed through federal and state funds jointly in 1937 and under his efforts the program gained such momentum that the first organized conservation district in the country was started.

Three such districts are now in operation in the state with prospects of two more coming up. Such districts have been organized through community initiative rather than at the urging of college or conservation service representatives. Twenty-four demonstration farms are additional to the three area demonstration projects now in existence.

Stimulated by an increased interest in land problems, by the establishment of the conservation institute and federal county planning many farmers have asked for information regarding rural land zoning

in the past few years. A half-time specialist in land use was employed in 1937 and, shortly after, the state legislature passed the zoning enabling act for which revising improvements have already been started. Information has been compiled with the aid of local planning groups relating to specific county agents which will enable them to offer individual farmers aid in planning types of farming to be used, amount of livestock that should be carried on certain farmlands as well as giving them accurate guides for comparison between their farm buildings and those of neighbors in the same county.

Further aid to county agents comes from sectional tours made each year under the direction of Prof. J. O. Veatch. During these study tours Veatch points out the characteristics and agricultural significance of these characteristics of the soil types in the area under study.

In the past two years the department has introduced a new procedure in demonstration organization. Through the cooperation of a commercial company certain amounts of fertilizer have been made available for demonstration purposes each year. Outlines for demonstrations using the fertilizer are forwarded to high school agricultural teachers by way of county agents' offices. Interested students sign agreements to carry on the projects as outlined and these agreements are forwarded to the county agent and thence to the specialist. Harvesting operations are carried out by the students but the specialist makes all threshing and yield calculations. In this way high school students become interested in fertilizer usage while at the same time the linkage of extension work from specialist to county agent to agricultural teacher to student is strengthened.

Another extension soils project which has received favorable comment is the "Soil Conservation 4-H Club." Providing for mapping of participant's farm homes the project is devoted to study of soil types, slope, degree of erosion and soil reaction during the first year while second year members devote attention to farm management systems and readjustment programs like erosion control, fertilization, green manuring, liming, rotations to supply livestock feed, cash crops and rearrangement of fields to provide suitable land usage. Bulletins for the project also have been prepared.

BASIC PHILOSOPHY OF SOIL CONSERVATION

Launching of the federal soil conservation and agricultural adjustment programs added considerably to the burdens of soil specialists. Because they felt it was essential that farmers should understand the basic philosophy of soil preservation behind the program and that mere compliance to receive payment would defeat the purpose, extension soils men spent much time attending farm meetings and with representatives of the program emphasizing this viewpoint.

Time was also spent in training county committee men in soil evaluation to enable them to more accurately appraise producing capacity and soil specialists cooperated freely with members of associated departments.

Increased interest in soil problems has been shown by Michigan farmers since the perfection by Dr. Spurway of a system of soils tests for available nutrients. Testing outfits have been provided for all

county agents and many of them maintain a small testing room in connection with their offices.

Although soils department programs are so closely associated with other departmental programs that its own members refuse to make exact measurements of accomplishments, soils extension workers have been responsible at least partially for increasing the annual fertilizer tonnage used in the state from 48,786 in the 1910-14 period to 132,702 in 1938, for recommending the grade and ratio of 85.7 percent of the fertilizer used in that year and reducing the number of licensed grades sold to 55.

Although much yet remains to be done in the field of soils extension service, its workers are proud of the job they have done in bringing public realization of the fact that land should be put into a proper use according to its qualities and location to best serve society for the present and future. Change in public viewpoint accompanied by alterations in land legislation from the idea of putting as much land as possible into private ownership has been a decided factor in changing soil extension service from a program of increased production to one of production by preservation.

WILDLIFE CONSERVATION

Wildlife conservation as a Michigan extension project began in the fall of 1937 when a farm game extension specialist was employed under a cooperative plan between the game division of the State Conservation Department and the extension service of Michigan State College.

Under the supervision of this specialist, there has grown up game management cooperatives conducted along similar lines to the Williamston plan, first of its kind in the United States although since adopted by several other states.

Need for some sort of extension activity in the field of game conservation and management had become acute in the last decade. Leisure time, more efficient transportation facilities and an abundance of game animals had turned every fourth man and many women into hunters.

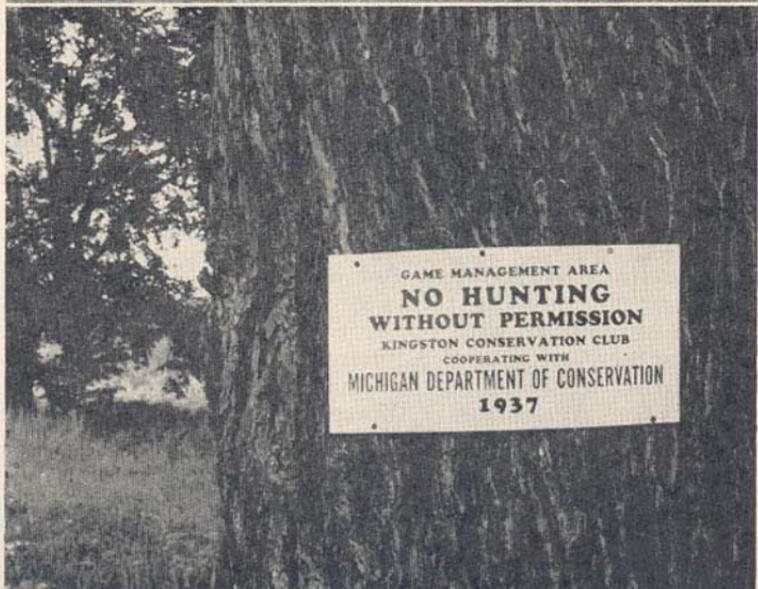
The bulk of Michigan's game is produced on farm lands. Aside from the problem of inducing farmers to till their soil with the idea of preserving game as well as soil resources, came difficulties in the form of private property rights and trespass violations and the need for some arrangement to insure an orderly harvest of both fur and game animals.

While a few localities have reported that over-abundance of game is feeding too heavily on farm crops, most portions of the state are desirous of increasing the supply of wildlife. Wildlife extension specialists, through the medium of news releases, showing of slides, public addresses and a general educational program have endeavored to make farm people aware of the significance as well as the presence of wildlife on their lands.

An effort has been made to make the people of Michigan aware that in any land use program the effect upon wildlife population must be taken into account if the annual two million dollar wild fur crop is to be preserved. Extension workers in wildlife conservation have lent

assistance with such public projects as drainage, reforestation and soil conservation as well as cooperating with individuals.

Carrying out the program of reevaluating land in relation to its ability to produce an income, extension men have enlisted the help of county agricultural agents, conservation officers and clubs, 4-H club leaders, county planning commissions, farm leaders and Smith-Hughes agricultural instructors. Sub-projects are carried on by such youth activity groups as 4-H clubs, Future Farmers of America and Junior Farm Bureaus.



Game management cooperatives (Williamston Plan) aid wildlife, assist in controlling trespass, and limit harvest to annual surplus.

Remainder of the individual educational program includes training of rural leaders, explaining the game situation at rural gatherings, attending farm meetings on game management and correlating wildlife management with land use activities.

GAME MANAGEMENT COOPERATIVES

Since the beginnings of the wildlife extension work 66 game management cooperatives involving 6,000 acres of land in 20 counties have been established in cooperation with the conservation department's game division.

Assistance in the way of conducting tours, attending promotion and organization meetings and camps has been given to youth organizations; county meetings of leaders have been held with the aim of improving leadership and at the same time increase the efficiency of cooperatives. Regular meetings of the Grange, Farm Bureau, farmers' clubs and women's organizations have been turned over to wildlife management discussions, and sportsmen clubs have been visited by extension service men stressing the necessity for better cooperation between urban and rural interests. In an effort to correlate wildlife interests with land use programs specialists have attended numerous meetings of project leaders in various counties throughout the state.

Additional educational information pertaining to game management and conservation has been disseminated through bulletins, bibliographies, radio programs, magazine articles, news stories, short course classes, charts, slides, maps and motion pictures. Since the management of wildlife resources is closely related to good farming nearly every department of the college's agricultural division has contributed to the work.

The surface of wildlife extension work has barely been scratched. Leaders of the project, however, believe that progress will go forward just so fast as Michigan farmers realize that a land unit is not merely a medium from which a certain number of bushels of wheat can be harvested but that it is a living community, complexly involved with water, soil organisms, vegetation and animal life and that every such unit has some value if put to its proper use.

AGRICULTURAL ADJUSTMENT

The Agricultural Adjustment Act of May 12, 1933—The responsibility for carrying out the terms of this act was assigned to the Secretary of Agriculture with power to set up within the Department of Agriculture the Agricultural Adjustment Administration. The Secretary directed that the work be coordinated closely with the rest of the department. The Agricultural Adjustment Administration therefore drew upon the statistical, informational, organizing and educational facilities of the other bureaus and offices within the department. Inasmuch as the Extension Services of the Land Grant Colleges are cooperative enterprises with the Federal Department of Agriculture, at first, the administration of the AAA program became their responsibility within each state.

The powers under the Adjustment Act fall into two groups, namely, "Production Adjustment Powers" and "Marketing Agreement Powers."

Very briefly stated, under the first group the Administration was permitted to take measures to balance production of farm goods with the effective demand for them. The second group of powers relates to prices to producers and to consumers, and to trade practices among processors and distributors of farm products.

The basic commodities named in the Act included wheat, rye, flax, barley, cotton, field corn, grain sorghums, hog, cattle, rice, tobacco, sugar beets, sugar cane, peanuts and dairy products. A dairy production control plan was proposed by the AAA and withdrawn because the sentiment among dairymen was not wholly favorable to it.

Production control programs affecting Michigan products included wheat, sugar beets, and corn and hogs—these the Extension Service was asked to conduct. C. V. Ballard, State Leader of County Agents, was placed in charge of the educational campaigns. In the wheat campaign the following Extension Specialists acted as District Supervisors under Mr. Ballard's direction: Don Hootman, Roy Decker, Paul Rood, John A. Hannah, A. B. Love. The District Supervisors who assisted Mr. Ballard in the corn-hog campaign included Delmer LaVoi, H. D. Hootman, J. G. Hays, Jr., and Roy E. Decker. Under the leadership of these men the county agricultural agents carried the detailed information regarding the wheat acreage reduction contracts and the corn-hog production control contracts to the eligible producers of the state.

In the administration of the commodity control programs on corn-hog, wheat and sugar beets, the Extension Service was active.

The corn-hog program came under the direction of a State Corn-hog Board of Review, whose membership consisted of the following farmers: Clarence Swanebeck, Genesee County; Harry Green, Macomb County; and Louis G. Hall, Cass County. These men worked with Vernon Church, State Statistician for the U.S.D.A.

The wheat program in the state was in charge of Edward Longnecker, in the employ of the Extension Service.

The Jones-Costigan Sugar Act—The Jones-Costigan Sugar Act, approved May 9, 1934, added sugar beets and sugar cane to the list of basic commodities covered by the Agricultural Adjustment Act. It authorized the establishment of annual marketing quotas for domestically produced sugar and for sugar imported into the United States. Processing taxes on sugar cane and sugar beets were authorized. As in the original Agricultural Adjustment Act, funds derived from this source were to be used for benefit payments to cooperating sugar beet and sugar cane farmers.

The sugar beet program was headed by C. R. Oviatt, with Roy E. Decker and Ralph Morrish carrying the field work.

County administration was by county allotment committees and community committees for each one of the different commodity programs. These farmer committeemen were elected by farmers generally with the community determined by political townships.

The sugar program was administered on the basis of factory districts rather than by counties. Community divisions were based on the fieldmen's districts used by the particular factory. This resulted in many counties in a complex county office set-up with the many organizations for administering the programs. As an example, in Gratiot

County there was a complete set of community and central committees for four programs: 1. Wheat, 2. Corn-hog, 3. Alma Sugar Factory district, 4. St. Louis Sugar Factory district.

The Soil Conservation and Domestic Allotment Act—In order that some farm program could continue after the Supreme Court decision, Congress immediately began work on legislation to take the place of invalidated parts of the Agricultural Adjustment Act. Sections 7 to 17, inclusive, of the Soil Conservation and Domestic Allotment Act were enacted on February 29, 1939, and became the chief basis of AAA agricultural conservation programs.

On the basis of the new legislation, the Agricultural Adjustment Administration entered the second major phase of its activity. In this second phase, emphasis still was placed on the problem of increasing agricultural income but the increase was sought primarily through payments for the adoption of land uses and farm practices which would conserve and build up soil fertility instead of through the adjustment of production or marketing.

Payments or other grants of aid were authorized to farmers who cooperated in a voluntary adjustment of their land and farming practices in line with the act's declared policy of soil conservation. The payments were based on the farmer's treatment or use of his land, the extent of adjustment required, or on the domestically consumed portion of his normal production of certain commodities, or a combination of these factors. Payments also were to be based on the productivity of the land on which soil conservation practices were adopted. The Federal obligations incurred by such payments were limited to \$500,000,000 annually.

The Amendments to the Soil Conservation and Domestic Allotment Act—The amendment specifying the mode of selection of local and county committees provides legal authority to use administrative procedure very similar to that which was already being followed as a result of the broad provision for utilization of local committees contained in the original act. The amendment requires the selection in a democratic manner of farmer committees, both community and county, to aid in the local administration of the programs. It specifies the appointment by the Secretary of Agriculture of State Committees of from three to five resident farmers. The State Director of the Agricultural Extension Service is an *ex-officio* member of the State Committee, and the county agricultural extension agent is an *ex-officio* member of the county committee.

The basis originally specified for determining payments to farmers was broadened by the inclusion of "their equitable share, as determined by the Secretary, of the national production of any commodity or commodities required for domestic consumption and exports." This represented a legislative change to an acreage allotment approach in place of the base-acreage approach of the earlier programs. It was a change that had already been begun administratively in the 1938 program. Methods of determination and apportionment of the national acreage allotments of certain crops are specified in the act.

State Organization—1938 Farm Act—In late March 1936, at a state-wide meeting, the farm program resulting from the Soil Conservation

and Domestic Allotment Act of 1936 was started in the state. The State Agricultural Conservation Committee consisted of three farmers—Maurice A. Doan, Chairman, of Gratiot County; Clarence W. Swanebeck, Genesee County; and Harry Green, Macomb County; and from the Extension Service, E. D. Longnecker.

In the state organization and educational campaign those from the Extension Service who took part were Roy Decker, Paul Rood, George Wenner, D. H. Hootman, Delmer LaVoi, A. C. Baltzer, James A. Porter, J. G. Hays, Jr., and R. V. Gunn. These men worked in the field until the field work was taken over by the field representatives of the State Committee. The state was divided into nine field districts with a farmer fieldman in charge of each district. Administrative duties of county agents were given over to the three farmer members of the county committees with the county agents acting only in educational and advisory capacities. This shifting of administrative responsibility continued until the 1938 county organizations resulted in someone other than the county agent acting as secretary in every county in the state.

Changes in State Committee—In November of 1936, Vernon N. Spencer of Kalkaska County was added as a farmer member of the State Committee, bringing the membership to five. In March of 1937, Harry Green of Macomb County ceased to be a member of the State Committee. In June 1937, Charles E. Bonine of Cass County became a farmer member of the State Committee, revising the membership to five. In August of 1937, E. D. Longnecker left the State Committee as Extension member to become Extension Specialist in Soils. His place as Extension member of the State Committee was filled by James A. Porter, Extension Specialist in Soils.

The Agricultural Adjustment Act of 1938 named the Director of Extension as the Extension Service representative on the State Committee. Mr. Porter became the representative of Director Baldwin on the committee after the 1938 Act became effective.

The duties of the representative of the Director have been confined chiefly to educational work. In November of 1938, there was set up a State Educational Committee to formulate educational programs and policies of the State Committee. This committee consisted of Maurice A. Doan, Director Baldwin, A. A. Applegate, Extension Editor, and J. A. Porter.

The general policy followed has been to put the responsibility onto the county committees for the formulating and conducting of the educational program.

Farm Soil Survey—In the fall of 1937, it was known that new agricultural legislation would call for a consideration of the soil on the individual farms in the setting up of farm allotments of soil-depleting crop acreage. In the latter part of 1937, community committeemen visited every farm in the state to make this survey.

This called for an intensive training of the local farmer committeemen. Each field on the farm was scored on four factors—1. topography; 2. erosion; 3. inherent productivity; 4. present productivity. Assistance to the State Committee was given by specialists from the Extension Service through the services of Paul Rood, A. B. Love, and Paul Barrett. From the Soil Conservation Service, Leo Jones, Frank Trull, and E. C. Sackrider helped in this training work.

