SUGGESTED PROGRAMS
IN EVENING CLASSES FOR FARM MECHANICS
(For Alumni Members of the Future Farmers of America)
by
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APPROVED:

Professor of Industrial Arts Education
In Charge of Major

Chairman of School Graduate Committee

Chairman of College Graduate Council
ACKNOWLEDGEMENT

The author wishes to express his sincere appreciation to the State Supervisors of Vocational Agriculture, and to their agriculture instructors for their interest shown and the information they have furnished for this thesis, and to Professor George B. Cox, head of the Industrial Arts Education Department for his constructive criticism of the manuscript.

J. R. M.
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PREFACE

Farming has grown from "a living" for the class of people born to the earth, to a scientific business. The farmer is no longer content merely to till the soil, plant the seed, and harvest what crop Mother Nature yields back to him, but he now determines in advance the value of the soil for producing any one of many crops which experimental processes show might be produced on that particular type of soil.

The farmer of today must be educated for his business more than in many other occupations which take years of schooling. Under the older order, agriculture was developed under small, self-sufficing home units where industry and agriculture were under the same management. Under the new economic order, industry has left the home and taken its training with it. Agriculture, in order to keep pace with the new order, must improve the facilities for educating its sons and daughters or fall back and be dominated by industry.

With the recovery of farming after the industrial revolution, farmers began to realize the need for scientific agricultural and mechanical training in the
public schools below the college level. This feeling of need culminated in the passage by Congress, in 1917, of the Smith-Hughes Act, aiding in the establishment of vocational classes for agriculture, industry, and homemaking - all on the high school level and in accordance with prescribed standards. From these classes grew the organization of the Future Farmers of America, a hundred thousand farm boys who have dedicated their lives to the improvement of agriculture in the United States.

With recovery from the recent depression came the abolition of child labor and the new social order, raising the age of employment, prolonging the schooling period, and increasing the standards of education beneath the college level. From this new order grew the alumni organization of the Future Farmers of America. The purpose of this organization is to hold or bring back for further instructions along agricultural lines, those members who have graduated or dropped out of school without employment.

Through a survey of selected schools from various states and all the schools of California having alumni chapters, the author proposes to determine the type of work carried on by the alumni chapters, and to suggest programs in farm mechanics for alumni members.
SUGGESTED PROGRAMS
IN EVENING CLASSES FOR FARM MECHANICS
(For Alumni Members of the Future Farmers of America)

SECTION I
INTRODUCTION

A. Reasons for the Study

The rapid growth in the number of Future Farmers in America, with apparently no opportunity to cooperate and to carry on the practices they learned in school after their graduation, gave the author the conception for this thesis. The possible benefits to be derived from a program of further instruction to graduate Future Farmers seem to the author to include the following:

1) To fill the gap that now exists between high school and adult organizations, such as the Grange and Farm Bureau.

2) To further instruct young farmers on the technicalities of farm enterprises.

3) To furnish a means of community social contact.

4) To give instruction on new phases of farming and farm laws.
5) To cooperate in the purchase and marketing of farm products.

6) To give opportunity to young farmers to improve the mechanical skills of the farm.

7) To learn new trends in types of machinery, upkeep and operation.

B. Method of Procedure

In preparing this thesis, the aims and objectives of the alumni chapters of Future Farmers of America were traced to determine the development of young farmers from every section of the United States. A great amount of material was obtained, but due to the fact that the alumni program is very new and is in the embryo stage of development, it was difficult to find any set policies in alumni programs.

The author submitted questionnaires to every State Supervisor of Vocational Agriculture in the United States and received much comment on the work, but few had definite programs to offer. Questionnaires were also mailed to sixty-one agriculture instructors who were recommended by the State Supervisors as leaders in alumni work. The percentage of returns from each survey ran high and much interest was shown in the work which encouraged the author in preparing the suggested programs in farm mechanics for alumni members of the Future Farmers of America.
SECTION II

HISTORY OF THE FUTURE FARMERS OF AMERICA
AND ALUMNI CHAPTERS

A. The Smith-Hughes Act as an Aid
   to Vocational Education

President Wilson signed the Smith-Hughes Act on
February 24, 1917. It is permanent legislation providing
Federal Aid to the states for the training of boys and
girls over fourteen years of age and under college grade.
The purpose of the Act in agriculture is to encourage
education designed to meet the needs of persons entering
upon or preparing to enter the work of the farm or the
farm home.

The administration of the Act is set forth in Section
One as follows:¹

Be it enacted by the Senate and House of
Representatives of the United States of
America in Congress assembled: That there
is hereby annually appropriated, out of any
money in the Treasury not otherwise approp-
riated, the sums provided in Sections Two,
Three and Four of this Act, to be paid to the
respective States for the purpose of co-
operating with the States in paying the

¹ Federal Board for Vocational Education, Washington D.C.,
salaries of teachers, supervisors, and directors of agricultural subjects, and teachers of trade, home economics, and industrial subjects, and in the preparation of teachers of agricultural, trade, industrial, and home economics subjects; and the sum provided for in Section Seven for the use of the Federal Board of Vocational Education for the Administration of this Act and for the purpose of making studies, investigations, and reports to aid in the organization and conduct of vocational education, which sums shall be expended as hereinafter provided.

B. Organization of the Future Farmers of America

In a magazine article, "What Do You Mean Future Farmers of America," W. A. Ross2 gives a brief review of the history of the Future Farmers of America, as follows:

Since vocational agriculture courses were first established in the high schools in 1917 under the provisions of the Smith-Hughes Act, boys enrolled in these courses felt a spirit of comradeship due to the common background of country life and desires with the regard to farming as a vocation. It was natural then in certain localities for them to draw together in groups, so-called agriculture clubs. Such groups were largely social and recreational, but also included educational, self-improvement, and cooperative features as well. Under the guiding hand of enterprising teachers, these undertakings marked the first expression of students of vocational agriculture to do things in an organized way.

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Within a few years students tried out the idea of banding together in state organizations. This move established contacts between different localities and widened the interest of groups. Between 1923 and 1928 a number of states formed state-wide organizations of vocational agriculture boys. While the names Young Farmers, Junior Farmers, Future Farmers, and the like were applied to these groups of vocational agriculture students as they developed in various sections of the country, the name "Future Farmers" seemed to be the most popular. This was due, no doubt, to the pioneer work of the Future Farmers of Virginia. In this state, Henry Groseclose and his associates had developed an outstanding organization with distinct purposes, and with a splendid constitution and ceremonies. New Jersey, Tennessee, Arkansas, North Carolina, South Carolina, Oklahoma, Wyoming, Utah, New York and California also were doing splendid work along this line.

By 1928 the time was ripe for a national organization of students of vocational agriculture. From the western states came a proposal to build nationally upon the good work of Virginia and other pioneer states to launch the "Future Farmers of America". So it came to pass, under the leadership of the staff of the Agriculture Education Service, cooperating with State Supervisors of Vocational Education, a temporary Constitution and By-Laws for the Future Farmers of America, patterned very closely after that of the Future Farmers of Virginia and similar organizations were drafted during the summer of 1928. In November of that year the national organization of the Future Farmers of America was born at Kansas City. As it now stands there are four thousand chapters in forty-seven states, the territory of Hawaii and Puerto Rico.
Each local chapter of the Future Farmers of America has adopted its own aims and objectives as an organized group, but as a whole all chapters have the same purpose in common which is described in the following eleven points:

1) To develop competent, aggressive, rural and agricultural leadership.

2) To strengthen the confidence of the farm boy in himself and his work.

3) To create more interest in the intelligent choice of farming occupations.

4) To create a love of country life.

5) To improve the rural home and its surroundings.

6) To encourage cooperative effort among students of vocational education in agriculture.

7) To promote thrift among students of vocational education in agriculture.

8) To promote and improve scholarship.

9) To encourage organized recreational activities among students of vocational agriculture.

10) To supplement the regular systematic instruction offered to students of vocational education in agriculture.

11) To advance the cause of vocational education in agriculture in the public schools.
Most chapters now carry on a cooperative business within the chapter membership and within the community, having their own marketing and purchasing "pools" where farm necessities are purchased by the chapter and distributed to its members at a minimum cost. Some chapters have purchased machinery for cooperative farming.

C. Need of Alumni Chapters is Recognized

To present the picture of the need of alumni chapters, the author wishes to include an unpublished address by Henry Doddridge, now President of the California Alumni Association, Future Farmers of America. This address was delivered before the 1935 convention of the California Future Farmers at San Luis Obispo just before his graduation from high school.

I should like, first, to give you a picture of the average Future Farmer upon graduating from high school. The day he leaves high school, he loses actual contact with the organization of the Future Farmers of America, where he has been trained to work cooperatively. Let us see how great is this separation. He has been associating with a number of his fellow members since he first started grammar school. He knows these boys he has been working with in the Future Farmers organization as well as he knows anyone, other than his parents. He knows the boys who

3 Doddridge, Henry, Unpublished Address - 1935 Convention, Future Farmers of America, San Luis Obispo, California.
will work; the boys who can be depended upon. He knows both the faults and the good points of these companions of his. They have been in training together in the Future Farmers for four years, learning to work cooperatively. In their last two years in high school the leaders have been chosen and they, with their fellow members, have carried the burden of the Future Farmer activities in their respective high schools. They are now coming to realize the value of keeping project records and carrying on the cooperative activities which they have been taught.