PERSONNEL ADMINISTRATION

Robert James Baldwin		
Extension Assistant Dean of Agriculture.....	Jan. 1, 1911—	July 15, 1913
Superintendent of Extension.....	July 16, 1913—	June 30, 1914
Director of Extension Work.....	July 1, 1914—	
Karl Hanchett McDonel		
Supt. of Extension Schools.....	July 1, 1917—	June 30, 1921
Assistant to Extension Director.....	July 1, 1921—	Oct. 15, 1927
Assistant Director.....	Oct. 16, 1927—	

AGRICULTURAL ADJUSTMENT ADMINISTRATION

Edward Delbert Longnecker.....	May 21, 1934—	Aug. 31, 1937
Merrill G. Marshall.....	June 6, 1934—	Nov. 30, 1936
Civil Engineer, Compliance Super.		
Louis Gerard Hall (Assistant).....	Nov. 1, 1935—	Dec. 31, 1935
Andrew Campbell (Assistant).....	Nov. 1, 1935—	Dec. 31, 1935

AGRICULTURAL ECONOMICS

James Nathan McBride.....	Nov. 1, 1915—	Mar. 1, 1919
Also Director of Markets, Dec. 1, 1915		
Ralph Henry Ellsworth.....	May 1, 1916—	Dec. 31, 1917
Assistant to Market Director		
Hale Tennant (Field Agent in Marketing).....	May 4, 1918—	Dec. 31, 1924
Director of Markets, Mar. 1, 1919		
George C. Raviler.....	Feb. 1, 1919—	June 30, 1920
Willard Claude Cribbs.....	Oct. 1, 1919—	May 19, 1926
Gifford Patch, Jr.....	Sept. 1, 1920—	
George Anton Nahstoll.....	Mar. 1, 1925—	June 30, 1927
Reuben Veerin Gunn.....	Jan. 1, 1927—	
Arthur Howland.....	Jan. 1, 1927—	
Hugh Donald Hootman.....	Oct. 1, 1930—	June 30, 1931
Alden Butler Love.....	Oct. 1, 1930—	
John D. Martin.....	Oct. 13, 1930—	June 30, 1931
Claude Lawrence Nash.....	Jan. 1, 1931—	
Donald Herschel Stark.....	Sept. 1, 1937—	

AGRICULTURAL ENGINEERING

Orsel Edwin Robey (Farm Mechanics).....	Sept. 1, 1913—	Apr. 30, 1915
(Household Engineering).....	May 1, 1915—	June 30, 1931
Lawrence Fuller Livingston (Land Clearing).....	July 1, 1921—	Dec. 31, 1928
Put in charge of project Mar. 17, 1926		
A. J. McAdams (Land Clearing).....	July 1, 1922—	Jan. 10, 1924
George Amundson (Land Clearing).....	July 1, 1922—	
Made Project Leader, Feb. 1, 1929		
Nicholas Aloysius Kessler (Land Clearing).....	Feb. 1, 1924—	Jan. 31, 1929
Lawrence A. Bell (Temporary).....	Apr. 1, 1926—	Aug. 31, 1926
Lawrence A. Bell (Temporary).....	Apr. 1, 1927—	Oct. 31, 1927
Lawrence A. Bell (Temporary).....	June 1, 1928—	Aug. 31, 1928
Arthur John Bell.....	July 1, 1928—	
Lawrence A. Bell (Temporary).....	Jan. 1, 1929—	Dec. 31, 1929
Alfred D. Edgar.....	June 1, 1929—	Mar. 16, 1931
Herman Joseph Gallagher.....	July 1, 1929—	Feb. 29, 1936
Marvin F. Schweers.....	May 1, 1931—	Aug. 31, 1932
Donald George Ebinger.....	June 1, 1936—	

ANIMAL DISEASE CONTROL

Benjamin John Killham Mar. 16, 1930—

ANIMAL HUSBANDRY

William Franklin Raven, Deceased (Livestock) Apr. 1, 1909—Sept. 14, 1917
 In charge U. P. Extension June 16, 1915
 Clarence D. Cook (Livestock) July 1, 1917—Sept. 8, 1917
 Verne Alonzo Freeman (Livestock) Sept. 15, 1917—June 30, 1919
 Duncan Louis McMillan (Livestock) Apr. 1, 1918—Mar. 31, 1919
 Donald Williams (Livestock) Mar. 1, 1920—Feb. 28, 1922
 Verne Alonzo Freeman July 1, 1922—Aug. 31, 1929
 Harry Forest Moxley Jan. 1, 1928—
 Leonard Henry Blakeslee Aug. 1, 1929—Aug. 31, 1931
 Delmer Harold LaVoi Sept. 1, 1929—Aug. 15, 1938
 Evert Lowell Benton Aug. 1, 1938—

CONTINUING EDUCATION

Jennie Buell Oct. 1, 1925—June 30, 1926

CORN BORER WORK

Lawrence A. Bell Nov. 15, 1927—May 31, 1928
 Walter F. Morofsky Dec. 1, 1927—Mar. 31, 1928
 Goodwin S. Tolles Dec. 1, 1927—Mar. 31, 1928
 Arthur Russell Marston Jan. 1, 1927—Apr. 30, 1927
 Arthur Russell Marston Jan. 1, 1928—Mar. 31, 1928
 Maynard S. Grunder May 1, 1928—June 30, 1928
 Arthur John Bell Sept. 19, 1927—June 30, 1928
 Howard Christian Rather Mar. 16, 1927—June 30, 1928
 Bernard Remi Proulx Mar. 16, 1927—June 30, 1928

DAIRY HUSBANDRY

James Aaron Waldron Mar. 1, 1916—June 30, 1922
 Ozias Talcott Goodwin (Dairy Manufacture) Aug. 15, 1918—Aug. 31, 1919
 Arwed Charles Baltzer July 1, 1921—
 Homer Edward Dennison Jan. 1, 1922—Mar. 15, 1924
 Stanley J. Brownell July 1, 1922—Sept. 30, 1923
 James Grant Hays Nov. 1, 1922—
 Robert Henry Addy Dec. 1, 1922—Aug. 31, 1928
 Jamie Gardner Wells, Jr. Jan. 1, 1923—Mar. 31, 1927
 Karl Harold Miller Jan. 1, 1923—June 30, 1923
 George Girrback July 1, 1924—Jan. 31, 1929
 Warren DeLos Burrington Oct. 1, 1924—Aug. 15, 1931
 Russell E. Horwood June 1, 1927—Dec. 31, 1937
 Claire Whitlock Nelson Mar. 1, 1929—June 30, 1933
 Elmer N. Hansen June 1, 1929—Sept. 15, 1929
 George Augustus Bowling Apr. 1, 1930—June 30, 1931
 Jewell Mernus Jensen Nov. 1, 1935—
 Elmer Christian Scheidenhelm Jan. 1, 1936—
 Arthur Rashleigh Schubert (U. P.) Feb. 1, 1938—

EXTENSION LECTURER

Eben Mumford (Part-time) July 1, 1921—Apr. 1, 1924

FARM CROPS

Arthur Roy Potts Sept. 9, 1909—Mar. 31, 1915
 Ivin Karl Maystead July 1, 1915—May 15, 1917
 John Whitley Nicolson Feb. 1, 1916—Feb. 29, 1920
 William Murphy Sept. 4, 1917—June 30, 1918

Louis H. Gretton	Mar. 16, 1918—May 1, 1918
Ernest Kenneth Chamberlain	Feb. 15, 1919—Dec. 31, 1919
William Murphy	Aug. 1, 1919—Mar. 21, 1920
Howard Christian Rather	Apr. 1, 1920—June 15, 1928
Duane F. Rainey	Apr. 1, 1920—Aug. 31, 1926
A. Leal Bibbins	Apr. 1, 1920—Dec. 31, 1921
Grosvenor Ward Putnam	Jan. 1, 1922—Mar. 31, 1924
Larry D. Kurtz (U. P.)	Apr. 1, 1922—Sept. 30, 1922
George Elon Starr	Feb. 1, 1923—Apr. 9, 1923
Larry D. Kurtz (U. P.)	Apr. 1, 1923—Feb. 29, 1928
To Lower Peninsula	Oct. 1, 1923
Paul Robert Miller	May 1, 1924—Oct. 15, 1931
Clifford Elroy Skiver	Apr. 1, 1925—Oct. 15, 1927
Henry Carleton Moore (Trans. from Pot. and Veg.)	July 1, 1926—
Coland Marvin McCrary (Trans. from Pot. and Veg.)	July 1, 1926—Dec. 31, 1929
Ralph Hiram Morrish	Sept. 1, 1926—June 30, 1931
Duane F. Rainey	Mar. 17, 1927—June 30, 1928
Ernest Joseph Wheeler	July 1, 1927—Sept. 30, 1927
Clarence R. Oviatt	Nov. 1, 1927—Aug. 31, 1934
Harold Carl Kiebler	Apr. 1, 1928—Feb. 28, 1929
Bernard Daniel Kuhn (U. P.)	June 1, 1928—June 30, 1930
Roy Elbert Decker	Aug. 1, 1928—Mar. 31, 1939
Phillip Ralph Biebesheimer	Oct. 1, 1928—Jan. 31, 1929
George Frederick Wenner	Apr. 1, 1929—
Jesse Jennings Bird	Apr. 1, 1930—Dec. 31, 1932
Dennis Leon Clanahan (U. P.)	July 1, 1930—
Ralph Hiram Morrish	Nov. 1, 1934—Dec. 31, 1935
Harry A. Reiley (Temporary) (Potatoes)	Oct. 21, 1935—Dec. 20, 1935
Carter Monroe Harrison	Jan. 1, 1936—
Harry A. Reiley (Temporary) (Potatoes)	Nov. 15, 1936—Feb. 14, 1937
Alvin August Johnson	Apr. 1, 1939—

FARM LAND GAME

Russell George Hill	Sept. 1, 1937—
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FARM MANAGEMENT

Charles Philo Reed (Field Studies)	Oct. 1, 1912—May 15, 1917
Karl Hanchett McDonel (Field Studies)	Oct. 1, 1916—June 30, 1917
Charles H. Graves (Field Studies)	Aug. 27, 1917—Apr. 1, 1920
Will B. Sutherland (Asst. Field Studies)	Oct. 21, 1918—June 30, 1919
Howard M. Eliot	June 24, 1920—Dec. 31, 1920
H. B. Killough	July 1, 1921—June 30, 1922
Herbert Andrew Berg	Oct. 1, 1928—
Arthur M. Hauke	Jan. 1, 1931—July 15, 1935
Clyde Orville May	July 16, 1934—
Ralph Edmund Loomis	Dec. 15, 1935—June 30, 1936
John Clair Doneth	July 15, 1936—
Kenneth Ousterhout	Sept. 1, 1938—June 30, 1939

FORESTRY

Comfort A. Tyler	Apr. 23, 1912—Mar. 1, 1916
Edmund Carl Mandenberg	Sept. 1, 1916—Dec. 31, 1917
Edmund Carl Mandenberg	Jan. 1, 1919—Dec. 31, 1919
Raymond Frederick Kroodsmā	Oct. 1, 1924—Nov. 30, 1935
William Ira Bull	May 1, 1936—

HORTICULTURE*

Oliver Keese White	Apr. 1, 1909—Dec. 31, 1915
Clarence William Waid (Potatoes and Vegetables)	Feb. 1, 1914—Mar. 31, 1921
John Henry Carmody	Feb. 24, 1916—Oct. 1, 1917
John Allen Petrie	July 1, 1916—Apr. 15, 1917
Irving Thomas Pickford	Dec. 6, 1918—Oct. 31, 1920

*Vegetables transferred from Potatoes and Vegetables, July 1, 1926.

Thomas A. Farrand	Jan. 1, 1921—Dec. 12, 1923
Horace Albert Cardinell	Jan. 1, 1923—Feb. 28, 1934
George Elon Starr	Apr. 9, 1923—Feb. 28, 1931
Hugh Donald Hootman	Mar. 1, 1924—Sept. 30, 1930
Harold Paul Gaston (Temporary)	Mar. 1, 1926—June 30, 1926
August Henry Teske (Temporary)	Apr. 1, 1926—Oct. 31, 1926
Edwin Ewell (Apiculture, transferred from Insect Control)	July 1, 1928—Aug. 31, 1928
John Conrad Kremer (Apiculture)	July 1, 1928—June 30, 1935
Kenneth Post (Floriculture)	Aug. 15, 1928—Aug. 31, 1930
Paul Robert Krone (Floriculture)	Aug. 15, 1930—
Glenn L. Ricks	Dec. 1, 1930—June 30, 1931
George Wallis Woodbury	Mar. 1, 1931—June 30, 1931
Charles Harold Mahoney	June 15, 1931—Jan. 15, 1938
Hugh Donald Hootman	July 1, 1931—
Glenn L. Ricks	Mar. 1, 1934—Aug. 31, 1935
Russell Hiram Keltly (Apiculture)	July 1, 1935—
Thais Abia Merrill	Sept. 16, 1935—
Henry Lyle Seaton	Jan. 15, 1938—
Carl Dietz (U. P. Vegetable Gardening)	Apr. 1, 1938—May 31, 1938
Joseph H. Schultz (U. P. Vegetable Gardening)	Apr. 1, 1939—May 31, 1939

INSECT CONTROL AND APICULTURE*

Don Bion Whelan	July 1, 1915—May 31, 1919
Edwin Ewell (Apiculture)	May 1, 1918—Aug. 31, 1928
Transferred to Hort. July 1, 1928	
Russell M. Hain	Sept. 1, 1919—Mar. 31, 1922
John M. Harman	May 10, 1922—Aug. 31, 1925
Charles Bradford Dibble	July 1, 1927—

LANDSCAPE GARDENING

Orestis Isaiah Gregg	Jan. 1, 1927—
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LIVESTOCK**

William Franklin Raven, Deceased	Apr. 1, 1909—Sept. 14, 1917
Clarence D. Cook	July 1, 1917—Sept. 8, 1917
Verne Alonzo Freeman	Sept. 15, 1917—June 30, 1919
Duncan Louis McMillan	Apr. 1, 1918—Mar. 31, 1919
Donald Williams	Mar. 1, 1920—Feb. 28, 1922

PLANT PATHOLOGY

Jesse Howard Muncie	Sept. 1, 1929—
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POTATOES AND VEGETABLES†

Clarence William Waid (Horticulture)	Feb. 1, 1914—Mar. 31, 1921
Henry Carleton Moore (Potatoes)	July 16, 1917—Aug. 31, 1917
Henry Carleton Moore (Potato Culture)	Jan. 1, 1919—
James Wade Weston (Potato Culture)	Apr. 1, 1922—Feb. 28, 1926
Coland Marvin McCrary (Potato Culture)	Mar. 1, 1926—Dec. 31, 1929

POULTRY

Annabel Campbell	Feb. 1, 1918—June 30, 1920
Charles Henry Burgess	Sept. 1, 1917—June 30, 1918
Ernest C. Foreman	July 1, 1918—Nov. 30, 1921
Clarence Mudd Ferguson	Jan. 1, 1922—June 30, 1923
Raymond David Ure	Aug. 1, 1922—Apr. 1, 1924

*Apiculture transferred to Horticulture, July 1, 1928.

**Changed to Animal Husbandry. See this heading for complete personnel.

†Potatoes transferred to Farm Crops, July 1, 1926.

Vegetables transferred to Horticulture, July 1, 1926.

John Alfred Hannah	July 1, 1923—Dec. 31, 1934
Earl Sindecuse (Temporary)	July 1, 1923—Aug. 31, 1923
Otto J. Weisner	July 1, 1924—July 31, 1925
Raymond David Ure	July 1, 1924—Sept. 30, 1924
John McKay Moore	Sept. 1, 1925—Mar. 8, 1928
James Allison Davidson	Dec. 1, 1925—Oct. 5, 1927
Ray Lemuel Gulliver (U. P., Temporary)	July 1, 1926—Sept. 30, 1926
Leo Richard Arnold	Apr. 20, 1927—Aug. 31, 1931
Leon C. Todd	Jan. 16, 1928—Dec. 31, 1928
Edward Reuben Hancock	Apr. 1, 1928—Oct. 31, 1933
Otis Edmund Shear	Feb. 1, 1929—
Ernest Stevens Weisner	Jan. 1, 1934—Mar. 31, 1934
Ray A. Conolly	Apr. 1, 1934—Dec. 31, 1934
John McKay Moore	Jan. 1, 1935—
Ernest Stevens Weisner	Dec. 1, 1935—

PHOTOGRAPHY

James Henry Pratt	July 1, 1929—June 30, 1932
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INFORMATION SERVICE

Earl Russell Trangmar	Apr. 1, 1917—Apr. 1, 1919
James Blood Hasselman	July 1, 1919—June 30, 1933
James B. Haskins (Rural Press)	July 1, 1922—July 15, 1924
Len W. Feighner (Rural Press)	July 15, 1924—Dec. 13, 1928
John Silas Crossman (Asst. Agr'l Editor)	Oct. 1, 1925—Mar. 31, 1926
A. J. Patch (Asst. Ext. Editor)	Aug. 1, 1926—Dec. 31, 1935
Bernard Remi Proulx (Asst. Ext. Editor)	July 1, 1928—Sept. 30, 1928
Keith Himebaugh (Publicity)	July 1, 1927—Sept. 30, 1927
Keith Himebaugh (Radio)	July 1, 1928—June 30, 1934
Herbert A. Wood (Rural Press)	Jan. 1, 1929—Feb. 28, 1931
Joseph Adelord Sturgeon (Rural Press)	Mar. 1, 1931—Feb. 29, 1932
Elton R. Eaton (Rural Press)	Mar. 1, 1932—Feb. 28, 1933
Robert Jesse Coleman (Radio)	Aug. 1, 1934—
Albert Angelo Applegate (Editor)	Jan. 1, 1936—
Everett Bell Swingle (Assistant Editor)	Jan. 27, 1936—
Joseph George Duncan (Asst. Bull. Editor)	Feb. 24, 1936—

SOILS

Ezra Levin	July 1, 1916—June 30, 1921
George Manners Grantham	July 1, 1920—Aug. 31, 1925
Paul Mathew Harmer	Sept. 1, 1921—June 30, 1931
Orville Bryan Price	Sept. 1, 1925—Sept. 15, 1926
John Wilson Sims	Mar. 15, 1927—Jan. 31, 1930
Frank Willis Trull	July 1, 1927—June 30, 1928
James Albert Porter	June 1, 1928—Feb. 28, 1930
Russell Vaughan Tanner (Temporary)	Dec. 1, 1928—Mar. 31, 1929
Russell Vaughan Tanner (Temporary)	Dec. 1, 1929—Mar. 31, 1930
Paul Joseph Road	Feb. 1, 1930—
Everett Charles Sackrider	Feb. 1, 1930—Oct. 31, 1935
Russell Vaughan Tanner (Temporary)	Dec. 1, 1930—Mar. 31, 1931
John Wilk	Feb. 16, 1931—Apr. 5, 1931
Russell Vaughan Tanner (Temporary)	Jan. 1, 1932—Feb. 29, 1932
Paul Mathew Harmer	Nov. 1, 1935—
James Albert Porter	Mar. 1, 1936—
Paul Moore Barrett (Soil Conservation)	Jan. 1, 1937—
Louis Albert Wolfanger	Sept. 1, 1937—
Edward Delbert Longnecker	Sept. 1, 1937—

STATE DISCUSSION GROUP LEADER

William Frederick Johnston	Jan. 1, 1936—June 30, 1938
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UPPER PENINSULA EXTENSION

Leo M. Geismar	Mar. 1, 1912—May 31, 1913
James Wade Weston (Assistant)	Nov. 18, 1914—Aug. 31, 1917
William Franklin Raven	June 16, 1915—Sept. 14, 1917

COUNTY AGRICULTURAL AGENT LEADERS

Eben Mumford.....	Oct. 2, 1912—June 30, 1921
Charles Benjamin Cook (Assistant).....	Mar. 1, 1916—Mar. 1, 1918
Earl P. Robinson (Assistant).....	Sept. 1, 1917—Dec. 31, 1918
Harry B. Blandford (Assistant).....	Sept. 1, 1917—June 30, 1920
Frank Sandhammer (Assistant).....	Jan. 21, 1919—Mar. 15, 1920
James Wade Weston (Asst. to Leader, U. P.).....	Sept. 1, 1917—Mar. 31, 1922
Roswell Gilbert Carr (Assistant).....	Dec. 1, 1921—Jan. 31, 1934
Clinton Vede Ballard (Assistant).....	Dec. 1, 1921—Sept. 18, 1933
Edward Glen Amos (Assistant, U. P.).....	Nov. 16, 1922—Mar. 31, 1929
Hale Tennant (In charge of County Agents).....	Sept. 30, 1921—June 30, 1924
Jamie Gardner Wells, Jr. (Assistant, U. P.).....	Apr. 16, 1929—
Clinton Vede Ballard.....	Sept. 19, 1933—
Roswell Gilbert Carr (Asst. to Leader).....	Feb. 1, 1934—Apr. 30, 1934
Roswell Gilbert Carr (Asst. to Leader and Director Farm Security).....	May 1, 1934—
Roy Elbert Decker.....	Apr. 1, 1939—