Now, with this foundation laid, when he understands the cooperative work and believes in it, just when he is ready to put into effect the ideals he has learned, comes the day of graduation. He has finished high school; he goes to work on his father's farm. A great many of these boys never meet again. Few, if any, cooperative activities are practiced. Only about five percent of these boys pay their Future Farmer dues for the following year and attend the meetings. The individual, for the most part, finds that his interests have changed somewhat since entering the actual job of farming. The needs of the immediate present occupy his time and thought to such an extent that Future Farmer activities soon tend to become secondary. Within two years he is just another farmer with a better knowledge of farming. He knows the cooperative principles he learned in high school are fundamentally right, but how to put them into effect among other farmers who have not been so trained is a problem he finds hard to solve.

The foundation of the Future Farmers of America is well laid; it is set in the bedrock of proven principles. What a pity that this foundation should be left unused! We know the splendid work in cooperation, leadership, and agricultural improvements being done by the Future Farmers in their communities. Now, are we going to allow
this splendid foundation to be left unused? We must not. It is our duty to preserve these qualities and weld them together into a new and stronger organization.

It is time we are giving more thought and consideration to the advancement of agriculture through a better grade of agriculture. It is time we quit depicting the farmer as a skinny, old man with a white beard driving a very delapidated "fliver". Farming is a science. It is governed by scientific rules of crop rotation, fertilization, and by proper management. The advancement of scientific agriculture has just begun. We need an organization to further the advancement of agriculture. We, the Future Farmers of America, by virtue of our training, should be the best qualified organization in the United States to labor for the advancement of agriculture. We as Future Farmers are united. Why should we disband after leaving high school? We must not. We must bind ourselves together into an organization of men stronger, older, and more capable to carry out the ideals of our training.

We must build from the foundation of the Future Farmers of America a constructive organization whose aim shall be to make country life so attractive, both in material returns and social advantages, as to offer inducements that can compete with those of the city. Sunshine and blue sky are all right as a starter, and every true son of the soil values them dearly, but they are not a complete and satisfying substitute for a bath room and running water and a little ready money in the bank.

Graduate members of the Future Farmers of America are forming alumni associations all over the United States. Last year's graduate members from all parts of Tennessee met in Nashville and organized a state organization known as the Future Farmer
Alumni of Tennessee. The time is here; the need is constantly growing greater, and it remains for us to take the initiative and organize the alumni into a National unit.

D. Organization of Alumni Chapters as a Part of the Future Farmers of America Program

The need being recognized for the continuance of the Future Farmer work after graduation, local communities organized groups of alumni in various parts of the United States as early as 1930; but not until April 1934, when a state constitution and by-laws were written for the State of Tennessee, was a state alumni association organized. In 1935 and 1936 state associations were organized in Oregon, Missouri, California and Wisconsin.

It is the hope of these newly formed groups to fill a long felt need by bridging the gap between the high school graduate and the already established adult farm organizations. The training which the alumni of the Future Farmers of America will naturally receive in such participation will, in the future, make better leaders and more loyal members in the older organizations. The outstanding fact proven by the forming of this organization is that the work of the Future Farmers of America has been too valuable to be left behind upon finishing study in high school.
Aims and Objectives of State Organizations

The purpose of the alumni organization has been definitely standardized in constitution and by-laws of the various states which are carrying on alumni work through state organized groups. The aims and objectives of several state organizations are cited to bring out more clearly their individual purposes:

1. California Future Farmer Alumni Association

Sec. B. The purposes for which this organization is formed are as follows:

1. To improve agricultural conditions and practices in California.

2. To develop in individuals now farming or preparing to farm leadership, cooperative attitudes, and rural responsibility.

3. To advance the cause of vocational agricultural education, and to encourage and support the Future Farmers of America.

4. To carry on the principles and precepts of Future Farmer work to a point where the members are sufficiently prepared to become active members or leaders in other rural organizations working toward the advancement of California agriculture.

2. Missouri Chapter, Future Farmer Alumni

Article III - Objectives

1. To promote, foster, and protect voca-
tional agriculture in the high schools of Missouri.

2. To promote and assist in the work of the Future Farmers of America.

3. To improve the economic, educational and social conditions of rural America.

4. To cooperate with other agencies whose objectives are the improvement of rural America.

5. To aid in bridging the gap between participation in high school organizations and membership in adult farm organizations.

3. Oregon Future Farmers of America Alumni

Sec. B. The purposes for which this organization is formed are as follows:

1. To encourage and support the Future Farmers of America and to act as an organization to continue the type of training and activity carried on by the Future Farmers of America.

2. To cooperate with the Farmer's Union, the Grange, the Farm Bureau, and other farm organizations by encouraging membership and active participation in their activities.

3. To promote and develop cooperative efforts.

4. To further promote rural leadership.

5. To study and apply improved farm practices.

6. To acquire and maintain high standards in the farming profession.

7. To improve the rural home and its surroundings.
8. To promote group fellowship among young farmers.

9. To become familiar with and take active part in economic, community, and agricultural problems.

10. To maintain social, moral, and physical qualities within the organization.

4. Wisconsin Junior Agricultural Association

Sec. II. Purpose

1. Education
2. Service
3. Agricultural Leadership
4. Recreation
SECTION III

A SURVEY OF ALUMNI CHAPTERS TO DETERMINE
THE DEVELOPMENT OF THE PROGRAM

A. Survey of States

To determine the extent of the work carried on in various parts of the United States, the author made a survey of the States through the State Supervisors of Agricultural Education. With the exception of California, all State Supervisors were requested to supply the names of three high schools in their state that have the strongest alumni chapters, also to briefly state their opinion of this work and its possibilities as a part of the Adult Educational Program. In California all schools having organized alumni chapters were surveyed. The questionnaire and the letter of transmittal, which were mailed in November 1936 to each of the forty-eight State Supervisors, follows:
In various states Alumni Chapters of the Future Farmers of America have been organized to take care of the increasing responsibility of the high school in further educating those who have graduated or those who have dropped out of the regular school course before the age of employment. A survey of selected schools from those states having alumni chapters is being made to determine the type of work carried on, especially in Agriculture Mechanics. A copy of the questionnaire for this study is enclosed that you may judge the nature of the survey.

As your state is one of the leaders in the organization of alumni work, the writer would like to secure information from teachers in what you consider to be the three most important centers of development for this Alumni F.F.A. program. We shall consider it a distinct favor if you will please assist in this study by furnishing the names and addresses of the teachers in these centers of development; also please give the information concerning the date of organization, etc. within your state.

When the survey is completed and tabulated, a summary of the study will be available, if desired.

Very truly yours,

Ray Messinger
QUESTIONNAIRE

Name of State ........................................
Name of person reporting ...........................
Position ..............................................
Address ............................................... 

When was your State Alumni Chapter of the 
Future Farmers of America organized? .......... 

How many schools in your state have Alumni Chapters? ... 

Do you have a State Constitution and By-Laws 
for the Alumni Association? ....................... 

If so, will you please include a copy with this 
questionnaire? 

Please refer me to three schools in your state which 
you consider have the strongest alumni chapters of 
the Future Farmers of America, giving the name and 
address of the agriculture instructor in each. 

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State briefly your opinion of the work of alumni chapters 
and its possibilities as a part of the new program in 
Adult Education. 

Please check here ( ) if you wish a summary of this study.
Opinions of State Supervisors of Agriculture

The author wishes to include here excerpts from letters received from State Supervisors of Vocational Agriculture, who briefly expressed their opinion of the possibilities of the work of alumni chapters, Future Farmers of America, as a part of the new program in Adult Education:

L. R. DAVIES, Supervisor of Agriculture, State of COLORADO:

Properly used, I believe it is of unlimited value in developing a new program for adult and part-time education.

LESTER B. POLLOM, Advisor of State Board, State of KANSAS:

Can serve a worthy purpose if kept distinct from the high school organization. Must not compete with the high school group or over-shadow their efforts.

R. L. HAHN, Supervisor of Agriculture, State of CONNECTICUT:

Would rather see F.F.A. members take their places in existing organizations and make themselves felt. If their purpose and ultimate objectives were different, reason for their separate existence might be justified. Will Rogers once said humorously, half of the Americans were just going to and the other half just coming from conventions.
G. H. BALDWIN, Supervisor of Agriculture, State of RHODE ISLAND:

The Future Farmers of America program is in conflict with our state educational law, therefore we do not have it in our schools.

H. T. HALL, Acting Supervisor of Agriculture, State of IOWA:

An increasing number of departments - approximately twenty percent are offering part-time work this year for boys out of school living on farms. We have a state organization known as "The Rural Young People's Assembly" which is serving the out of school group.

J. L. PERRIN, Supervisor of Agriculture, State of MISSOURI:

The local Alumni Chapter is most valuable as an organization for youth who are not yet ready to join an adult farm organization. It should interest the part-time group especially.

G. FREEMAN, Supervisor of Agriculture, State of TENNESSEE:

Coupled with an instructional program, I believe it an excellent device to follow up former students and means of contacting other part-time prospects. It also affords a means of supplying the recreational opportunities for rural youth.

JULIAN MCPHEE, Bureau Chief, Agriculture Education, State of CALIFORNIA:

I feel that the alumni chapters of the Future Farmers of America have a wonderful opportunity in developing educationally, provided we are liberal in allowing the out-of-school farm boys to participate
regardless of whether or not he has been a member of this organization. The Future Farmer alumni have opportunities of meeting under the guiding influence of local agriculture instructors and continuing their education along agricultural lines until they are sure enough of the adult organizations.

E. E. GALLUP, State Advisor, F. F. A., State of MICHIGAN:

We have no such organization as the alumni of the Future Farmers of America. In fact, we do not believe in this movement. Our Future Farmers go directly upon graduation from high school into the Farm Bureau or the Grange or both. Many of our Future Farmers are members of the Grange even before graduation.