DISTRICT SUPERVISORS

M. J. Thompson (Northwestern).....	Apr. 1, 1912—Mar. 15, 1913
James Francis Zimmer (Northwestern).....	June 2, 1913—Sept. 30, 1914
H. F. Williams (South central).....	Sept. 26, 1912—(early) 1914
Leon L. Drake (Grand Traverse region).....	Feb. 1, 1925—July 15, 1930
Willard Claude Cribbs.....	May 20, 1926—Nov. 30, 1928

COUNTY AGRICULTURAL AGENTS

ALCONA COUNTY

R. E. Prescott (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
With Iosco County	
Casper Blumer.....	Jan. 1, 1928—
Iosco County in District.....	Aug. 1, 1934—Nov. 30, 1935
Oscoda County in District.....	Dec. 1, 1935—

ALGER COUNTY

A. L. Olson (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Regular agent.....	Nov. 19, 1917—Dec. 15, 1919
Chris P. Johnson.....	Apr. 1, 1920—June 30, 1923
Frank E. Greenwood.....	Aug. 1, 1923—Mar. 31, 1926
William Cargo.....	Jan. 6, 1937—
District with Luce, Mackinac, Schoolcraft Counties	

ALLEGAN COUNTY

Charles Benjamin Cook.....	Mar. 1, 1913—Feb. 29, 1916
Alfred Bentall.....	Apr. 18, 1916—Aug. 31, 1922
Clare L. Burton (Assistant, Temporary Emergency).....	Nov. 26, 1917—June 30, 1918
Orestis Isaiah Gregg.....	Sept. 16, 1922—Dec. 31, 1926
Floyd Barden.....	Jan. 1, 1927—Apr. 30, 1927
Ralph Linton Helm.....	May 1, 1927—Sept. 7, 1929
Arthur Dewey Morley.....	Sept. 1, 1929—

ALPENA COUNTY

Harvey G. Smith (Farm Management Field Studies).....	July 1, 1912—Dec. 31, 1915
District with Montmorency, Presque Isle Counties	
David Woodman.....	Mar. 1, 1916—Dec. 31, 1917
Frank L. True.....	Jan. 1, 1918—Sept. 3, 1918
Clyde O. T. Scheetz.....	Mar. 1, 1919—Oct. 31, 1922
Colond Marvin McCrary.....	Feb. 1, 1923—Feb. 28, 1926
Charles Horace Blivin.....	Mar. 1, 1926—

ANTRIM COUNTY

Rollin DeWitt Bailey (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
District with Montmorency, Otsego Counties	
Willard Claude Cribbs (Emergency).....	Jan. 1, 1918—Aug. 30, 1919
Leon L. Drake.....	Jan. 16, 1920—Dec. 31, 1924
Kalkaska in district.....	Oct. 1, 1921—Dec. 31, 1922
Don Beebe Jewell.....	Jan. 23, 1925—Mar. 15, 1927
Philip E. Heim.....	Aug. 1, 1927—Dec. 31, 1928
Kenneth Ousterhout.....	Jan. 1, 1929—Dec. 31, 1937
Walter Gerald Kirkpatrick.....	Jan. 1, 1938—

ARENAC COUNTY

R. D. Harrison, Jr. (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Bay County in District.....	Nov. 26, 1917—June 30, 1918
Lewis Jarvis Carter.....	May 1, 1923—May 31, 1926
James McKinley Gorsline.....	Jan. 1, 1930—

BARAGA COUNTY

Irving Kirshman (Temporary Emergency).....	Mar. 11, 1918—Nov. 30, 1919
Lester Vance Benjamin.....	Apr. 1, 1920—May 31, 1922
George Frederick Biekkola.....	Jan. 1, 1931—

BARRY COUNTY

Roy G. Brumm (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
	Dec. 12, 1917—Dec. 31, 1918
Russell Vaughan Tanner.....	Jan. 11, 1919—Apr. 15, 1920
Frank W. Bennett.....	Apr. 5, 1920—Mar. 31, 1925
Paul Joseph Rood.....	Apr. 1, 1925—Jan. 31, 1930
Harold John Foster.....	June 10, 1930—

BAY COUNTY

R. D. Harrison, Jr. (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Arenac County in District.....	Nov. 26, 1917—June 30, 1918
William Edward McCarty.....	Jan. 1, 1927—

BENZIE COUNTY

A. W. Mebert (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Leelanau County in District	
Robert A. Wiley.....	May 2, 1918—Feb. 15, 1919
Leelanau County in District	
James Lewis Kraker.....	Jan. 21, 1919—Apr. 15, 1924
Edward Levi Hammond.....	Jan. 1, 1929—Feb. 29, 1932
Don Beebe Jewell.....	Mar. 1, 1932—
Leelanau County in District	

BERRIEN COUNTY

Harry Joseph Lurkins.....	May 1, 1916—May 31, 1920
Don Albert Meeker (Assistant).....	Sept. 10, 1917—Dec. 1, 1917
Frank Lester Simanton.....	June 16, 1920—Apr. 30, 1927
Harry Joseph Lurkins.....	June 13, 1927—

BRANCH COUNTY

Julius William Chapin.....	Apr. 1, 1913—May 15, 1916
Claude Lawrence Nash.....	July 1, 1916—June 30, 1923
Chester Ward Andrews.....	Aug. 1, 1923—Jan. 31, 1929
Gordon Richard Schlubatis.....	Feb. 1, 1929—

CALHOUN COUNTY

Ellsworth Burnett More (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
	Dec. 12, 1917—Sept. 21, 1918
Herbert George Clothier.....	Nov. 15, 1918—Feb. 15, 1919
Ellsworth Burnett More.....	Mar. 16, 1919—Apr. 1, 1919
Paul Clark Jamieson.....	Apr. 16, 1919—July 15, 1921
Raymond M. Roland.....	July 8, 1921—Dec. 31, 1922
Bishop Burbank Adams.....	Mar. 1, 1923—Dec. 31, 1924
Everett Charles Sackrider.....	Jan. 1, 1929—Feb. 28, 1930
Leon H. Robbins.....	Mar. 1, 1930—May 31, 1931
Ralph Linton Helm.....	June 1, 1931—

CASS COUNTY

W. D. Jones (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
David Woodman.....	Jan. 1, 1918—Apr. 30, 1920
Carl May Kidman.....	May 1, 1920—Mar. 14, 1921
Emil Leo Kunze.....	June 1, 1921—Aug. 15, 1923
Claude Lawrence Nash.....	Aug. 16, 1923—Apr. 5, 1925
Harold Herbert Barnum.....	Apr. 6, 1925—Apr. 15, 1929
Lynn Post.....	Apr. 9, 1929—Jan. 1, 1932
George Sherman McIntyre.....	Feb. 8, 1932—
Elmer Leroy Deo (Assistant).....	May 1, 1939—

CHARLEVOIX COUNTY

George A. Kilborn (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Emmet County in District	
Clinton Fiske Smith (Emergency).....	Mar. 2, 1918—Feb. 15, 1919
Cliff Waldron Wing.....	Apr. 16, 1919—Dec. 31, 1921
Beryl Otto Hagerman.....	Apr. 1, 1922—May 31, 1924
Burton Clifford Mellencamp.....	June 1, 1924—

CHEBOYGAN COUNTY

Carl Henry Knopf.....	Dec. 1, 1915—Dec. 31, 1917
Ira Benona McMurtry.....	Jan. 22, 1918—Oct. 31, 1920
Don Beebe Jewell.....	Feb. 15, 1921—Dec. 31, 1923
Paul Moore Barrett.....	Jan. 1, 1929—Dec. 31, 1936
Albert A. Griffith.....	Jan. 1, 1937—

CHIPPEWA COUNTY

Emil Leo Kunze.....	June 11, 1917—May 30, 1921
Tracey Roy Shane.....	Aug. 1, 1921—Jan. 31, 1922
Duncan Louis McMillan.....	Apr. 1, 1924—

CLARE COUNTY

W. J. Kennedy (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
	Dec. 18, 1917—June 30, 1918
Paul Dillingham Gibson.....	Aug. 15, 1928—

CLINTON COUNTY

O. C. Hollister (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
P. P. Pope.....	Apr. 20, 1918—Sept. 30, 1919
Howard Victor Kittle.....	Feb. 1, 1920—Oct. 31, 1926
Clare L. Burton.....	Nov. 16, 1926—Dec. 31, 1933
Roscoe Glenn Smith.....	Feb. 1, 1934—

CRAWFORD COUNTY

William Frederick Johnston (Temporary Emergency).....	Apr. 9, 1917—Oct. 31, 1917
District with Ogemaw, Oscoda, Roscommon Counties	
William Frederick Johnston.....	Jan. 1, 1918—Dec. 31, 1919
Roscommon County in District	
Rollin DeWitt Bailey.....	May 1, 1921—Apr. 3, 1928
Arthur Ward Glidden.....	Apr. 1, 1934—Dec. 31, 1937
District with Montmorency, Otsego Counties	
Lloyd Wendell Barnes.....	Jan. 1, 1938—
District with Kalkaska County	

DELTA COUNTY

Benjamin Purdy Pattison.....	May 15, 1917—June 30, 1921
Joseph Earl Turner.....	Apr. 15, 1922—Nov. 27, 1934
Elwyn A. Wenner.....	Feb. 1, 1935—

DICKINSON COUNTY

Clinton Vede Ballard.....	July 1, 1915—Feb. 29, 1920
Karl Harold Miller.....	Mar. 20, 1920—Dec. 31, 1922
Arthur Joseph Lonsdorf.....	Feb. 1, 1923—

EATON COUNTY

Fred Curtiss (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Thomas A. Farrand (Emergency).....	Apr. 9, 1918—Apr. 30, 1919
Roy Elbert Decker.....	Aug. 20, 1919—Nov. 30, 1921
Ralph Whitcomb Tenny.....	Dec. 1, 1921—Nov. 30, 1924
Clair Taylor.....	Dec. 1, 1924—Jan. 31, 1929
Hans Emil Kardel.....	Mar. 1, 1929—

EMMET COUNTY

George A. Kilborn (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
District with Charlevoix County	
Keats Kendall Vining.....	Jan. 1, 1918—Nov. 30, 1921
Dwight C. Cavanaugh.....	Dec. 8, 1921—Mar. 31, 1924
Stanley James Culver.....	Apr. 1, 1924—Aug. 15, 1928
Arthur Rashleigh Schubert.....	Aug. 15, 1928—May 10, 1935
Robert Sharpe Lincoln.....	May 10, 1935—

GENESEE COUNTY

Ward H. Parker (Farm Management Field Studies).....	Apr. 1, 1913—Jan. 27, 1914
J. F. Rieman (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Sidney Samuel Smith.....	Jan. 9, 1918—Feb. 28, 1926
James Renwick Campbell.....	Mar. 1, 1926—

GLADWIN COUNTY

U. G. Reynolds (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Allen B. Schlichter (Temporary Emergency).....	Feb. 1, 1918—Mar. 13, 1918
(Died)	
Charles Edwin Atwater.....	Apr. 30, 1918—Sept. 16, 1922
Jesse Brown Huggett.....	Dec. 1, 1929—

GOGEBIC COUNTY

James Frank Kadonsky.....	July 1, 1914—June 30, 1919
Carl Edwin Gunderson.....	July 1, 1919—

GRAND TRAVERSE COUNTY

Myron Edward Duckles (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
District with Kalkaska County	
Myron Edward Dickles.....	Nov. 19, 1917—Feb. 15, 1919
Robert A. Wiley.....	Feb. 16, 1919—Oct. 31, 1920
Charles Edwin Atwater.....	Sept. 17, 1922—Apr. 30, 1924
Charles Edwin Atwater.....	Mar. 15, 1925—Oct. 10, 1926
District with Leelanau County	
Carl Harvey Hemstreet.....	May 16, 1934—

GRATIOT COUNTY

C. J. Chambers (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Clayton Thurston Cook.....	July 1, 1921—Nov. 30, 1921
Cecil Perth Pressley.....	Mar. 1, 1922—Aug. 31, 1924
Harold Cecil Stinson.....	Aug. 16, 1928—Apr. 21, 1934
James Albert Porter.....	Apr. 16, 1934—Feb. 29, 1936
Clinton Pomeroy Milham.....	Mar. 1, 1936—

HILLSDALE COUNTY

George B. Smith (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
John Wilson Sims.....	July 7, 1920—Sept. 30, 1922
Roy W. Weinberg.....	Dec. 1, 1922—Nov. 30, 1923
Otto J. Weisner.....	Aug. 1, 1925—Dec. 31, 1925
John Vernon Sheap.....	Mar. 10, 1926—Oct. 31, 1927

HOUGHTON COUNTY

Leo M. Geismar.....	June 1, 1913—July 18, 1929
Earl Roberts.....	Jan. 1, 1930—

HURON COUNTY

L. L. McCarty (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
James Renwick Campbell.....	July 1, 1920—Oct. 6, 1921
Ellis Eugene Twing.....	Oct. 3, 1921—Aug. 31, 1924
David Woodman.....	Sept. 1, 1924—June 12, 1928
Emmett Leroy Raven.....	June 10, 1928—

INGHAM COUNTY

Frank Seeley (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Frank Seeley.....	Feb. 20, 1918—June 30, 1918
Jamie Gardner Wells, Jr.....	Apr. 1, 1927—Apr. 15, 1929
Harold Herbert Barnum.....	Apr. 16, 1929—

IONIA COUNTY

Arthur P. Loomis (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Harry L. Carr.....	May 1, 1922—Apr. 30, 1923
Ralph Linton Helm.....	May 1, 1923—Apr. 30, 1927
Willard Claude Cribbs.....	Dec. 1, 1928—Dec. 31, 1936
District with Isabella, Montcalm Counties	
Willard Claude Cribbs.....	Jan. 1, 1937—

IOSCO COUNTY

R. E. Prescott (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
District with Alcona County	
Clinton Pomeroy Milham.....	Apr. 9, 1918—Mar. 31, 1920
Casper Blumer.....	Jan. 1, 1928—Nov. 30, 1935
District with Alcona County	
Wilton Lyman Finley.....	Jan. 15, 1936—

IRON COUNTY

Roy Gabriel Hoopingarner.....	Sept. 1, 1912—Apr. 15, 1918
Dwight Clark Long.....	Apr. 16, 1918—Oct. 31, 1920
W. Floyd Mamby.....	Mar. 10, 1921—Jan. 31, 1922
Earl Roberts.....	Mar. 1, 1922—Dec. 31, 1929
Arthur Wilfred Otterbein.....	Jan. 1, 1930—

ISABELLA COUNTY

Stephen S. Fall (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Howard Delos Corbus.....	Apr. 29, 1918—June 30, 1919
Willard Claude Cribbs.....	Dec. 1, 1928—Dec. 31, 1935
District with Ionia, Montcalm Counties	
John C. Wilk (Assistant, Emergency).....	Aug. 1, 1933—Oct. 31, 1933
John Harold Breyfogle.....	Jan. 1, 1936—Dec. 31, 1936
Harry Kerr Wakefield.....	Jan. 1, 1937—

JACKSON COUNTY

Ernest C. Fowler (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Ernest C. Fowler.....	Nov. 1, 1917—Jan. 15, 1918
John Vernon Sheap.....	Jan. 23, 1918—Dec. 31, 1919
Clinton Vede Ballard.....	Mar. 1, 1920—Nov. 30, 1921
Roy Elbert Decker.....	Dec. 1, 1921—July 31, 1928
Stanley James Culver.....	Aug. 16, 1928—

KALAMAZOO COUNTY

Jason Woodman.....	Nov. 1, 1912—Oct. 31, 1919
Ralph Leslie Olds.....	Nov. 1, 1919—

KALKASKA COUNTY

Myron Edward Duckles (Temporary Emergency).....	May 1, 1917—Oct. 3, 1917
District with Grand Traverse County	
Ellis Eugene Twing.....	Jan. 9, 1918—Oct. 1, 1921
Leon L. Drake.....	Oct. 1, 1921—Dec. 31, 1922
District with Antrim County	
Errol S. Bird.....	Mar. 1, 1923—Apr. 15, 1924
John Harold Breyfogle.....	July 9, 1928—July 31, 1930
Bohn Edward Musgrave.....	July 24, 1930—Dec. 31, 1933
Harry Lee Barnum.....	July 1, 1934—Dec. 31, 1937
District with Missaukee County	
Loyd Wendell Barnes.....	Jan. 1, 1938—
District with Crawford County	

KENT COUNTY

Carl J. Seidel (Temporary Emergency).....	Sept. 24, 1917—Oct. 31, 1917
Carl J. Seidel.....	Nov. 1, 1917—June 25, 1918
J. Hackley Skinner.....	Sept. 16, 1912—Nov. 1, 1915
Harvey George Smith.....	Jan. 1, 1916—Dec. 31, 1918
Roswell Gilbert Carr.....	Jan. 16, 1919—Nov. 30, 1921
Keats Kendall Vining.....	Dec. 1, 1921—

LAKE COUNTY

Chas. Lovell Rose (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
District with Osceola County	
Lowell Brandon Thomas.....	Apr. 1, 1929—Sept. 30, 1933
Harold J. Larsen.....	Jan. 1, 1934—
District with Mason County	

LAPEER COUNTY

John W. Scully (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Leon Thomas Bishop.....	Mar. 30, 1918—Oct. 31, 1920
Stanley Frederick Wellman.....	Nov. 1, 1920—Aug. 31, 1921
A. J. Patch.....	Sept. 1, 1921—Oct. 31, 1924
Clarence Lambert Bolander.....	Jan. 1, 1931—Apr. 15, 1935
Richard Casper Lott.....	Apr. 8, 1935—

LEELANAU COUNTY

A. W. Mebert (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
District with Benzie County	
Robert A. Wiley.....	May 2, 1918—Feb. 15, 1919
District with Benzie County	
Victor Carlton Vaughan.....	Oct. 4, 1920—Dec. 31, 1922
Charles Edwin Atwater.....	Mar. 15, 1925—Oct. 10, 1926
District with Grand Traverse County	
Don Beebe Jewell.....	Mar. 1, 1932—
District with Benzie County	

LENAWEE COUNTY

Curtis Linden Coffeen.....	Aug. 23, 1915—Apr. 1, 1920
Ralph Joseph Carr.....	Apr. 1, 1920—Mar. 31, 1922
Curtis Linden Coffeen.....	May 1, 1922—May 10, 1926
Alfa Burtus Van Schoik.....	Nov. 1, 1926—Nov. 30, 1928
Clarence E. Ripper (Emergency Assistant).....	Aug. 1, 1933—Oct. 31, 1933
Clinton Pomeroy Milham.....	Feb. 11, 1934—Feb. 29, 1936
Louis Gerard Hall.....	Apr. 6, 1936—

LIVINGSTON COUNTY

Horace Wakeman Norton (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Fred S. Dunks.....	Feb. 20, 1918—Feb. 28, 1922
Clarence Lambert Bolander.....	May 10, 1922—Dec. 31, 1930
Mather Francis Thurston (Emergency Assistant).....	Aug. 5, 1933—Oct. 31, 1933
Sidney Benjamin Thomas.....	Nov. 1, 1934—

LUCE COUNTY

Melvin Arthur Leach (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
District with Mackinac County	
Melvin Arthur Leach.....	Nov. 1, 1917—June 30, 1918
Roy Harry Cameron.....	July 1, 1918—July 31, 1926
Calvin P. West.....	Nov. 1, 1926—Feb. 29, 1932
William Cargo.....	Jan. 6, 1937—
District with Alger, Mackinac, Schoolcraft Counties	

MACKINAC COUNTY

Melvin Arthur Leach (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
District with Luce County	
William Cargo.....	Jan. 6, 1937—
District with Alger, Luce, Schoolcraft Counties	

MACOMB COUNTY

R. G. Potts (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Howard Victor Kittle.....	June 15, 1918—Aug. 31, 1919
Erwin Oliver Anderson.....	Sept. 23, 1919—Mar. 9, 1920
William Murphy.....	Mar. 22, 1920—Mar. 31, 1925
George Samuel Hedrick.....	Apr. 1, 1925—Mar. 31, 1927
William Murphy.....	Apr. 1, 1927—

MANISTEE COUNTY

Frank Sandhammer.....	July 1, 1916—Jan. 20, 1919
Carl Henry Knopf.....	Jan. 16, 1919—Mar. 15, 1923
Harold McGlothlin Vaughan.....	Mar. 16, 1923—Jan. 31, 1926
Justin Cletus Cash.....	Feb. 1, 1926—Mar. 31, 1927
Wayne Irving Crampton.....	Apr. 1, 1927—

MARQUETTE COUNTY

Lee Roy Walker.....	July 1, 1915—
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MASON COUNTY

Russell Vaughan Tanner.....	Feb. 16, 1916—Aug. 27, 1917
Wesley J. Cook.....	Aug. 20, 1917—Aug. 31, 1919
Kris Paul Bemis.....	Mar. 15, 1920—Sept. 15, 1923
Orley Glen Barrett.....	July 21, 1924—Oct. 31, 1926
Harold J. Larsen.....	May 1, 1930—
District with Lake County.....	Jan. 1, 1934—
Russell Nelson Johnson (Assistant).....	May 1, 1939—

MECOSTA COUNTY

B. J. Ford (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Paul H. Smith.....	Mar. 30, 1918—Dec. 31, 1919
Murray F. Jackson.....	Feb. 1, 1920—Mar. 31, 1925
Ellis Eugene Twing.....	May 1, 1925—Dec. 31, 1933
Bohn Edward Musgrave.....	Jan. 1, 1934—

MENOMINEE COUNTY

Elton Brainard Hill.....	July 1, 1916—Jan. 15, 1919
Edward Glen Amos.....	Feb. 21, 1919—Aug. 31, 1919
Irving Kirshman.....	Dec. 1, 1919—Nov. 30, 1922
Karl Knaus.....	June 15, 1923—June 30, 1927
Clifford Elroy Skiver.....	Oct. 16, 1927—June 15, 1930
Bernard Daniel Kuhn.....	July 1, 1930—
George Delos Hurrell (Assistant).....	May 1, 1939—

MIDLAND COUNTY

H. W. Hock (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
William F. Bandeen (Emergency).....	Mar. 20, 1918—Oct. 10, 1918
Ira Benona McMurtry.....	Nov. 1, 1920—Nov. 30, 1923
Roy W. Weinberg.....	Jan. 1, 1924—Aug. 31, 1925
Byron Leonard Braamse.....	Jan. 1, 1926—Apr. 30, 1929
Charles Lewis Crasper.....	May 1, 1929—
Calvin Mateer Meredith (Assistant).....	May 1, 1939—

MISSAUKEE COUNTY

Harry Lee Barnum.....	Mar. 6, 1917—Sept. 1, 1920
Paul H. Smith.....	Jan. 19, 1921—Dec. 21, 1922
Harry Lee Barnum.....	July 1, 1926—
District with Kalkaska County.....	July 1, 1934—Dec. 31, 1937
District with Roscommon County.....	Sept. 1, 1934—

MONROE COUNTY

J. B. Winslow (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Ralph Joseph Carr.....	Mar. 30, 1918—Mar. 31, 1920
Mack Cyrus Thomas.....	Apr. 15, 1920—May 25, 1921
Clare L. Burton.....	Apr. 16, 1923—Nov. 15, 1926
Ralph W. Kidder.....	Jan. 1, 1927—Feb. 28, 1930
Chester Ward Andrews.....	Mar. 1, 1930—

MONTCALM COUNTY

Edwin D. Greenhoe (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Gifford Patch, Jr.	Apr. 17, 1918—Aug. 31, 1920
Clair Taylor.....	Nov. 1, 1920—Dec. 31, 1920
B. Eldon Shaffer.....	Jan. 1, 1921—June 30, 1923
Willard Claude Cribbs.....	Dec. 1, 1928—Dec. 31, 1935
District with Ionia, Isabella Counties	
Ernest Kenneth Chamberlain (Emergency Assistant).....	Aug. 1, 1933—Oct. 31, 1933
Victor Clement Beal.....	Jan. 16, 1936—

MONTMORENCY COUNTY

Harvey George Smith (Farm Management Field Studies). July 1, 1912—Dec. 31, 1915	
District with Alpena, Presque Isle Counties	
Rollin DeWitt Bailey (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
District with Antrim, Otsego Counties	
Lawrence R. Queal.....	Apr. 6, 1918—Jan. 1, 1919
District with Otsego County	
Howard Hindes.....	Apr. 23, 1919—Jan. 31, 1920
Harold D. Lakin.....	Apr. 8, 1929—Sept. 30, 1933
Arthur Ward Glidden.....	Jan. 15, 1934—
District with Otsego County	
Jan. 15, 1934—	
District with Crawford County.....	Apr. 1, 1934—Dec. 31, 1937

MUSKEGON COUNTY

Ralph Leslie Olds.....	Mar. 1, 1916—Oct. 31, 1919
O. F. Marvin (Temporary).....	Nov. 1, 1919—Dec. 31, 1919
S. J. Linck.....	Feb. 1, 1920—Nov. 1, 1920
Dwight Clark Long.....	Nov. 1, 1920—May 15, 1923
Carl Henry Knopf.....	May 16, 1923—
Clarence Claude Mullett (Assistant).....	July 1, 1929—Sept. 30, 1929

NEWAYGO COUNTY

Harry B. Blandford.....	June 10, 1913—Aug. 31, 1917
Hugh M. Van Aken (Assistant, Temporary Emergency).....	Sept. 10, 1917—Nov. 7, 1917
Simon Harkema.....	Oct. 22, 1917—Oct. 31, 1919
Clair Taylor.....	Jan. 1, 1921—Nov. 30, 1924
Harold Cecil Stinson.....	Dec. 1, 1924—Aug. 15, 1928
Harold John Foster.....	Sept. 24, 1928—Sept. 30, 1929
Clarence Claude Mullett.....	Oct. 1, 1929—

OAKLAND COUNTY

Harry McCracken (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Charles Benjamin Cook.....	Mar. 1, 1918—Dec. 31, 1923
Harold McClothlin Vaughan.....	Feb. 1, 1926—Jan. 15, 1931
Karl Deanor Bailey.....	Feb. 1, 1931—

OCEANA COUNTY

Bernie F. Beach (Temporary Emergency).....	Aug. 15, 1917—Oct. 31, 1917
Bernie F. Beach.....	Nov. 1, 1917—Aug. 31, 1919
Irving Thomas Pickford.....	Nov. 1, 1920—Oct. 31, 1923
Carl Harvey Hemstreet.....	May 1, 1924—May 15, 1934
James Ferdinand Thar.....	Mar. 15, 1935—Feb. 28, 1938
Lyle Eugene Tompkins.....	Mar. 1, 1938—

OGEMAW COUNTY

William Frederick Johnston (Temporary Emergency).....	Apr. 9, 1917—Oct. 31, 1917
District with Crawford, Oscoda, Roscommon Counties	
William Edward McCarthy.....	June 15, 1919—Dec. 31, 1926
Ralph Byers Coulter.....	Mar. 1, 1927—

ONTONAGON COUNTY

Roswell Gilbert Carr.....	Nov. 15, 1915—Jan. 15, 1919
William Noble Clark.....	Feb. 15, 1922—Aug. 15, 1927
Albert B. Dorrance (Assistant).....	Aug. 15, 1927—Oct. 31, 1927
Milton S. Francis.....	Nov. 1, 1927—Apr. 30, 1935
Arthur Rashleigh Schubert.....	May 11, 1935—Jan. 31, 1938
Kauno John Moilanen.....	June 1, 1938—

OSCEOLA COUNTY

Charles Lovell Rose (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
District with Lake County	
Charles Lovell Rose.....	Nov. 1, 1917—Feb. 29, 1920
Cliff Waldron Wing.....	Mar. 6, 1922—Apr. 20, 1923
Ralph Trafelet.....	Jan. 1, 1929—

OSCODA COUNTY

William Frederick Johnston (Temporary Emergency).....	Apr. 9, 1917—Oct. 31, 1917
District with Crawford, Ogemaw, Roscommon Counties	
Casper Blumer.....	Dec. 1, 1935—
District with Alcona County	

OTSEGO COUNTY

Rollin DeWitt Bailey (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
District with Antrim, Montmorency Counties	
Arthur Clinton Lytle.....	May 1, 1919—July 15, 1930
Leon L. Drake.....	July 16, 1930—Dec. 31, 1933
Arthur Ward Glidden.....	Jan. 15, 1934—
District with Montmorency County	
District with Crawford County	
Winfield Sprague Harrison (Assistant).....	Apr. 1, 1934—Dec. 31, 1937
	May 1, 1939—

OTTAWA COUNTY

Delory Lesly Hagerman.....	Jan. 1, 1916—Feb. 9, 1920
W. F. Van Buskirk (Assistant, Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Duncan Louis McMillan (Assistant).....	Dec. 18, 1917—Mar. 31, 1918
Beryl Otto Hagerman (Assistant, Temporary).....	Feb. 12, 1918—May 17, 1919
Clinton Pomeroy Milham.....	Apr. 1, 1920—Feb. 10, 1934
Leo Richard Arnold.....	Feb. 19, 1934—

PRESQUE ISLE COUNTY

Harry G. Smith (Farm Management Field Studies).....	July 1, 1912—Dec. 31, 1915
District with Alpena, Montmorency Counties	
Carl May Kidman.....	Apr. 20, 1917—Apr. 30, 1920
Edward Samuel Brewer.....	Apr. 26, 1920—Apr. 30, 1921
Colond Marvin McCrary.....	May 15, 1921—Jan. 31, 1923
Ivan J. Sours.....	Feb. 15, 1923—Nov. 30, 1923
Frank B. Thompson.....	Apr. 1, 1927—Aug. 15, 1927
John Allen Brown.....	Aug. 15, 1927—

ROSCOMMON COUNTY

William Frederick Johnston (Temporary Emergency).....	Apr. 9, 1917—Oct. 31, 1917
District with Crawford, Ogemaw, Oscoda Counties	
William Frederick Johnston.....	Jan. 1, 1918—Dec. 31, 1919
District with Crawford County	
Harry Lee Barnum.....	Sept. 1, 1934—
District with Missaukee County	

SAGINAW COUNTY

Earl P. Robinson.....	Apr. 1, 1913—Aug. 31, 1917
Jesse Stutsman.....	Sept. 20, 1917—Nov. 30, 1919
Arthur Grant Bovay.....	Mar. 1, 1920—June 30, 1923
Alden B. Love.....	Aug. 6, 1923—Sept. 30, 1930
Leonard James Braamse.....	Oct. 15, 1930—

SANILAC COUNTY

Grant Smith (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
John D. Martin.....	June 1, 1920—Dec. 31, 1928
Carroll J. Hart.....	Jan. 1, 1929—Dec. 31, 1931
John D. Martin.....	Feb. 1, 1932—June 30, 1934
Cecle C. Conolly (Assistant, Emergency).....	Aug. 12, 1933—Oct. 31, 1933
Russell S. Wait.....	May 15, 1934—Jan. 31, 1937
Clarence Edward Prentice.....	Feb. 1, 1937—

SAINT CLAIR COUNTY

Roy M. Shane (Assistant, Temporary Emergency).....	Jan. 5, 1918—June 30, 1918
L. V. Crandell.....	Mar. 1, 1913—Mar. 31, 1915
Clark Louis Brody.....	Apr. 1, 1915—Feb. 28, 1921
Carl May Kidman.....	Mar. 15, 1921—Mar. 31, 1925
Claude Lawrence Nash.....	Apr. 6, 1925—Apr. 30, 1927
Earl C. McCarty.....	May 1, 1927—

SAINT JOSEPH COUNTY

John Martin Wendt.....	Dec. 15, 1914—Dec. 31, 1919
Alem John Hutchins.....	Feb. 1, 1920—Aug. 31, 1922
Leo Ross Binding.....	Sept. 1, 1922—Oct. 31, 1926
George F. Gray (Assistant, Emergency).....	Aug. 1, 1933—Oct. 31, 1933
James Peter Hoekzema.....	Jan. 15, 1934—

SCHOOLCRAFT COUNTY

Edward Glen Amos.....	July 1, 1916—Dec. 31, 1917
George Fred Kinsting (Emergency).....	Apr. 8, 1918—June 30, 1919
Cecil Perth Pressley.....	Nov. 5, 1919—Dec. 31, 1921
Tracey Roy Shane.....	Feb. 1, 1922—Nov. 30, 1924
Lee Stewart.....	Sept. 20, 1927—Feb. 29, 1936
William Cargo.....	Jan. 6, 1937—

District with Alger, Luce, Mackinac Counties

SHIAWASSEE COUNTY

A. B. Cook (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Don Albert Meeker (Temporary Emergency).....	Jan. 19, 1918—Nov. 6, 1918
Homer Edward Dennison.....	Apr. 16, 1919—Feb. 28, 1921
John Vernon Sheap.....	Mar. 1, 1921—July 31, 1925
Edward Reuben Hancock (Emergency).....	Aug. 15, 1933—Oct. 31, 1933
Edward Reuben Hancock.....	Nov. 1, 1933—

TUSCOLA COUNTY

Alexander MacVittie (Temporary Emergency).....	May 1, 1917—Oct. 31, 1917
Alexander MacVittie.....	Nov. 21, 1917—July 31, 1922
John Wilson Sims.....	Oct. 1, 1922—Mar. 15, 1927
Don Beebe Jewell.....	Mar. 16, 1927—Feb. 29, 1932
Edward Levi Hammond.....	Mar. 1, 1932—Dec. 31, 1934
Evart Lowell Benton.....	Dec. 20, 1934—July 31, 1938
Norris Wesley Wilber.....	Aug. 1, 1938—

VAN BUREN COUNTY

Chas. M. Frey (Farm Management Field Studies)	July 1, 1913—Aug. 31, 1913
Thomas A. Farrand	Mar. 1, 1916—Feb. 28, 1918
Wesley Clair Eckard	Mar. 1, 1918—Feb. 28, 1925
Earl Bangs (Assistant)	June 25, 1918—Oct. 1, 1918
William Frederick Johnston	Mar. 1, 1925—Dec. 31, 1935
John Gray Woodman	Jan. 1, 1936—

WASHTENAW COUNTY

W. E. Underdown (Temporary Emergency)	May 1, 1917—Oct. 31, 1917
Harold Scott Osler	Feb. 8, 1918—

WAYNE COUNTY

Orestes Isaiah Gregg	June 1, 1917—Sept. 15, 1922
Ralph Joseph Carr	Sept. 16, 1922—Aug. 23, 1936 (died)
Ellsworth Iola Besemer	Oct. 15, 1936—

WEXFORD COUNTY

Jame Francis Zimmer	Oct. 1, 1914—Dec. 31, 1916
George E. Piper	Jan. 10, 1917—Nov. 3, 1917
Clark D. Mason	Jan. 7, 1918—Nov. 15, 1919
William Frederick Johnston	Jan. 1, 1920—Feb. 28, 1925
Kenneth Ousterhout	Mar. 1, 1925—Dec. 31, 1928
Phillip Ralph Biebesheimer	Feb. 1, 1929—

HOME DEMONSTRATION AGENT LEADERS

Paulina Elona Raven	Sept. 1, 1914—June 30, 1917
Margaret Marie Justine (Assistant, Lower Peninsula)	Sept. 1, 1915—Aug. 31, 1916
Margaret Marie Justine (Assistant, Upper Peninsula)	Sept. 1, 1916—Aug. 31, 1918
Edna Viola Smith (Assistant)	Sept. 1, 1916—June 30, 1917
May Madden Person	Sept. 1, 1917—Sept. 30, 1919
Edna Viola Smith	July 1, 1917—Aug. 30, 1919
Coral R. Havens (Assistant)	Nov. 1, 1917—June 30, 1921
Elva R. Davis (Assistant)	Feb. 1, 1918—June 30, 1919
Osee Hughes (Assistant)	May 23, 1918—June 30, 1918
Zella Bigelow (Assistant)	July 1, 1918—Aug. 31, 1918
Aurelia Belle Potts (Assistant)	Sept. 9, 1918—Feb. 28, 1922
Edna Viola Smith (Acting)	Oct. 1, 1919—Nov. 30, 1920
Louise Hathaway Campbell	Dec. 1, 1920—Aug. 30, 1930 (died)
Ida Mary Sichler (Assistant, Upper Peninsula)	Sept. 15, 1922—June 30, 1924
Adele Koch (Assistant)	Nov. 1, 1922—May 15, 1924
Julia E. Brekke (Assistant)	July 1, 1924—Oct. 15, 1927
Jennie Bernice Woodworth (Wells) (Assistant)	July 1, 1924—July 31, 1926
Margaret Bertha Harris (Assistant, Upper Peninsula)	Apr. 1, 1926—Mar. 31, 1936
Rosalind M. Jewett (Assistant)	Sept. 1, 1927—Aug. 31, 1930
(Acting State Leader)	Aug. 28, 1929—May 31, 1930
Edna Viola Smith (Acting)	June 1, 1930—Oct. 18, 1930
Edna Viola Smith	Oct. 18, 1930—
Margaret Bertha Harris (Assistant, Lower Peninsula)	Apr. 1, 1936—
Helen Ann Strow (Assistant, Upper Peninsula)	Apr. 1, 1936—