In Michigan we believe that the adjustment from the adolescent to the adult group should be made directly and not through any intermediate organization. The Michigan Farm Bureau has a junior division known as Junior Farm Bureau into which some of our Future Farmers go after graduation. The Junior Farm Bureau is a training ground, of course, for the Farm Bureau. It is a part of the Farm Bureau organization. The Farm Bureau took one of our very best agriculture teachers as the director of this division.

We believe there is too much danger of loss in an intermediate organization in which boys from eighteen to twenty-five may go. We believe it is much better to make the transition from the adolescent to the adult group directly.

J. E. BORDER, Director of Agriculture, State of MONTANA:

We are organizing a 'Young Farmer's Organization', which after a program of part-time education will be made a part-time F.F.A. With the Junior Farm Bureau
entering the picture, we are waiting to see what will happen to it. We would rather cooperate with other organizations than run the show ourselves.

A. K. GETMAN, Chief Supervisor - Agriculture, State of NEW YORK:

Very little has been done in urging separate alumni chapters in New York. However, a majority of schools do have short courses with rather information organizations.

H. O. SAMPSON, Supervisor of Agriculture, State of NEW JERSEY:

A few of our local chapters have alumni groups. Some of our part-time agricultural classes are made up in part of former Future Farmer members, but in most cases these groups prefer to call themselves by some such name as 'Young Farmers Organization' rather than alumni of the Future Farmers of America. My own thought about this matter is that it needs much study.

RALPH HOWARD, Supervisor of Agriculture, State of OHIO:

In reply to your letter, we do not have alumni chapters of the Future Farmers of America in Ohio. We have 'Young Farmers Organizations' which were organized some fifteen years ago. The members of these organizations are students in our part-time classes in agriculture. At the present time some of these members are graduates of all-day departments and ex-Future Farmer members. Others are high school graduates who have had no vocational training or have dropped out of school before finishing their high school course. Therefore, I believe we will be unable to help you in your study in Ohio.
H. C. FETTERROLF, Chief, Agriculture Education, State of PENNSYLVANIA:

We are putting forth a special effort to enroll out-of-school boys in part-time classes, but have not done this as a feature of our Future Farmer program.

L. M. SASMAN, State Advisor, F. F. A., State of WISCONSIN:

Our organization is not limited to Future Farmer alumni, as will be noted from our constitution. We have a large number of out-of-school boys who have never gone to high school, and we feel that it is exceedingly important that they be reached with an educational program. The Future Farmers of America alumni will probably be the leaders in this movement.

WILLIAM KERR, Director of Vocational Education, State of IDAHO:

We are not sure as yet what kind of a name will be given to the alumni organizations and whether they will be tied up with the high school organizations. We have found that the boys are distinctly different in their thoughts and ideas of what should be done. This year we are organizing a number of part-time groups throughout the state which will be composed of Future Farmer members, so we will know more about this problem after meeting with these various groups.

The general trend of these responses shows progress is being made very rapidly toward state organizations for boys who have graduated or dropped out of high school. Although some states do not favor intermediate organizations, the majority are forming local chapters which will be a unit in their Adult Education Program.
TABLE I

Showing the States Reporting
And the Number of Alumni Chapters
Organized in Each State

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<th>Name of State Reporting</th>
<th>Number of Chapters Organized</th>
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<td>Alabama</td>
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</tr>
<tr>
<td>Illinois</td>
<td>0</td>
</tr>
<tr>
<td>Indiana</td>
<td>0</td>
</tr>
<tr>
<td>Iowa</td>
<td>6</td>
</tr>
<tr>
<td>Kansas</td>
<td>12</td>
</tr>
<tr>
<td>Louisiana</td>
<td>3</td>
</tr>
<tr>
<td>Maine</td>
<td>0</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>0</td>
</tr>
<tr>
<td>Michigan</td>
<td>0</td>
</tr>
<tr>
<td>Minnesota</td>
<td>0</td>
</tr>
<tr>
<td>Missouri</td>
<td>32</td>
</tr>
<tr>
<td>Montana</td>
<td>0</td>
</tr>
<tr>
<td>Nebraska</td>
<td>0</td>
</tr>
<tr>
<td>Nevada</td>
<td>0</td>
</tr>
<tr>
<td>New Jersey</td>
<td>1</td>
</tr>
<tr>
<td>New York</td>
<td>3</td>
</tr>
<tr>
<td>North Carolina</td>
<td>0</td>
</tr>
<tr>
<td>New Mexico</td>
<td>0</td>
</tr>
<tr>
<td>Ohio</td>
<td>0</td>
</tr>
<tr>
<td>Oregon</td>
<td>8</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>0</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>0</td>
</tr>
<tr>
<td>South Carolina</td>
<td>0</td>
</tr>
<tr>
<td>South Dakota</td>
<td>0</td>
</tr>
<tr>
<td>Tennessee</td>
<td>50</td>
</tr>
<tr>
<td>Texas</td>
<td>5</td>
</tr>
<tr>
<td>Utah</td>
<td>0</td>
</tr>
<tr>
<td>Vermont</td>
<td>0</td>
</tr>
<tr>
<td>West Virginia</td>
<td>0</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>30</td>
</tr>
<tr>
<td>Wyoming</td>
<td>0</td>
</tr>
</tbody>
</table>
The result of the survey of states as tabulated under Table I shows an approximate total of 184 alumni chapters organized in the thirty-eight states reporting.