CHILD CARE AND TRAINING SPECIALISTS

Lydia Ann H. Lynde	Feb. 1, 1929—Feb. 28, 1937
Florence Alice Hutchinson	May 1, 1937—

CLOTHING AND TEXTILES SPECIALISTS

Helen Arms	Oct. 1, 1918—Dec. 31, 1922
Eunice Ryan	Sept. 16, 1922—July 31, 1924
Agnes Sorenson (Richardson)	Sept. 1, 1924—Nov. 15, 1926
Carrie Colver Williams	Jan. 1, 1925—July 15, 1928
Marion Rider Hoffman	Sept. 15, 1925—Sept. 15, 1926
Ruth M. Guenther	Sept. 20, 1926—June 30, 1927
Edna Gertrude Gleason	Jan. 8, 1927—June 30, 1927
Edna Gertrude Gleason	Sept. 1, 1927—Nov. 30, 1927
Irene Alma Taylor	Sept. 1, 1927—Aug. 15, 1935
Mildred Nellie Gardner	Jan. 1, 1928—May 31, 1929
Frieda Ann Gilmore	Aug. 15, 1928—July 31, 1935
Merle Ramer	Aug. 26, 1929—Aug. 31, 1931
Lois Holderbaum	Sept. 15, 1934—June 30, 1935
Eleanor May Cramer	Aug. 15, 1935—Aug. 15, 1937
Mary Seekell (Thompson)	Oct. 1, 1935—May 31, 1936
Marjorie Eastman	June 1, 1936—
Helen Brian Larmore	Aug. 15, 1937—Sept. 1, 1938
Leona DeYoung MacLeod	Sept. 1, 1938—

FOODS AND NUTRITION SPECIALISTS

Vera Gruner	June 1, 1918—Mar. 1, 1919
Mariel Hopkins	Sept. 1, 1921—Oct. 31, 1923
Martha May Hunter	Aug. 1, 1924—June 30, 1928
Jennie Bernice Woodworth (Wells)	Apr. 1, 1927—May 31, 1927
Muriel Elizabeth Dundas (Gilbert)	Aug. 8, 1927—May 31, 1933
Clara L. Graves	Aug. 15, 1928—Dec. 31, 1928
Florence Louise Becker	Aug. 15, 1928—Dec. 31, 1929
Roberta Ruth Hershey	Sept. 1, 1929—

HEALTH SPECIALISTS

Elizabeth Leonice Parker	July 1, 1917—May 6, 1918
Elizabeth Leonice Parker	Aug. 16, 1918—Aug. 16, 1919

HOME ECONOMICS SPECIALISTS

Jessie M. DeBoth (Upper Peninsula)	Sept. 1, 1917—Dec. 31, 1917
Clara K. Morris	Jan. 24, 1917—Nov. 1, 1917
Mabel Claire Atwood	Sept. 1, 1927—May 14, 1928
Julia Pond	Dec. 4, 1933—Aug. 31, 1934
Helen Ann Strow	Sept. 15, 1935—Mar. 31, 1936

HOME FURNISHINGS SPECIALISTS

Marion Rider Hoffman	Sept. 15, 1926—Aug. 31, 1929
Gertrude A. Ries	Sept. 16, 1929—June 30, 1937
Alice McKinney	Sept. 1, 1935—Sept. 15, 1938
Wilma Belknap Keyes	Sept. 1, 1937—June 30, 1938
Wilma Belknap Keyes	Aug. 15, 1938—Oct. 10, 1938
Jessie Eleanor Marion	Oct. 1, 1938—
Ruth Jeannette Peck	Nov. 1, 1938—

HOME MANAGEMENT SPECIALISTS

Edna Viola Smith	Dec. 1, 1920—June 30, 1923
Marian Harriet Rogers (Smith)	Oct. 1, 1922—June 30, 1925
Edna Viola Smith	July 1, 1925—May 31, 1930
Evelyn Turner	Jan. 15, 1929—June 30, 1935
Oona Stautz	Sept. 1, 1930—Aug. 31, 1932
Julia Pond	Sept. 1, 1934—
Helen Isabel Noyes	Aug. 15, 1935—

HOME MARKETING SPECIALIST

Barbara VanHeulen	Nov. 15, 1930—Dec. 31, 1931
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DISTRICT HOME DEMONSTRATION AGENTS

Hilda Pollari (Emergency, Upper Peninsula).....	June 8, 1917—Aug. 4, 1917
Hilda Pollari (Emergency, Upper Peninsula).....	Sept. 15, 1917—June 30, 1919
Osee Hughes (Emergency, Urban Demonstration Agent).....	July 1, 1919—Sept. 1, 1919
Helen Simonson (Upper Peninsula).....	Mar. 1, 1922—Aug. 31, 1922
Mrs. Donald B. Shutt.....	May 1, 1925—June 30, 1925
Esther C. Lott.....	Jan. 1, 1933—June 30, 1933
Margaret Anna Cole (Upper Peninsula).....	Feb. 1, 1936—Sept. 5, 1938
Miriam Genie Eads.....	Sept. 15, 1938—

COUNTY HOME DEMONSTRATION AGENTS

ALCONA

Alice Hertzler.....	Sept. 1, 1938—
District with Alpena, Iosco, Oscoda Counties	

ALLEGAN

Jennie Bernice Woodworth (Wells) (Emergency).....	June 10, 1918—June 30, 1919
Jennie Bernice Woodworth (Wells).....	July 1, 1920—June 30, 1921
Muriel Elizabeth Dundas (Gilbert).....	July 16, 1922—May 31, 1924
Marion E. Harper (Finkbeiner).....	June 1, 1924—Sept. 30, 1925
Amanda Hill.....	Oct. 1, 1925—Aug. 31, 1926
Mary Ethel Bullis.....	Feb. 1, 1936—
District with Barry County	

ALPENA

Alice Hertzler.....	Jan. 1, 1936—Aug. 31, 1938
District with Crawford, Montmorency, Otsego, Presque Isle Counties	
Alice Hertzler.....	Sept. 1, 1938—
District with Alcona, Iosco, Oscoda Counties	

BARRY

Mary Ethel Bullis.....	Feb. 1, 1936—
District with Allegan County	

BENZIE

District with Grand Traverse, Leelanau, Manistee Counties	
Norma Barr.....	Oct. 1, 1935—July 31, 1937
Elizabeth Krieger.....	Aug. 1, 1937—July 9, 1938
Lawain Churchill.....	Aug. 1, 1938—

BERRIEN

Bessie Turner (Emergency).....	June 16, 1918—Sept. 30, 1919
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BRANCH

Alta Cottingham (McMurray).....	Nov. 1, 1935—Sept. 30, 1937
Estelle Mildred Nelson.....	Oct. 1, 1937—Apr. 31, 1939

CALHOUN

Catherine Candace Hallock.....	Jan. 1, 1936—June 15, 1938
Gladys Pauline Bond.....	July 1, 1938—

CASS

Eva Carrett (Emergency).....	Nov. 1, 1918—Nov. 15, 1919
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CHIPPEWA

Helen C. Pratt (Emergency)..... Mar. 16, 1918—Apr. 15, 1922

CLARE

Estelle Mildred Nelson..... Oct. 1, 1935—Sept. 30, 1937
 District with Gladwin, Kalkaska, Missaukee, Roscommon Counties
 Mary Lorena Jones..... Nov. 1, 1937—
 District with Gladwin, Kalkaska, Missaukee, Roscommon Counties

CRAWFORD

Alice Hertzler..... Jan. 1, 1936—Aug. 31, 1938
 District with Alpena, Montmorency, Otsego, Presque Isle Counties

DELTA

Sylvia Richardson (Emergency)..... June 1, 1918—June 30, 1919

DICKINSON

Helen E. Simonson (Emergency)..... Mar. 1, 1918—Dec. 31, 1921

GENESEE

Emma B. Wagner (Emergency)..... Oct. 10, 1917—May 15, 1918
 Katherine B. Beekman (Emergency)..... May 16, 1918—June 30, 1918
 Agnes Mildred McKinley..... Jan. 1, 1936—June 15, 1939

GLADWIN

Muriel Elizabeth Dundas (Gilbert)..... Sept. 15, 1921—July 15, 1922
 Estelle Mildred Nelson..... Oct. 1, 1935—Sept. 30, 1937
 District with Clare, Kalkaska, Missaukee, Roscommon Counties
 Mary Lorena Jones..... Nov. 1, 1937—
 District with Clare, Kalkaska, Missaukee, Roscommon Counties

GOGEBIC

Effie Carp (Emergency)..... Apr. 15, 1918—Jan. 1, 1919
 Sylvia Richardson (Emergency)..... July 1, 1919—July 31, 1921
 Jennie Williams..... Aug. 1, 1921—Aug. 31, 1922
 Ruth Wheatley..... Sept. 16, 1922—Aug. 31, 1924

GRAND TRAVERSE

District with Benzie, Leelanau, Manistee Counties
 Norma Barr..... Oct. 1, 1935—July 31, 1937
 Elizabeth Krieger..... Aug. 1, 1937—July 9, 1938
 Lawain Churchill..... Aug. 1, 1938—

GRATIOT

Ruth Adele Fritsche..... Jan. 1, 1936—Dec. 31, 1936
 Districts with Isabella, Montcalm, Shiawassee Counties
 Therese Scudder Tordt..... June 21, 1937—
 District with Isabella, Montcalm Counties
 District with Shiawassee County..... June 21, 1937—June 1, 1938

HOUGHTON

Flora E. McElhinney (Emergency)..... July 1, 1920—Feb. 28, 1921

INGHAM

Myrtle Van Horne..... Dec. 1, 1928—June 30, 1932
 Bertine Cole Benedict..... Oct. 1, 1935—

IOSCO

Alice Hertzler Sept. 1, 1938—
 District with Alcona, Alpena, Oscoda Counties

IRON

Maude Bennett (Emergency) Oct. 20, 1917—June 30, 1919

ISABELLA

Ruth Adele Fritsche Jan. 1, 1936—Dec. 31, 1936
 District with Gratiot, Montcalm, Shiawassee Counties
 Therese Scudder Toradt June 21, 1937—
 District with Gratiot, Montcalm Counties
 District with Shiawassee County June 21, 1937—June 1, 1938

JACKSON

Olga Ruth Bird Dec. 1, 1928—Sept. 15, 1930
 Dorothy Hanigan (Holahan) Sept. 15, 1930—Feb. 28, 1934
 Elisabeth Phelps Weld Mar. 1, 1934—Aug. 31, 1936
 Dorothy Curtiss Doyle Aug. 17, 1936—June 30, 1937
 Margaret Millicent Reed July 1, 1937—

KALAMAZOO

Blanche Clark (Emergency) Mar. 13, 1918—June 15, 1925
 Veda Ellen Hiller Nov. 1, 1935—Dec. 31, 1936
 Margaret Edith Linsell Feb. 1, 1937—

KALKASKA

District with Clare, Gladwin, Missaukee, Roscommon Counties
 Estelle Mildred Nelson Oct. 1, 1935—Sept. 30, 1937
 Mary Lorena Jones Nov. 1, 1937—

KENT

Clara G. Rogers (Emergency) Dec. 18, 1917—June 30, 1919
 Frances M. Erickson (Emergency) Dec. 1, 1917—June 30, 1919
 Agnes Sorenson (Richardson) Nov. 16, 1926—Dec. 31, 1932
 Mary Seekell (Thompson) Jan. 1, 1933—Sept. 30, 1935
 District with Ottawa County
 Edith Eleanor Densmore Dec. 15, 1935—

LEELANAU

District with Benzie, Grand Traverse, Manistee Counties
 Norma Barr Oct. 1, 1935—July 31, 1937
 Elizabeth Krieger Aug. 1, 1937—July 9, 1938
 Lawain Churchill Aug. 1, 1938—

LENAWEE

Eunice Vivian Anderson (Pardee) Jan. 1, 1929—Dec. 31, 1930

MANISTEE

Alice M. Kuenzli (Emergency) Sept. 15, 1918—Feb. 1, 1920
 Grace Pinnell (Emergency) Apr. 20, 1920—June 30, 1921
 Norma Barr Oct. 1, 1935—July 31, 1937
 District with Benzie, Grand Traverse, Leelanau Counties
 Elizabeth Krieger Aug. 1, 1937—July 9, 1938
 District with Benzie, Grand Traverse, Leelanau Counties
 Lawain Churchill Aug. 1, 1938—
 District with Benzie, Grand Traverse, Leelanau Counties

MARQUETTE

Esther Keating (Emergency).....	Dec. 18, 1917—Mar. 31, 1919
Sylvia Wixson.....	Sept. 15, 1921—Jan. 31, 1924
Marion E. Rider (Hoffman).....	Feb. 1, 1924—Sept. 15, 1925
Gladys Hoff.....	Sept. 15, 1925—Apr. 30, 1928
Alberta Louisa Bates.....	May 1, 1928—Mar. 31, 1930
Marion Hoffman.....	Sept. 15, 1929—Oct. 15, 1929
Dorothy Coburn (Clanahan).....	Apr. 14, 1930—June 30, 1932

MASON

Lou Ella Butler (Emergency).....	Feb. 1, 1918—June 30, 1919
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MECOSTA

District with Muskegon, Newaygo, Oceana Counties	
Jean Elisabeth Kinney.....	Oct. 1, 1935—July 31, 1937
Dorothy Vasold.....	Aug. 1, 1937—

MENOMINEE

May E. Foley (Emergency).....	June 1, 1918—June 30, 1919
Marian Elizabeth Moore.....	Jan. 1, 1936—

MIDLAND—SAGINAW

Grace Irene Mitchell.....	Jan. 1, 1936—
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MISSAUKEE

Estelle Mildred Nelson.....	Oct. 1, 1935—Sept. 30, 1937
District with Clare, Gladwin, Kalkaska, Roscommon Counties	
Mary Lorena Jones.....	Nov. 1, 1937—
District with Clare, Gladwin, Kalkaska, Roscommon Counties	

MONTCALM

Ruth Adele Fritsche.....	Jan. 1, 1936—Dec. 31, 1936
District with Gratiot, Isabella, Shiawassee Counties	
Therese Scudder Tordt.....	June 21, 1937—
District with Gratiot, Isabella Counties	
District with Shiawassee County.....	
	June 21, 1937—June 1, 1938

MONTMORENCY

Alice Hertzler.....	Jan. 1, 1936—Aug. 31, 1938
District with Alpena, Crawford, Otsego, Presque Isle Counties	

MUSKEGON

Jean Elisabeth Kinney.....	Oct. 1, 1935—July 31, 1937
District with Mecosta, Newaygo, Oceana Counties	
Dorothy Vasold.....	Aug. 1, 1937—
District with Mecosta, Newaygo, Oceana Counties	

NEWAYGO

District with Mecosta, Muskegon, Oceana Counties	
Jean Elisabeth Kinney.....	Oct. 1, 1935—July 31, 1937
Dorothy Vasold.....	Aug. 1, 1937—

OAKLAND

Eva Carrett.....	Feb. 1, 1920—Dec. 31, 1923
Muriel Elizabeth Dundas (Gilbert).....	June 1, 1924—Sept. 30, 1926
Ethel McDonald.....	Nov. 1, 1926—Jan. 31, 1929
Elisabeth Phelps Weld.....	Jan. 21, 1929—Feb. 28, 1934
Leona DeYoung MacLeod.....	May 1, 1934—Aug. 31, 1938
Lola Tingley Dudgeon.....	Sept. 1, 1938—

OCEANA

Mary F. Seekell (Thompson).....	Feb. 1, 1928—Dec. 31, 1932
Jean Elisabeth Kinney.....	Oct. 1, 1935—July 31, 1937
District with Mecosta, Muskegon, Newaygo Counties	
Dorothy Vasold.....	Aug. 1, 1937—
District with Mecosta, Muskegon, Newaygo Counties	

ONTONAGON

Flora E. McElhinney (Emergency).....	Oct. 3, 1917—June 30, 1919
District with Houghton County	

OSCODA

Alice Hertzler.....	Sept. 1, 1938—
District with Alcona, Alpena, Iosco Counties	

OTSEGO

Alice Hertzler.....	Jan. 1, 1936—Aug. 31, 1938
District with Alpena, Crawford, Montmorency, Presque Isle Counties	

OTTAWA

Grace H. Hitchcock (Emergency).....	Oct. 3, 1917—Oct. 31, 1920
Eva Schurr.....	July 1, 1921—Nov. 30, 1923
Bertha Jenny Wellington.....	Jan. 1, 1924—Sept. 30, 1925
Ruth Dawson Morley.....	Sept. 15, 1925—Apr. 30, 1929
Esther C. Lott.....	May 8, 1929—Dec. 31, 1932
Mary Seekell (Thompson).....	Jan. 1, 1933—Sept. 30, 1935
District with Kent County	
Grace Austin VanderKolk.....	Jan. 1, 1936—

PRESQUE ISLE

Alice Hertzler.....	Jan. 1, 1936—Aug. 31, 1938
District with Alpena, Crawford, Montmorency, Otsego Counties	

ROSCOMMON

Estelle Mildred Nelson.....	Oct. 1, 1935—Sept. 30, 1937
District with Clare, Gladwin, Kalkaska, Missaukee Counties	
May Lorena Jones.....	Nov. 1, 1937—
District with Clare, Gladwin, Kalkaska, Missaukee Counties	

SAGINAW

Helen Arms (Emergency).....	May 1, 1918—Sept. 30, 1918
Rose Hogue (Emergency).....	May 1, 1918—Sept. 1, 1918
Nina Streeter (Emergency).....	Oct. 1, 1918—June 30, 1919
Dorothy Kurtz.....	July 1, 1921—Nov. 30, 1921

SAINT CLAIR

Clara Waldron (Emergency).....	Nov. 27, 1917—Dec. 31, 1920
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SAINT JOSEPH

Irene M. Bailey (Emergency).....	Apr. 14, 1916—July 1, 1917
Laverne Jones (Emergency).....	Nov. 26, 1917—Aug. 31, 1919

SCHOOLCRAFT

Jennie Williams (Emergency).....	Jan. 20, 1918—June 30, 1920
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SHIAWASSEE

Ruth Adele Fritsche.....	Jan. 1, 1936—Dec. 31, 1936
District with Gratiot, Isabella, Montcalm Counties	
Therese Scudder Tordt.....	June 21, 1937—June 1, 1938
District with Gratiot, Isabella, Montcalm Counties	

WASHTENAW

Bertella May Lee Russell	Jan. 1, 1936—June 30, 1938
Ardis Helen Nugent	Aug. 1, 1938—

WAYNE

Bessie L. Rogers (Emergency)	Mar. 18, 1918—June 30, 1919
Marian Harriet Rogers	Sept. 1, 1919—Sept. 30, 1922
Jennie Bernice Woodworth (Wells)	Oct. 16, 1922—June 30, 1924
Lois Mabel Corbett	July 1, 1924—May 31, 1929
Emma Dorilla DuBord	Sept. 1, 1929—
Margaret Anna Cole (Temporary)	Sept. 6, 1938—

4-H CLUB LEADERS

Eduard Christian Lindemann	Oct. 1, 1914—Sept. 30, 1918
Anna Bryant Cowles	Sept. 1, 1915—Aug. 31, 1919
Chester Augustus Spaulding (Assistant to Leader)	July 1, 1916—Sept. 30, 1918
R. N. Kebler (Assistant, U. P.)	July 1, 1917—Oct. 31, 1918
Barbara Van Heulen (Assistant)	Oct. 1, 1917—June 30, 1923
Arne Gerald Kettunen (Spec. Poultry Clubs)	Nov. 1, 1917—Dec. 31, 1917
Emil Conrad Volz (Spec. Garden Clubs)	Jan. 25, 1918—June 30, 1918
Jessie M. DeBoth (Assistant, U. P.)	Jan. 1, 1918—Oct. 31, 1918
Elda I. Robb (Assistant)	Feb. 1, 1918—Dec. 31, 1923
Arne Gerald Kettunen (Spec. Poultry Clubs)	Jan. 1, 1918—June 30, 1918
Ray A. Turner	Oct. 1, 1918—June 30, 1924
Arne Gerald Kettunen (Assistant)	Dec. 16, 1918—Jan. 20, 1925
Margaret Hutty (Assistant)	Mar. 1, 1919—Feb. 28, 1921
William August Anderson (Assistant)	June 10, 1919—Dec. 21, 1920
Eva Duthie (Assistant)	June 1, 1918—Dec. 31, 1918
Nathalia Vasold (Assistant)	Mar. 1, 1921—June 30, 1921
Ruth Cresswell (Kettunen) (Assistant)	Feb. 1, 1922—July 31, 1925
Nevels Pearson (Assistant)	Mar. 1, 1922—
Harriet Wilder (Shaver) (Assistant)	July 1, 1923—June 30, 1927
Sylva Wixson (Assistant)	Feb. 1, 1924—Dec. 31, 1935
Arne Gerald Kettunen	Jan. 20, 1925—
Per Gunnard Lundin (Assistant)	July 1, 1925—
Emma Dorilla DuBord (Assistant)	July 1, 1925—Aug. 31, 1929
Mary Hall Burkhart (Assistant)	Apr. 1, 1926—June 15, 1926
Merton LaMont Wright (Assistant)	Apr. 15, 1925—May 15, 1928
Ruth Featherly (Schubert) (Assistant)	July 1, 1926—Dec. 31, 1928
Lola Belle Green (Assistant)	July 1, 1927—
Gertrude Maynard Gage (Assistant)	Apr. 1, 1928—June 15, 1929
Clare Alfred Rood (Assistant, U. P.)	May 10, 1928—
Gustavus Adolphus Thorpe (Assistant)	July 1, 1928—Nov. 15, 1935
Ruth Featherly (Schubert) (Assistant)	Apr. 22, 1929—May 11, 1929
Lois Mabel Corbett (Assistant)	June 1, 1929—
Harriet Wilder (Shaver) (Assistant)	June 15, 1929—Aug. 31, 1929
Ruth Featherly (Schubert) (Assistant, U. P.)	Oct. 1, 1929—Dec. 15, 1929
Olga Ruth Bird (Assistant, U. P.)	Sept. 16, 1930—Dec. 31, 1935
Harriet Wilder (Shaver) (Assistant)	Nov. 1, 1930—June 30, 1931
Cecil Hutchinson Nickle (Rural Dramatics Spec.)	July 1, 1934—Aug. 31, 1934
Cecil Hutchinson Nickle (Rural Dramatics Spec.)	Aug. 1, 1935—Sept. 30, 1935
Beatrice C. Boyle (Assistant)	Jan. 1, 1936—
Alice Osborn Bates (Assistant)	Jan. 1, 1936—
Olga Ruth Bird (Assistant)	Jan. 1, 1936—
Milbourne Henry Avery (Assistant)	Jan. 1, 1936—
Marcella Mary Meyer (Assistant, U. P.)	Feb. 1, 1936—
Cecil Hutchinson Nickle (Rural Dramatics Spec.)	July 1, 1936—Sept. 12, 1936
Edna Brown Braamse (Assistant)	Mar. 15, 1937—May 15, 1937
Cecil Hutchinson Nickle (Recreation Spec.)	July 1, 1937—Sept. 11, 1937
Edna Brown Braamse (Assistant)	Mar. 14, 1938—May 7, 1938
Cecil Hutchinson Nickle (Recreation Spec.)	Aug. 1, 1938—Sept. 17, 1938
Edna Brown Braamse (Assistant)	Mar. 15, 1939—Apr. 30, 1939
Cecil Hutchinson Nickle (Recreation Spec.)	June 26, 1939—Sept. 15, 1939

4-H CLUB AGENTS

ALCONA

Lemuel Harrison Rhodes..... Nov. 1, 1935—
 District with Arenac, Iosco, Ogemaw Counties

ALGER

Y. G. T. Rehner (Emergency)..... May 1, 1918—June 30, 1918
 Y. G. T. Rehner (Temporary)..... May 1, 1920—Oct. 31, 1920
 Alice L. Zeno (Temporary)..... July 1, 1922—Oct. 31, 1922
 Edna Alice Brown (Braamse) (Temporary)..... July 1, 1923—Nov. 30, 1923
 Agnes W. Brown (Temporary)..... May 1, 1924—June 30, 1924
 Edna Alice Brown (Braamse) (Temporary)..... July 1, 1924—Sept. 30, 1924
 George Frederick Biekkola (Temporary)..... July 1, 1926—Oct. 31, 1926
 Lin F. Shoblaske (Temporary)..... July 1, 1927—Aug. 31, 1927
 Lin F. Shoblaske (Temporary)..... July 1, 1928—Sept. 30, 1928
 Victor Carlton Vaughan (Temporary)..... May 1, 1929—June 30, 1929
 Victor Carlton Vaughan (Temporary)..... Apr. 1, 1930—June 30, 1930
 Victor Carlton Vaughan (Temporary)..... May 1, 1931—June 30, 1931

ALLEGAN

Frank Earl Haas..... Nov. 1, 1935—
 District with Barry, Kent, Ottawa Counties

ALPENA

T. J. Gaul (Emergency)..... July 16, 1918—Aug. 31, 1918
 Glenna McCrary..... Sept. 1, 1929—Nov. 30, 1931
 Lewellyn Benjamin Karr..... Jan. 1, 1936—
 District with Crawford, Montmorency, Otsego, Presque Isle Counties

ANTRIM

John H. Rayle (Emergency)..... Sept. 1, 1917—Oct. 31, 1917
 Orville Frederick Walker..... Jan. 1, 1936—
 District with Charlevoix, Cheboygan, Emmet Counties

ARENAC

Lemuel Harrison Rhodes..... Nov. 1, 1935—
 District with Alcona, Iosco, Ogemaw Counties

BARAGA

Alba Stenson (Temporary)..... May 1, 1920—Oct. 31, 1920
 Alba Stenson (Temporary)..... July 1, 1922—Dec. 31, 1922
 Ingrid C. Mattson (Temporary)..... July 1, 1935—Sept. 30, 1935

BARRY

Grover Cleveland White (Emergency)..... Nov. 1, 1917—Jan. 31, 1918
 Frank C. Brown (Emergency)..... Apr. 1, 1918—Sept. 30, 1918
 L. Goldie Benham (Temporary)..... Mar. 1, 1923—June 30, 1923
 Harriet Wilder (Shaver) (Temporary)..... Nov. 1, 1927—Nov. 15, 1927
 Beatrice C. Boyle..... Jan. 1, 1928—Sept. 5, 1931
 Frank Earl Haas..... Nov. 1, 1935—
 District with Allegan, Kent, Ottawa Counties

BAY

George W. Gilbert (Emergency)..... Oct. 1, 1917—Jan. 30, 1918
 George E. Butterfield (Emergency)..... Apr. 1, 1918—Sept. 30, 1918
 Clayton R. Garlock (Emergency)..... June 6, 1918—Aug. 31, 1918
 George E. Butterfield (Temporary)..... Apr. 1, 1922—Dec. 30, 1922
 Howard Delos Parish..... Apr. 1, 1935—
 District with Huron, Tuscola Counties

BERRIEN

Paul Joseph Rood (Temporary).....	May 1, 1918—Sept. 30, 1918
Paul Joseph Rood (Temporary).....	July 1, 1919—July 31, 1919
Henry C. Gleason.....	Nov. 11, 1935—Apr. 30, 1938
District with Cass, St. Joseph, Van Buren Counties	
Ruford Franklin Bittner.....	Aug. 1, 1938—
District with Cass, Van Buren Counties	

BRANCH

Viva Osborn (Emergency).....	Feb. 1, 1918—Sept. 30, 1918
Viva Osborn (Temporary).....	May 1, 1920—June 30, 1920
Viva Osborn.....	July 1, 1921—Oct. 31, 1923
Roy Clifford MacIntyre.....	Aug. 1, 1938—
District with Kalamazoo, St. Joseph Counties	

CALHOUN

Lucia Converse (Emergency).....	Apr. 1, 1918—Oct. 31, 1918
Charles Ernest Ackley (Emergency).....	Sept. 1, 1917—Oct. 31, 1917
Charles Ernest Ackley (Emergency).....	Jan. 1, 1918—Jan. 31, 1918
Frank Davis (Emergency).....	Apr. 17, 1918—June 30, 1918
Margaret Hutty (Emergency).....	July 1, 1918—Sept. 30, 1918
Edith Gabriel (Emergency).....	July 16, 1918—Aug. 31, 1918
H. F. Herrod (Temporary).....	May 16, 1920—Oct. 31, 1920
Charles Ernest Ackley.....	Mar. 1, 1921—Jan. 31, 1922
William C. Boman.....	Mar. 1, 1922—Feb. 28, 1925
Everett Charles Sackrider.....	Apr. 1, 1925—Dec. 31, 1928
Ruth M. Ketcham (Sackrider).....	Jan. 15, 1929—Dec. 31, 1930
Alice Osborn Bates.....	Jan. 1, 1931—Dec. 31, 1935
Burrell Edwin Henry.....	Feb. 1, 1936—

CASS

Henry C. Gleason.....	Nov. 11, 1935—Apr. 30, 1938
District with Berrien, St. Joseph, Van Buren Counties	
Ruford Franklin Bittner.....	Aug. 1, 1938—
District with Berrien, Van Buren Counties	

CHARLEVOIX

Mattie B. Smith (Emergency).....	June 1, 1918—Oct. 31, 1918
Ralph H. Sill (Emergency).....	July 1, 1918—Sept. 30, 1918
Bernice H. Fowler (Emergency).....	Aug. 1, 1918—Aug. 31, 1918
A. F. Speltz.....	July 1, 1920—Dec. 31, 1920
Orville Frederick Walker.....	Jan. 1, 1936—
District with Antrim, Cheboygan, Emmet Counties	

CHEBOYGAN

Ruth E. Wheaton (Temporary).....	Apr. 1, 1918—Nov. 30, 1919
Ann Rosale Banks.....	Jan. 16, 1920—Dec. 15, 1923
Lester Vance Benjamin.....	June 15, 1926—Oct. 10, 1930
District with Otsego County	
District included Montmorency until June 16, 1929	
Mary Iford.....	Nov. 1, 1930—Sept. 30, 1932
District with Otsego County	
Orville Frederick Walker.....	Jan. 1, 1936—
District with Antrim, Charlevoix, Emmet Counties	

CHIPPEWA

Guy C. Gamble (Temporary).....	May 1, 1918—Aug. 31, 1918
Tracey Roy Shane.....	May 1, 1920—Dec. 31, 1920
Florence E. English.....	July 1, 1925—Sept. 30, 1925
Corrine Ormiston (White).....	Jan. 7, 1929—Mar. 31, 1934
Beatrice C. Boyle.....	Apr. 1, 1934—Dec. 31, 1935
Mary Olive Richmond.....	Feb. 1, 1936—

CLINTON

Nathalie A. Vasold (Temporary)	June 1, 1918—Sept. 31, 1918
Asa L. McCartney (Temporary)	Sept. 1, 1917—Oct. 31, 1917
M. R. Kimball (Temporary)	July 1, 1922—Oct. 31, 1922
Roscoe Glenn Smith	Apr. 3, 1929—Oct. 31, 1930
Clarence Edward Prentice	Jan. 1, 1936—Jan. 31, 1937
District with Eaton, Ingham, Ionia Counties	
John Mason Converse	Feb. 20, 1937—
District with Eaton, Ingham, Ionia Counties	

CRAWFORD

Llewellyn Benjamin Karr	Jan. 1, 1936—
District with Alpena, Montmorency, Otsego, Presque Isle Counties	

DELTA

Walter LeRoy Mallmann (Emergency)	Sept. 1, 1917—Sept. 30, 1917
William E. Anderson (Emergency)	Sept. 1, 1917—Sept. 30, 1917
Martin B. Mellican (Emergency)	May 1, 1918—Aug. 31, 1918
Everett Charles Sackrider (Temporary)	July 1, 1923—Nov. 30, 1923
Everett Charles Sackrider (Temporary)	June 1, 1924—Nov. 30, 1924
Hugo T. Swanson (Temporary)	July 1, 1925—Dec. 31, 1925
Hugo T. Swanson (Temporary)	July 1, 1926—Dec. 31, 1926

DICKINSON

Andres M. Myhrman (Temporary)	July 1, 1922—Oct. 31, 1922
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EATON

Bernice M. Curtis (Emergency)	July 1, 1918—Aug. 31, 1918
E. K. Smith	June 1, 1918—June 30, 1918
Ralph Whitcomb Tenny	June 1, 1920—Nov. 30, 1921
Agnes Martin (Temporary)	July 1, 1922—Nov. 31, 1922
Grace Fox (Temporary)	July 1, 1923—Oct. 31, 1923
Verda Ransom (Dodge)	July 1, 1924—Aug. 31, 1924
Clarence Edward Prentice	Jan. 1, 1936—Jan. 31, 1937
District with Clinton, Ingham, Ionia Counties	
John Mason Converse	Feb. 20, 1937—
District with Clinton, Ingham, Ionia Counties	

EMMET

Frank R. Martin (Temporary)	June 16, 1918—Aug. 31, 1918
Orville Frederick Walker	Jan. 1, 1936—
District with Antrim, Charlevoix, Cheboygan Counties	

GENESEE

J. F. Rutledge (Emergency)	July 1, 1918—Aug. 31, 1918
Kelsey B. Smith	May 16, 1919—June 30, 1921
Lester E. Mericle	Apr. 1, 1922—Mar. 15, 1923
Sheldon Howard LaTourette	Jan. 1, 1930—

GLADWIN

C. J. Barnum (Emergency)	Apr. 1, 1918—June 30, 1918
Levi Pfenning	July 1, 1920—June 30, 1921
Wanda Brunni (Temporary)	Sept. 1, 1921—Nov. 30, 1921

GRATIOT

Blaine Curtis (Emergency)	Sept. 1, 1917—Oct. 31, 1917
Ella M. Clark (Emergency)	June 1, 1918—Oct. 31, 1918

GOGEBIC

Carl Edwin Gunderson (Temporary)	Aug. 16, 1918—Oct. 15, 1918
John Kuder (Temporary)	May 1, 1918—July 31, 1918
Fred Godlove (Temporary)	June 16, 1918—Aug. 31, 1918
Karl P. Silberg (Temporary)	July 1, 1920—Dec. 31, 1920
Karl P. Silberg (Temporary)	July 1, 1922—Dec. 31, 1922
Karl P. Silberg (Temporary)	July 1, 1923—Dec. 31, 1923
Karl P. Silberg (Temporary)	May 1, 1924—Oct. 31, 1924
Gordon F. Whitburn (Temporary)	July 1, 1925—Sept. 30, 1925
Mary R. Thompson	Oct. 1, 1926—Apr. 30, 1929
Gordon F. Whitburn (Temporary)	July 1, 1926—Sept. 30, 1926
Hazel Louise Bradley	May 1, 1929—Aug. 31, 1932
Beatrice C. Boyle	Sept. 19, 1932—Mar. 31, 1934
Mary Olive Richmond	Apr. 1, 1934—Jan. 31, 1936
Norma Ida Streeter	Feb. 1, 1936—

GRAND TRAVERSE

E. H. Wilcox (Temporary)	Apr. 1, 1918—June 30, 1918
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HILLSDALE

Ray A. Turner (Emergency)	Sept. 1, 1917—Dec. 31, 1917
Ray A. Turner	Apr. 1, 1918—Sept. 30, 1918
H. B. Dimmers (Temporary)	July 1, 1921—Oct. 31, 1921
Ann E. Varney	May 1, 1920—Dec. 31, 1920
Louis Henry Matthias	Apr. 1, 1922—Dec. 31, 1922
Louis Henry Matthias	Feb. 1, 1923—Sept. 30, 1923
Louis Henry Matthias	Feb. 16, 1924—Nov. 30, 1924
Louis Henry Matthias	Jan. 15, 1925—Nov. 30, 1925
Blair Woodman	Mar. 4, 1929—
Robert Judson Laser	Sept. 1, 1936—

District with Jackson, Lenawee, Monroe Counties

HOUGHTON

Arne Gerald Kettunen	Apr. 15, 1917—Oct. 31, 1917
Lawrence W. Miller	May 1, 1918—Aug. 30, 1918
Beryl Otto Hagerman	Aug. 1, 1919—Nov. 30, 1920
Hazel Deadman	May 1, 1918—June 30, 1918
Clare Alfred Rood	May 1, 1923—Oct. 31, 1923
Paul Banker (Temporary)	May 16, 1924—Oct. 31, 1924
Paul Banker (Temporary)	May 1, 1925—Oct. 31, 1925
Paul Banker (Temporary)	Sept. 1, 1926—Nov. 30, 1926
G. O. Harma (Temporary)	Aug. 1, 1927—Nov. 30, 1927
Bernard F. Gaffney (Temporary)	June 1, 1930—Aug. 31, 1930
Kauno John Moilanen (Temporary)	Apr. 22, 1935—Sept. 30, 1935