TABLE II

Showing States Having a State Alumni Organization And the Date of its Origination

<table>
<thead>
<tr>
<th>Name of State</th>
<th>Date Organized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tennessee</td>
<td>April, 1934</td>
</tr>
<tr>
<td>Oregon</td>
<td>May, 1935</td>
</tr>
<tr>
<td>Missouri</td>
<td>October, 1935</td>
</tr>
<tr>
<td>California</td>
<td>May, 1936</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>October, 1936</td>
</tr>
</tbody>
</table>

As it will be noted from these tabulations, the organization of state alumni associations of the Future Farmers of America is very new and not a great deal of information is available from the state offices. However, many states have local chapters organized and are carrying on a well organized program of work.
B. Survey of Alumni Chapters

In surveying the alumni chapters of the Future Farmers of America, a questionnaire and letter of transmittal were prepared and sent to the three high schools in each state having the strongest alumni chapters, and to all California schools with organized alumni groups. Replies were received from forty-six of the sixty-one questionnaires sent out, or a percentage return of seventy-five. Of this number, fourteen were discarded because alumni chapters were only in the process of organization and the questionnaires were not complete.

The questionnaire and accompanying letter which were mailed in February 1937 follows:
With the recovery from the depression and the abolition of child labor, the age of employment has been raised, prolonging the schooling period and increasing the responsibility of the high school in further educating those who have graduated or those who have become uninterested and dropped out of the regular school course.

Since your department is one that has taken up this responsibility by the organization of an Alumni Chapter of the Future Farmers of America, the writer wishes to learn your reactions to the possibilities and future of the alumni work.

The future success of these Alumni Chapters will depend largely upon the type of programs used to hold the interest of the members. A survey of selected schools from various states and all schools in California having Alumni Chapters is being made to determine the kind of work carried on, especially in Agriculture Mechanics.

Will you kindly fill out the attached questionnaire, with the cooperation of your Agriculture Mechanics teacher, and mail it in the self-addressed envelope? A prompt reply would be appreciated. Any additional suggestions or plans for programs which you may have would be helpful.

When the survey is completed and tabulated, a summary of the study will be made available, if desired. An extra copy of the questionnaire is included for your files.

Yours truly,

RAY MESSINGER
<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>When was your F.F.A. alumni program organized?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many members do you have at the present time?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>About what percent of your alumni Future Farmers are farming at the present time?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>About what percent of your alumni Future Farmers belong to the alumni organization?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you have regular meetings?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is your average attendance?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you have a social program?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you have an instructional program in Agriculture?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you have an instructional program in Farm Mechanics?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are your evening programs organized under the Smith-Hughes Act?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you use selective devices or hold to entrance requirements for night school classes?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you give a regular Farm Mechanics course in evening classes for the public?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you ever held classes for alumni members only?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Has your alumni chapter ever requested evening classes in  
Agriculture?   
Farm Mechanics?   

Do any of your alumni members belong to any farmer's organizations such as the Grange, Farm Bureau etc.?   

Have any of these organizations recently requested evening classes in agriculture or farm mechanics?  

Does your day school offer a regular course in farm mechanics?  

Check the items of instruction given in your evening classes:  

Farm Woodworking   ( ) Painting & Finishing ( )  
Carpentry   ( ) Foundry ( )  
Acetylene Welding   ( ) Pumps & Irrigation ( )  
Electric Welding   ( ) Harness & Leather Work ( )  
Farm Sheet Metal   ( ) Tractors & Gas Engine Repair ( )  
Electricity   ( )  
Forging   ( ) Survey & Land Leveling ( )  
Machinery, care and repair ( )  

Please check the enterprises you have in your community for which you give instruction, either in day or night school:--  

Sheep Production   ( ) Grain Production ( )  
Hog Production   ( ) Dairying ( )  
Beef Production   ( ) Truck Gardening ( )  
Poultry-Egg Production ( ) Horticulture ( )  
Bee Culture   ( ) General Farm Purposes ( )  
Cotton Production ( ) Household ( )  

In addition to the above state briefly any items or suggestions you have for an alumni program in farm mechanics.  