District with Keweenaw County

Kauno John Moilanen	Oct. 18, 1935—May 31, 1938
Elina H. Beck (Mrs.) (Temporary)	Aug. 15, 1938—Nov. 15, 1938
Elina H. Beck (Mrs.) (Temporary)	Apr. 1, 1939—Sept. 30, 1939

HURON

Verne Alonzo Freeman (Temporary)	Sept. 1, 1917—Sept. 15, 1917
Howard Delos Parish	Apr. 1, 1935—

District with Bay, Tuscola Counties

INGHAM

Glen S. Kies (Temporary)	Feb. 1, 1918—Oct. 31, 1918
Kelsey B. Smith (Temporary)	Apr. 1, 1918—Aug. 31, 1918
Harry P. Lewis (Temporary)	June 1, 1918—Aug. 31, 1918
Anna C. Pratt (Temporary)	June 1, 1918—Sept. 30, 1918
Glen S. Kies	May 16, 1919—Dec. 31, 1919
Clarence Edward Prentice	Jan. 1, 1936—Jan. 31, 1937

District with Clinton, Eaton, Ionia Counties

John Mason Converse	Feb. 20, 1937—
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District with Clinton, Eaton, Ionia Counties

IONIA

Percival Angrove (Emergency).....	Sept. 1, 1917—Oct. 31, 1917
Percival Angrove (Temporary).....	June 6, 1918—Oct. 31, 1918
Clarence Edward Prentice.....	Jan. 1, 1936—Jan. 31, 1937
District with Clinton, Eaton, Ingham Counties	
John Mason Converse.....	Feb. 20, 1937—
District with Clinton, Eaton, Ingham Counties	

IOSCO

Lemuel Harrison Rhodes.....	Nov. 1, 1935—
District with Alcona, Arenac, Ogemaw Counties	

IRON

George E. Bishop (Temporary).....	June 1, 1918—Sept. 30, 1918
Ernest W. Tiegs (Temporary).....	May 1, 1918—Sept. 30, 1918
Maude L. Bennett.....	Sept. 1, 1919—Apr. 30, 1920
Willa O. Hill.....	May 1, 1920—Oct. 31, 1920
Mary V. Hall.....	Mar. 1, 1921—June 30, 1923
Arthur Enoch Hagen.....	Mar. 1, 1924—Dec. 31, 1926
Arthur Wilfred Otterbein.....	Apr. 1, 1927—Dec. 31, 1929
Elwyn Adams Wenner.....	Feb. 17, 1930—Jan. 31, 1935
Roland Herbert Kaven.....	Apr. 22, 1935—

ISABELLA

Floyd Ferguson (Emergency).....	June 1, 1918—Sept. 30, 1918
Floyd Ferguson (Temporary).....	July 1, 1920—June 30, 1921
James E. Pease (Temporary).....	June 1, 1924—Sept. 30, 1924

JACKSON

Russell S. Simmons (Temporary).....	June 1, 1918—Aug. 15, 1918
Percy Howe (Temporary).....	Apr. 16, 1918—Aug. 31, 1918
Marian Wheeler (Temporary).....	July 1, 1920—July 31, 1920
Glen J. Waite (Temporary).....	July 1, 1921—Oct. 31, 1921
William S. Wood (Temporary).....	May 1, 1922—Aug. 31, 1922
William S. Wood (Temporary).....	Feb. 1, 1923—Sept. 30, 1923
William S. Wood (Temporary).....	May 1, 1924—Dec. 31, 1924
Robert Judson Laser.....	Nov. 1, 1935—Aug. 31, 1936
District with Lenawee, Monroe, Washtenaw Counties	
Robert Judson Laser.....	Sept. 1, 1936—
District with Hillsdale, Lenawee, Monroe Counties	

KALAMAZOO

Floyd L. Smith (Emergency).....	Mar. 13, 1918—June 30, 1918
Roy Clifford MacIntyre.....	Aug. 1, 1938—
District with Branch, St. Joseph Counties	

KENT

L. L. Markley (Temporary).....	July 1, 1917—Sept. 8, 1917
Glenn Orlando Stewart (Emergency).....	Nov. 1, 1917—June 30, 1918
B. J. Ford (Emergency).....	July 1, 1918—Oct. 31, 1918
Frank A. Davis (Emergency).....	May 16, 1919—Nov. 30, 1919
Grace M. Watson (Emergency).....	Apr. 1, 1918—June 30, 1918
Grace M. Watson (Emergency).....	July 1, 1920—June 30, 1921
Frank Earl Haas.....	Nov. 1, 1935—
District with Allegan, Barry, Ottawa Counties	

LAKE

District with Mason, Osceola, Wexford Counties	
Lowell Brandon Thomas.....	Nov. 15, 1935—Jan. 31, 1939
Edward Charles Pagel.....	Mar. 20, 1939—

LAPEER

Stephana Butler.....	July 1, 1920—Aug. 31, 1920
District with Macomb County	
Harold Canfield.....	Dec. 1, 1920—June 30, 1921
District with Macomb County	
Harold Canfield.....	Aug. 15, 1922—Apr. 15, 1923
District with Macomb County	
Freeman M. Karn.....	Apr. 16, 1923—Apr. 30, 1924
District with Macomb County	
Harry Kerr Wakefield.....	Nov. 1, 1935—Dec. 31, 1936
District with Macomb, Sanilac, St. Clair Counties	
Kenneth John Anderson.....	Jan. 25, 1937—
District with Macomb, Sanilac, St. Clair Counties	

LENAWEE

Leonard G. Morse (Temporary).....	May 1, 1918—Sept. 30, 1918
Marjorie E. Place.....	June 1, 1920—Apr. 15, 1923
George Samuel Hedrick.....	Apr. 16, 1923—Aug. 15, 1924
Florence Westerman.....	Mar. 1, 1925—Oct. 31, 1926
James Peter Hoekzema.....	Jan. 1, 1929—Dec. 31, 1930
Robert Judson Laser.....	Nov. 1, 1935—
District with Jackson, Monroe, Washtenaw Counties	
Washtenaw dropped, Hillsdale added, Sept. 1, 1936	

LIVINGSTON

Hildred Jay Hart.....	Nov. 1, 1935—Aug. 31, 1936
District with Oakland, Shiawassee Counties	
Hildred Jay Hart.....	Sept. 1, 1936—
District with Oakland, Washtenaw Counties	

LUCE

Malinda R. Cameron (Temporary).....	July 1, 1920—Dec. 31, 1920
Malinda R. Cameron (Temporary).....	July 1, 1922—Dec. 31, 1922
Malinda R. Cameron (Temporary).....	Apr. 1, 1923—Sept. 30, 1923
Malinda R. Cameron (Temporary).....	May 1, 1924—Oct. 31, 1924
Charles E. Blakeslee.....	June 1, 1934—Aug. 31, 1934
Charles E. Blakeslee.....	July 1, 1935—Aug. 31, 1935

MARQUETTE

Howard Christian Rather (Emergency).....	Sept. 1, 1917—Sept. 30, 1917
F. F. Musselman (Emergency).....	June 1, 1918—June 24, 1918
Simon Anderson (Emergency).....	July 1, 1918—Sept. 30, 1918
Clarence C. Walthers (Emergency).....	June 1, 1924—Nov. 30, 1924
Henry W. Bouley (Temporary).....	June 1, 1928—Sept. 1, 1928
Henry W. Bouley (Temporary).....	May 1, 1929—Aug. 1, 1929
Henry W. Bouley (Temporary).....	Apr. 1, 1930—June 30, 1930

MACOMB

Stephana Butler.....	July 1, 1920—Aug. 31, 1920
District with Lapeer County	
Harold Canfield.....	Dec. 1, 1920—June 30, 1921
District with Lapeer County	
Harold Canfield.....	Aug. 15, 1922—Apr. 15, 1923
District with Lapeer County	
Freeman M. Karn.....	Apr. 16, 1923—Apr. 30, 1924
District with Lapeer County	
Harry Kerr Wakefield.....	Nov. 1, 1935—Dec. 31, 1936
District with Lapeer, Sanilac, St. Clair Counties	
Kenneth John Anderson.....	Jan. 25, 1937—
District with Lapeer, Sanilac, St. Clair Counties	

MASON

District with Lake, Osceola, Wexford Counties	
Lowell Brandon Thomas	Nov. 15, 1935—Jan. 31, 1939
Edward Charles Pagel	Mar. 20, 1939—

MECOSTA

Helen Retoska (Emergency)	May 15, 1918—Aug. 31, 1918
Evangeline A. Pryer (Emergency)	June 1, 1918—Aug. 31, 1918
B. J. Ford (Emergency)	Jan. 1, 1918—June 30, 1918

MENOMINEE

Ralph Whitcomb Tenny (Emergency)	Sept. 1, 1917—Oct. 31, 1917
Ralph Whitcomb Tenny (Emergency)	May 1, 1918—Aug. 15, 1918
John L. Bumbalek (Temporary)	May 1, 1924—Oct. 31, 1924
Gustavus Adolphus Thorpe (Temporary)	July 1, 1925—Dec. 31, 1925
Guy P. Williams (Temporary)	July 1, 1926—Dec. 31, 1926
Guy P. Williams (Temporary)	July 1, 1927—Sept. 30, 1927
William F. Thomas (Temporary)	May 1, 1929—June 30, 1929
William F. Thomas (Temporary)	Apr. 1, 1930—June 30, 1930

MISSAUKEE

Verona P. Toman (Emergency)	July 1, 1918—Oct. 31, 1918
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MONROE

Robert Judson Laser	Nov. 1, 1935—Aug. 31, 1936
District with Jackson, Lenawee, Monroe, Washtenaw Counties	
Robert Judson Laser	Sept. 1, 1936—
District with Hillsdale, Jackson, Lenawee, Monroe Counties	

MONTMORENCY

Lester Vance Benjamin	June 15, 1926—June 16, 1929
District with Cheboygan, Otsego Counties	
Llewellyn Benjamin Karr	Jan. 1, 1936—
District with Alpena, Crawford, Otsego, Presque Isle Counties	

MUSKEGON

William J. Atchison (Emergency)	Sept. 1, 1917—Oct. 31, 1917
William J. Atchison (Temporary)	Apr. 1, 1918—Oct. 31, 1918

MIDLAND

Douglas V. Steere (Temporary)	July 1, 1922—Oct. 31, 1922
George Shipps (Temporary)	July 1, 1922—Oct. 31, 1922

MONROE

Frank H. Dexter (Temporary)	Apr. 1, 1922—Sept. 30, 1922
Robert Judson Laser	Nov. 1, 1935—
District with Jackson, Lenawee, Washtenaw Counties	

OAKLAND

Emily L. Castle (Temporary)	July 1, 1918—Oct. 31, 1918
George Henry Kimball, Jr. (Temporary)	Aug. 1, 1921—Mar. 31, 1922
George Henry Kimball, Jr.	Sept. 1, 1922—Dec. 31, 1922
George Henry Kimball, Jr.	Feb. 1, 1923—Jan. 31, 1928
Walter Gospill	Feb. 1, 1928—Dec. 31, 1928
George Henry Kimball, Jr.	Jan. 1, 1929—Feb. 28, 1931
Milbourne Henry Avery	Mar. 1, 1931—Jan. 31, 1934
Hildred Jay Hart	Nov. 1, 1935—Aug. 31, 1936
District with Livingston, Shiawassee Counties	
Hildred Jay Hart	Sept. 1, 1936—
District with Livingston, Washtenaw Counties	

OGEMAW

- Lemuel Harrison Rhodes..... Nov. 1, 1935—
 District with Alcona, Arenac, Iosco Counties

ONTONAGON

- Roy E. Cheney (Temporary)..... June 16, 1918—July 31, 1918
 Mary Regina Thompson..... Sept. 1, 1925—Aug. 31, 1926

OSCEOLA

- Evelyn Pepper Kinney (Temporary)..... May 1, 1920—July 31, 1920
 Evelyn Pepper Kinney (Temporary)..... July 1, 1921—Oct. 31, 1921
 Lowell Brandon Thomas..... Nov. 15, 1935—Jan. 31, 1939
 District with Lake, Mason, Wexford Counties
 Edward Charles Pagel..... Mar. 20, 1939—
 District with Lake, Mason, Wexford Counties

OTSEGO

- Lester Vance Benjamin..... June 15, 1926—Oct. 10, 1930
 District with Cheboygan County
 District included Montmorency until June 16, 1929
 Mary Iford..... Nov. 1, 1930—Sept. 30, 1932
 District with Cheboygan County
 Llewellyn Benjamin Karr..... Jan. 1, 1936—
 District with Alpena, Crawford, Montmorency, Presque Isle Counties

OTTAWA

- Charles W. Morrice (Emergency)..... Sept. 1, 1917—Dec. 31, 1917
 Russel S. Harrington (Emergency)..... Nov. 1, 1917—Dec. 31, 1917
 Lida Rogers (Emergency)..... July 1, 1918—Sept. 30, 1918
 Frank Earl Haas..... Nov. 1, 1935—
 District with Allegan, Barry, Kent Counties

PRESQUE ISLE

- Douglas Van Steere..... June 1, 1922—Oct. 31, 1922
 Llewellyn Benjamin Karr..... Jan. 1, 1936—
 District with Alpena, Crawford, Montmorency, Otsego Counties

SAGINAW

- Burton S. Tefft (Temporary)..... Jan. 1, 1918—Mar. 31, 1918
 R. E. Trippensee (Temporary)..... May 15, 1918—Dec. 31, 1918
 Theresa McDonald (Temporary)..... May 1, 1918—Dec. 15, 1919
 Cecil Perth Pressley (Temporary)..... Sept. 1, 1917—May 10, 1918
 Arthur Lawrence Strang..... May 16, 1920—May 15, 1922
 Clare Alfred Rood..... Apr. 16, 1924—May 9, 1928
 Leonard James Braamse..... June 15, 1928—Oct. 15, 1930
 Roscoe Glenn Smith..... Nov. 1, 1930—Jan. 31, 1934
 Milbourne Henry Avery..... Feb. 1, 1934—Dec. 31, 1935
 George Elwyn Landsburg..... June 1, 1936—

SAINT CLAIR

- District with Lapeer, Macomb, Sanilac Counties
 Harry Kerr Wakefield..... Nov. 1, 1935—Dec. 31, 1936
 Kenneth John Anderson..... Jan. 25, 1937—

SAINT JOSEPH

- George E. Chadwick (Emergency)..... May 1, 1918—Aug. 31, 1918
 Henry C. Gleason..... Nov. 11, 1935—Apr. 30, 1938
 District with Berrien, Cass, Van Buren Counties
 Roy Clifford MacIntyre..... Aug. 1, 1938—
 District with Branch, Kalamazoo Counties

SCHOOLCRAFT

John J. Krammin (Emergency)	June 1, 1918—June 15, 1918
Nellie Fredeen (Emergency)	Sept. 1, 1917—Oct. 31, 1917
Carrie M. Moore (Temporary)	July 1, 1920—Oct. 31, 1920
Carrie M. Moore (Temporary)	July 1, 1921—Dec. 31, 1921
Helen Pratt Shane (Temporary)	July 1, 1922—Dec. 31, 1922
Per Gunnard Lundin (Temporary)	July 1, 1923—Dec. 31, 1923
Per Gunnard Lundin (Temporary)	May 1, 1924—Oct. 31, 1924
Helen Tyrell (Temporary)	Aug. 1, 1925—Oct. 31, 1925
Bernard F. Gaffney (Temporary)	July 1, 1926—Dec. 31, 1926
Bernard F. Gaffney (Temporary)	July 1, 1927—Sept. 30, 1927
W. Herman Johnson (Temporary)	Apr. 1, 1930—June 30, 1930

SANILAC

Dwight C. Cavanaugh	Sept. 1, 1921—Nov. 30, 1921
Harry Kerr Wakefield	Nov. 1, 1935—Dec. 31, 1936
District with Lapeer, Macomb, St. Clair Counties	
Kenneth John Anderson	Jan. 1, 1937—
District with Lapeer, Macomb, St. Clair Counties	

SHIAWASSEE

Martin V. McGill (Temporary)	Apr. 16, 1918—Aug. 31, 1918
Hildred Jay Hart	Nov. 1, 1935—Aug. 31, 1936
District with Livingston, Oakland Counties	

TUSCOLA

Howard Delos Parish	Apr. 1, 1935—
District with Bay, Huron Counties	

VAN BUREN

Charles H. Carroll (Temporary)	Aug. 1, 1918—Sept. 30, 1918
Orrin C. Goss (Temporary)	May 1, 1920—Sept. 30, 1920
Orrin C. Goss	Apr. 1, 1922—Dec. 31, 1922
A. M. Shaw	Mar. 16, 1923—Nov. 15, 1923
Henry C. Gleason	Nov. 11, 1935—Apr. 30, 1938
District with Berrien, Cass, St. Joseph Counties	
Ruford Franklin Bittner	Aug. 1, 1938—
District with Berrien, Cass Counties	

WASHTENAW

E. F. Lyons (Emergency)	Jan. 1, 1919—Aug. 21, 1920 (died)
Amy B. Huesman (Emergency)	July 16, 1918—Sept. 30, 1918
Beryl Otto Hagerman	Jan. 1, 1921—Dec. 1, 1921
A. L. Watt	Apr. 1, 1922—Mar. 31, 1924
Frank Clinton Essick	May 1, 1924—Dec. 31, 1926
Arthur Enoch Hagen	Jan. 1, 1927—Mar. 31, 1933
Robert Judson Laser	Nov. 1, 1935—Aug. 31, 1936
District with Jackson, Lenawee, Monroe Counties	
Hildred Jay Hart	Sept. 1, 1936—
District with Livingston, Oakland Counties	

WAYNE

Mary H. Grosvenor (Emergency)	Sept. 1, 1917—Oct. 31, 1917
Mary H. Grosvenor (Emergency)	Apr. 16, 1918—July 31, 1918
Karla H. Van Ostrand (Emergency)	July 1, 1918—Sept. 30, 1918
Glen Orlando Stewart	Feb. 16, 1919—Apr. 30, 1921
Lawrence W. Ross	July 15, 1921—Sept. 1, 1922
William C. Boman	May 1, 1921—July 15, 1921
J. W. Wagner	July 16, 1922—Dec. 31, 1924
Margaret Eckhardt	Sept. 20, 1929—