Please check here (x) if you wish a summary of this study.
TABLE III

Showing Schools Reporting, Organization Data
And Percentage of Alumni Now Farming

<table>
<thead>
<tr>
<th>Location of Schools Reporting</th>
<th>Yr. Local Chapter Organized</th>
<th>No. Members at Present Time</th>
<th>Avg. Attendance at Meetings</th>
<th>Percentage of Alumni Now Farming</th>
</tr>
</thead>
<tbody>
<tr>
<td>California:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delano</td>
<td>1936</td>
<td>10</td>
<td>8</td>
<td>30</td>
</tr>
<tr>
<td>El Centro</td>
<td>1937</td>
<td>14</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Elk Grove</td>
<td>1936</td>
<td>12</td>
<td>--</td>
<td>80</td>
</tr>
<tr>
<td>Fresno - Central Union</td>
<td>1936</td>
<td>15</td>
<td>12</td>
<td>87</td>
</tr>
<tr>
<td>Live Oak</td>
<td>1936</td>
<td>12</td>
<td>8</td>
<td>50</td>
</tr>
<tr>
<td>Modesto</td>
<td>1933</td>
<td>50</td>
<td>40</td>
<td>85</td>
</tr>
<tr>
<td>Ontario</td>
<td>1935</td>
<td>20</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>Patterson</td>
<td>1936</td>
<td>12</td>
<td>10</td>
<td>85</td>
</tr>
<tr>
<td>Petaluma</td>
<td>1934</td>
<td>19</td>
<td>15</td>
<td>95</td>
</tr>
<tr>
<td>Porterville</td>
<td>1936</td>
<td>12</td>
<td>10</td>
<td>60</td>
</tr>
<tr>
<td>San Bernardino</td>
<td>1937</td>
<td>16</td>
<td>12</td>
<td>60</td>
</tr>
<tr>
<td>Turlock</td>
<td>1935</td>
<td>11</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Colorado:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ft. Morgan</td>
<td>1934</td>
<td>--</td>
<td>10</td>
<td>75</td>
</tr>
<tr>
<td>Georgia:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bowman</td>
<td>1935</td>
<td>25</td>
<td>20</td>
<td>75</td>
</tr>
<tr>
<td>Gore</td>
<td>1932</td>
<td>20</td>
<td>18</td>
<td>85</td>
</tr>
<tr>
<td>Sylvester (Institute)</td>
<td>1934</td>
<td>50</td>
<td>30</td>
<td>100</td>
</tr>
<tr>
<td>Iowa:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muscatine</td>
<td>1935</td>
<td>15</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>Kansas:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lawrence</td>
<td>1934</td>
<td>30</td>
<td>30</td>
<td>50</td>
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</table>
### TABLE III (cont.)

<table>
<thead>
<tr>
<th>LOCATION OF SCHOOLS REPORTING</th>
<th>Yr. Local Chapter Organized</th>
<th>No. Members at Present Time</th>
<th>AVG. Attendance at Meetings</th>
<th>Percentage of Alumni Now Farming</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOUISIANA:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ida</td>
<td>1936</td>
<td>25</td>
<td>15</td>
<td>75</td>
</tr>
<tr>
<td>Independence</td>
<td>1936</td>
<td>30</td>
<td>27</td>
<td>75</td>
</tr>
<tr>
<td>Youngsville</td>
<td>1936</td>
<td>10</td>
<td>7</td>
<td>80</td>
</tr>
<tr>
<td>MISSOURI:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinton</td>
<td>1935</td>
<td>14</td>
<td>10</td>
<td>70</td>
</tr>
<tr>
<td>Marshall</td>
<td>1936</td>
<td>24</td>
<td>23</td>
<td>40</td>
</tr>
<tr>
<td>NEW YORK:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endicott</td>
<td>1935</td>
<td>88</td>
<td>55</td>
<td>75</td>
</tr>
<tr>
<td>OREGON:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enterprise</td>
<td>1935</td>
<td>30</td>
<td>20</td>
<td>95</td>
</tr>
<tr>
<td>Silverton</td>
<td>1935</td>
<td>20</td>
<td>12</td>
<td>70</td>
</tr>
<tr>
<td>TENNESSEE:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nashville</td>
<td>1933</td>
<td>42</td>
<td>22</td>
<td>80</td>
</tr>
<tr>
<td>Trenton</td>
<td>1935</td>
<td>20</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Westmoreland</td>
<td>1935</td>
<td>12</td>
<td>8</td>
<td>75</td>
</tr>
<tr>
<td>TEXAS:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arlington (College)</td>
<td>1935</td>
<td>50</td>
<td>30</td>
<td>--</td>
</tr>
<tr>
<td>WISCONSIN:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beaver Dam</td>
<td>1935</td>
<td>35</td>
<td>25</td>
<td>75</td>
</tr>
<tr>
<td>Oshkosh</td>
<td>1934</td>
<td>34</td>
<td>24</td>
<td>95</td>
</tr>
</tbody>
</table>
Table III shows that the alumni program is still in its infancy, but is growing very rapidly. The majority of the chapters reporting have been organized since 1934. Of the 777 members in the thirty-two chapters reporting, there is an average attendance of 526 or about 67 percent, showing the eagerness of young farmers to gain more knowledge in the technical lines of farming.