WEXFORD

Roy Noteware (Emergency)	June 1, 1918—Aug. 31, 1918
Lowell Brandon Thomas	Nov. 15, 1935—Jan. 31, 1939
District with Lake, Mason, Osceola Counties	
Edward Charles Pagel	Mar. 20, 1939—
District with Lake, Mason, Osceola Counties	

EXTENSION BULLETINS

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|--|---------------------------|--------------------------|
| 1. Inoculation With Nodule Forming Bacteria | Mar. 1916—10,000 copies | Jan. 1917— 5,000 copies |
| | | July 1919—10,000 copies |
| 2. The Babcock Test | Mar. 1916—40,000 copies, | May 1936—20,000 copies |
| 3. Some Seed Potato Questions Answered | Apr. 1916—40,000 copies | Apr. 1919—20,000 copies |
| 4. Home Vegetable Garden | May 1916—20,000 copies, | Apr. 1919—20,000 copies |
| | Nov. 1930—15,000 copies, | Mar. 1931—20,000 copies |
| | Apr. 1933—25,000 copies, | May 1934—20,000 copies |
| | Dec. 1937—20,000 copies | |
| 5. Standardization and Group Classification of Potato Varieties for Michigan | Apr. 1916—20,000 copies | |
| 6. Some Bean Pointers | Apr. 1917—10,000 copies | |
| 7. Suggestions for Growing Potatoes | Apr. 1917— 5,000 copies, | May 1918—10,000 copies |
| | July 1924— 8,000 copies | |
| 8. Home Canning by One Period Cold-Pack Method | July 1917—25,000 copies | |
| 9. Red Rock Wheat | July 1917—20,000 copies | |
| 10. Rosen Rye | July 1917—20,000 copies, | July 1919—20,000 copies |
| 11. Good Seed Means More and Better Corn | Sept. 1917—20,000 copies | |
| 12. Suggestions to Boys Who Wish to Prepare for Farm Work | Mar. 1918—10,000 copies | July 1919—20,000 copies |
| | July 1919—20,000 copies | Mar. 1919—20,000 copies |
| 13. Oat Smut and Its Control | Apr. 1918—50,000 copies, | Mar. 1924—20,000 copies |
| 14. Spray Formulas for the Home Garden | May 1918—20,000 copies | |
| 15. Treatment of Seed Potatoes to Prevent Diseases | May 1918—20,000 copies | |
| 16. The Joint Worm in Michigan | July 1918—20,000 copies | |
| 17. The Stinking Smut of Wheat | Aug. 1918—20,000 copies, | Aug. 1919—30,000 copies |
| 18. Good Health | Jan. 1919—20,000 copies | |
| 19. Grasshopper Control | May 1919—20,000 copies, | June 1920—30,000 copies |
| | Mar. 1935—25,000 copies | |
| 20. Hotbeds and Coldframes | Mar. 1919—20,000 copies, | May 1933—15,000 copies |
| 21. Poultry Culling | Oct. 1919—30,000 copies | |
| 22. Effect Crops Exhibits | July 1921— 8,000 copies | |
| 23. More Alfalfa for Michigan | Oct. 1922—20,000 copies, | Sept. 1923—20,000 copies |
| | Sept. 1924—20,000 copies, | Feb. 1927—20,000 copies |
| | Mar. 1928—20,000 copies, | Jan. 1931—20,000 copies |
| | June 1934—20,000 copies | |
| 24. Utilizing Poles and Timber for Farm Building | Oct. 1924—10,000 copies | |
| 25. Feeding Cull and Surplus Potatoes | Dec. 1922—20,000 copies | |
| 26. Swine Feeding | Jan. 1923—10,000 copies, | Jan. 1925—20,000 copies |
| 27. The Kitchen Sink | Mar. 1923— 8,000 copies, | Apr. 1928—10,000 copies |
| 28. Feeding for Egg Production | May 1923—10,000 copies | |
| 29. The Baby Chick | Mar. 1923—20,000 copies | |
| 30. The Production of Hardigan Alfalfa Seed | May 1923— 5,000 copies | Feb. 1927—10,000 copies |
| | Jan. 1926—15,000 copies | |
| 31. Capons | Aug. 1923—10,000 copies, | Apr. 1934—10,000 copies |
| | Feb. 1929—20,000 copies, | Jan. 1932—10,000 copies |
| 32. Save the Good Bull and Yourself | Feb. 1929—20,000 copies, | Jan. 1932—10,000 copies |
| 33. Bigger Dairy Profits Through Dairy Herd Improvement Association | Oct. 1923—20,000 copies, | Sept. 1929—20,000 copies |
| | Mar. 1924—20,000 copies | |
| 34. Setting a Standard for Seed | Sept. 1924—20,000 copies, | July 1925— 5,000 copies |
| | Apr. 1927—20,000 copies, | July 1931—10,000 copies |
| 35. Curing Alfalfa | Oct. 1924— 5,000 copies | |
| 36. Better Potato Exhibits | Feb. 1925—20,000 copies, | Mar. 1928—10,000 copies |
| | Oct. 1930—10,000 copies | |
| 37. Farm Kitchens | Mar. 1925—30,000 copies | |
| | Apr. 1934—15,000 copies | |
| 38. Fertilizing the Mature Apple Orchard | Mar. 1925—30,000 copies | |
| | Mar. 1925—30,000 copies | |
| 39. Orchard Grafting | Mar. 1925—30,000 copies | |
| 40. Pruning Black Raspberries | Mar. 1925—30,000 copies | |
| 41. Apple Storage | Apr. 1925—20,000 copies | |
| 42. Cherry Leaf-Spot Control | Apr. 1925—20,000 copies | |
| 43. Dewberry Anthracnose Control | Apr. 1925—10,000 copies | |
| 44. Coming Through with Rye | July 1925—20,000 copies | |

45. A Statement of Policy Toward Agricultural Cooperation	Nov. 1925—	2,500 copies
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	Oct. 1930—	25,000 copies, Oct. 1933—10,000 copies
	Oct. 1934—	20,000 copies
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	Feb. 1932—	20,000 copies, Mar. 1933—20,000 copies
	Dec. 1934—	20,000 copies, Jan. 1937—20,000 copies
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55. Plowing for European Corn Borer Control	Apr. 1927—	20,000 copies
	Apr. 1928—	6,000 copies
56. Renting or Keeping Bees for Use in the Orchard	Mar. 1929—	10,000 copies
57. Lime for Michigan Soils	June 1927—	20,000 copies, Dec. 1928—15,000 copies
	Mar. 1932—	20,000 copies
58. Culling the Farm Flock	July 1927—	50,000 copies, Oct. 1934—15,000 copies
59. Methods of Control for European Corn Borer	Sept. 1927—	50,000 copies, Feb. 1936—55,000 copies
	Mar. 1936—	5,000 copies
60. Insects and Disease Control in Gardening	Feb. 1928—	20,000 copies
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62. Growing the Black Raspberry in Michigan	Feb. 1928—	6,000 copies
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67. Producing Sugar Beets	Mar. 1928—	10,000 copies, June 1938—5,000 copies
68. A 10' x 12' Portable Brooding House	Mar. 1928—	20,000 copies, Jan. 1929—10,000 copies
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	Apr. 1936—	8,000 copies, Mar. 1938—5,000 copies
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71. Value and Care of Farm Manure	Apr. 1928—	15,000 copies, Jan. 1931—5,000 copies
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72. Wiring the Farmstead	June 1928—	15,000 copies, May 1932—20,000 copies
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74. The Fruit Bark-Beetle	Jan. 1929—	10,000 copies, Oct. 1930—5,000 copies
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93. The Background of the Room	Sept. 1929—5,000 copies	June 1930—6,000 copies
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97. Home Grown Feeds for Upper Peninsula Dairy Cows		Jan. 1930—15,000 copies
98. Essentials in Clean Milk Production		Jan. 1930—20,000 copies
99. Michigan Outlook, 1930		Mar. 1930—20,000 copies
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101. Standard Dimensions Used in Laying Out Barn Plans		Mar. 1930—15,000 copies June 1938—5,000 copies
102. Arrangement of Barn Floor Plans—Dairy Barn Plan		Mar. 1930—15,000 copies June 1938—5,000 copies
103. Portable Hog Cots	Apr. 1930—20,000 copies	June 1939—20,000 copies
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105. Raising Dairy Calves	May 1931—20,000 copies	July 1936—20,000 copies
106. Accounting for Stored Produce		June 1930—3,000 copies
107. Some Economic Aspects of the Bean Situation		Aug. 1930—10,000 copies
108. Selecting a Sire for the Dairy Herd		Sept. 1930—15,000 copies
109. Producing Quality Cream	Oct. 1930—15,000 copies	Sept. 1935—5,000 copies
110. Bangs Disease	Dec. 1930—10,000 copies, July 1936—20,000 copies	June 1931—10,000 copies
111. Growing Alfalfa Seed in Michigan		Dec. 1930—15,000 copies
112. Pruning Ornamental Shrubs		Jan. 1931—15,000 copies
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114. Suggestions for Better Pastures in Michigan		Jan. 1931—20,000 copies
115. Michigan Outlook, 1931		Mar. 1931—20,000 copies
116. Producing Beans in Michigan		Mar. 1931—20,000 copies
117. Control Methods for Insects of the Kitchen Garden		Apr. 1931—20,000 copies Mar. 1932—15,000 copies May 1934—20,000 copies
118. Michigan Septic Tank and Tile Sewage Disposal Systems		Apr. 1931—20,000 copies Nov. 1935—10,000 copies June 1939—15,000 copies
119. Some Economic Aspects of Potato Situation		July 1931—10,000 copies
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130. Small Sash House	Mar. 1933—5,000 copies	June 1936—8,000 copies
131. Michigan Outlook, 1933		Mar. 1933—10,000 copies
132. Successful Home Canning	May 1933—15,000 copies, July 1935—20,000 copies	Nov. 1933—20,000 copies June 1939—10,000 copies
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134. Common Binder Head and Knotter Head Troubles		Dec. 1933—15,000 copies

135. Michigan Outlook, 1934.....	Jan. 1934—10,000 copies
136. Living With Pictures.....	Jan. 1934—10,000 copies, Jan. 1936—10,000 copies July 1937—6,000 copies, July 1938—15,000 copies
137. Michigan Turkeys.....	Mar. 1934—10,000 copies, Nov. 1935—10,000 copies June 1939—10,000 copies
138. The Bean Weevil.....	Mar. 1934—50,000 copies
139. Replacement Crops for Michigan Contracted Acres.....	Apr. 1934—20,000 copies
140. Milk, The Ideal Food.....	Apr. 1934—10,000 copies, Aug. 1934—20,000 copies Dec. 1938—10,000 copies, Jan. 1939—10,000 copies
141. Temporary Silos for Michigan.....	Aug. 1934—10,000 copies
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150. Hints for Using Honey.....	Oct. 1935—10,000 copies, Sept. 1936—10,000 copies
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158. Timely Tomato Topics.....	Feb. 1936—15,000 copies
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177. Oat Culture in Michigan.....	Feb. 1937—20,000 copies
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179. Bean, Cabbage and Onion Maggots.....	Mar. 1937—20,000 copies
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192. Insects Attacking Stored Grains and Cereal Products.....	June 1938—7,500 copies
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3. How to Carry Out the Bean Growing Project.....	May 1915—5,000 copies July 1924—5,000 copies Sept. 1933—5,000 copies
4. Organization of 4-H Clubs.....	Jan. 1915—20,000 copies, Jan. 1916—10,000 copies
5. Pig Club Work.....	Jan. 1916—10,000 copies, Aug. 1923—10,000 copies Apr. 1930—10,000 copies
6. Poultry Club Work.....	Jan. 1916—10,000 copies, Jan. 1917—5,000 copies Apr. 1918—5,000 copies, July 1924—8,000 copies Apr. 1916—10,000 copies
7. Growing Corn.....	Apr. 1916—10,000 copies
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9a. The Well-Dressed Girl in Cotton, Project I (title revised).....	June 1939—60,000 copies
9b. Summer Wardrobe, Project II.....	Sept. 1936—25,000 copies, Oct. 1938—5,000 copies
9c. The Summer Costume.....	Sept. 1937—10,000 copies
9d. Color Inserts for Club Bulletin No. 9.....	Sept. 1936—10,000 copies July 1938—6,000 copies
10. Home Canning by the One Period Cold Pack Method.....	May 1917—15,000 copies, May 1919—20,000 copies Aug. 1922—20,000 copies, Apr. 1927—20,000 copies June 1931—20,000 copies, Apr. 1934—20,000 copies May 1937—20,000 copies
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11a. Handicraft Club Work.....	Jan. 1927—5,000 copies, June 1930—20,000 copies Oct. 1933—20,000 copies, Apr. 1937—30,000 copies
11b. Advanced Handicraft Club Work.....	June 1930—20,000 copies Sept. 1937—15,000 copies

12.	Hot Lunch Project.....	Sept. 1918—10,000 copies, Jan. 1920—20,000 copies Aug. 1927—10,000 copies, Nov. 1934—20,000 copies June 1939— 5,000 copies
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15.	Food Study Club Work.....	Jan. 1924— 5,000 copies, June 1930—10,000 copies July 1932— 5,000 copies, Apr. 1934—10,000 copies May 1935—20,000 copies
16.	Michigan Club Songs.....	Dec. 1924—20,000 copies, Mar. 1925— 8,000 copies
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19.	Forest Planting Handbook.....	Apr. 1929— 5,000 copies
20.	Garden Clubs in the Upper Peninsula.....	Feb. 1931—12,000 copies
21.	Leaders' Guide for 4-H Sheep Club.....	July 1931— 5,000 copies
22.	A Guide for 4-H Dairy Club Leaders.....	Sept. 1931— 5,000 copies
23.	Michigan 4-H Forest Ranger.....	Mar. 1932—10,000 copies
24.	Forest Warden's Handbook.....	July 1932—20,000 copies, Mar. 1935— 5,000 copies
25.	4-H Farm Electric Project.....	Oct. 1933— 5,000 copies, Dec. 1937— 5,000 copies
26.	4-H Wood Identification.....	Dec. 1934—20,000 copies
27.	Forest Cruisers Handbook.....	Apr. 1935— 5,000 copies
28.	4-H Health Club.....	Sept. 1934—35,000 copies, Dec. 1936—20,000 copies Oct. 1938—35,000 copies
29.	4-H Conservation Program.....	Mar. 1937—20,000 copies
30.	Meal Planning.....	Mar. 1937— 5,000 copies
	Food Preparation, Project I.....	May 1939—12,000 copies
30a.	Food Preparation, Project II.....	May 1939— 8,000 copies
31.	4-H Forest Fire Studies.....	Mar. 1937— 5,000 copies, May 1939— 5,000 copies
31a.	4-H Forest Fire Studies, Second Year.....	June 1939— 5,000 copies
32.	Food Preparation, First and Second Year.....	Mar. 1937—12,000 copies May 1939— 5,000 copies
33.	4-H Soil Conservation Program.....	Apr. 1937— 5,000 copies, Dec. 1938— 5,000 copies Feb. 1939— 5,000 copies
34.	4-H Garden Club Suggestions.....	May 1933—20,000 copies, Apr. 1937—10,000 copies June 1939—30,000 copies
35.	Advanced 4-H Canning.....	Feb. 1938— 5,000 copies
36.	Pheasant 4-H Clubs.....	Aug. 1938— 5,000 copies
37.	Electrical Projects for 4-H Clubs.....	Oct. 1938— 5,000 copies
38.	4-H Sheep Club Manual.....	May 1939—10,000 copies
39.	4-H Colt Club Manual.....	June 1939—10,000 copies

FUNDS USED IN EXTENSION WORK

Fiscal Year	Federal-Lever	Supple-mentary Lever	Capper-Ketcham	Additional Co-op.	Triple A	U.S.D.A.	Clark-McNary	Bankhead-Jones	State of Michigan	Co. Board of Super.	Co. Farm Bureau
1914-15.....	\$ 10,000.00								\$ 16,845.84		
1915-16.....	28,032.37								18,032.37	\$ 21,040.00	
1916-17.....	43,059.35					\$ 21,702.00			33,059.35	35,121.00	
1917-18.....	58,086.33					28,701.00			53,480.33	52,965.00	
1918-19.....	73,113.31					28,700.00			46,125.51	90,887.00	\$ 10,383.00
1919-20.....	88,140.29	\$ 45,080.94				15,777.00			81,986.78	129,948.00	89,000.00
1920-21.....	103,167.27	45,080.94				16,770.00			90,000.00	174,906.00	434,250.00
1921-22.....	109,942.63	41,642.76				11,502.00			140,000.00	149,256.00	275,000.00
1922-23.....	123,823.55	36,090.40				9,690.00			140,000.00	96,006.00	174,000.00
1923-24.....	123,823.55	36,090.40				9,697.00			150,000.00	101,270.00	138,442.00
1924-25.....	123,823.55	36,090.40				9,500.00			150,000.00	120,116.00	99,530.00
1925-26.....	123,823.55	36,090.40				11,000.00			150,000.00	137,665.00	67,275.00
1926-27.....	123,823.55	36,090.40				9,500.00	\$1,500.00		220,000.00	158,529.00	34,090.00
1927-28.....	123,823.55	36,090.40				9,600.00	1,500.00		335,000.00	178,872.00	22,678.00
1928-29.....	123,823.55	43,725.77	\$ 20,000.00			9,800.00	1,980.00		335,000.00	202,862.00	12,263.00
1929-30.....	123,823.55	43,725.77	33,837.26			9,800.00	1,980.00		335,000.00	218,659.00	8,358.00
1930-31.....	123,823.55	43,725.77	33,837.26			9,800.00	1,980.00		335,000.00	257,099.00	6,381.00
1931-32.....	127,337.06	45,040.88	34,253.44			9,800.00	1,980.00		336,000.00	295,796.00	2,220.00
1932-33.....	127,335.54	45,040.29	34,253.44			9,250.00	1,980.00		238,500.00	277,779.00	1,010.00
1933-34.....	127,335.54	45,040.29	34,253.44	\$ 22,000.00	\$ 34,000.00	7,900.00	1,620.00		212,500.00	175,585.00	
1934-35.....	127,335.54	45,040.29	34,253.44	22,000.00	130,000.00	2,000.00	1,620.00		178,609.00	111,795.00	
1935-36.....	127,335.54	45,040.29	34,253.44	11,000.00		335.00	1,620.00	\$199,451.59	178,609.00	122,014.00	
1936-37.....	127,335.54	33,780.22	34,253.44	7,000.00			1,620.00	225,014.49	200,000.00	116,692.00	
1937-38.....	127,335.54	22,520.14	34,253.44				1,620.00	250,577.39	228,000.00	134,882.00	
1938-39.....	127,335.54	11,260.07	34,253.44				1,620.00	276,140.29	228,000.00	145,954.00	