The survey reveals an average of sixty-one percent of the graduate members of the Future Farmers of America farming at the present time. This vast number proves the need of an organization to assist in progressive, practical training in agriculture. As the school is the center of the community in most rural districts, both socially and educationally, the responsibility naturally falls on the agriculture department for such an organization.
### TABLE IV

Responses Concerning Policies and Programs of Alumni Chapters

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>YES</th>
<th>NO</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you have regular alumni meetings?</td>
<td>26</td>
<td>6</td>
<td>32</td>
</tr>
<tr>
<td>2. Do you have a social program?</td>
<td>26</td>
<td>6</td>
<td>32</td>
</tr>
<tr>
<td>3. Do you have an instructional program in agriculture?</td>
<td>29</td>
<td>3</td>
<td>32</td>
</tr>
<tr>
<td>4. Do you have an instructional program in farm mechanics?</td>
<td>5</td>
<td>27</td>
<td>32</td>
</tr>
<tr>
<td>5. Are your evening programs organized under the Smith-Hughes Act?</td>
<td>19</td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td>6. Do you use selective devices or hold to entrance requirements for evening school classes?</td>
<td>11</td>
<td>19</td>
<td>30</td>
</tr>
<tr>
<td>7. Do you give a regular farm mechanics course in evening classes for the general public?</td>
<td>2</td>
<td>28</td>
<td>30</td>
</tr>
<tr>
<td>8. Have you ever held classes for alumni members only?</td>
<td>13</td>
<td>18</td>
<td>31</td>
</tr>
<tr>
<td>9. Has your alumni chapter ever requested evening classes in Agriculture? Farm Mechanics?</td>
<td>19</td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td>10. Do any of your alumni members belong to farmer's organizations such as the Grange, Farm Bureau etc.?</td>
<td>20</td>
<td>12</td>
<td>32</td>
</tr>
<tr>
<td>11. Have any of these organizations recently requested evening classes in agriculture or farm mechanics?</td>
<td>3</td>
<td>29</td>
<td>32</td>
</tr>
<tr>
<td>12. Does your day school offer a regular course in farm mechanics?</td>
<td>19</td>
<td>13</td>
<td>32</td>
</tr>
</tbody>
</table>
Table IV shows that the majority of alumni chapters now organized have programs which include social and instructional work in agriculture. Twenty-six of the thirty-two chapters reporting have social programs and twenty-nine give instruction in agriculture while only five chapters offer instruction in farm mechanics. The comparatively small number offering farm mechanics is probably due to the fact that farm mechanics teachers, shops, and equipment are not available for an evening school course. Question seven shows that only two of the thirty chapters reporting offer a regular farm mechanics course to the general public as a part of the evening school program, while question twelve shows approximately forty-one per cent of the chapters reporting do not offer farm mechanics in the day school. Seven chapters and three farmer's organizations have requested evening classes in farm mechanics, showing the growing need of such a course.
TABLE V

Items of Instruction Given in Evening Classes
9 Schools Reporting

<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>NO. CHECKED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Woodworking</td>
<td>8</td>
</tr>
<tr>
<td>Carpentry</td>
<td>5</td>
</tr>
<tr>
<td>Acetylene Welding</td>
<td>2</td>
</tr>
<tr>
<td>Electric Welding</td>
<td>3</td>
</tr>
<tr>
<td>Farm Sheet Metal</td>
<td>4</td>
</tr>
<tr>
<td>Electricity</td>
<td>1</td>
</tr>
<tr>
<td>Forging</td>
<td>6</td>
</tr>
<tr>
<td>Machinery, care and repair</td>
<td>5</td>
</tr>
<tr>
<td>Painting and Finishing</td>
<td>4</td>
</tr>
<tr>
<td>Foundry</td>
<td>1</td>
</tr>
<tr>
<td>Pumps and Irrigation</td>
<td>2</td>
</tr>
<tr>
<td>Harness and Leather Work</td>
<td>6</td>
</tr>
<tr>
<td>Tractors and Gas Engine Repair</td>
<td>4</td>
</tr>
<tr>
<td>Survey and Land Leveling</td>
<td>6</td>
</tr>
</tbody>
</table>

Table V shows only nine schools still teaching farm mechanics from the industrial art method. Of these, woodwork is the most outstanding. Forging, harness work, surveying and leveling are next in importance according to five of the eight schools reporting. This table shows
the gradual change of method from the industrial art to the farm enterprise method.

TABLE VI

Enterprises in the Community for which Agriculture Instruction is Given in Day or Evening School

28 schools reporting

<table>
<thead>
<tr>
<th>FARM ENTERPRISE</th>
<th>NO. CHECKED</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Farm Equipment</td>
<td>28</td>
</tr>
<tr>
<td>Household</td>
<td>20</td>
</tr>
<tr>
<td>Hog Production</td>
<td>28</td>
</tr>
<tr>
<td>Beef Production</td>
<td>16</td>
</tr>
<tr>
<td>Sheep Production</td>
<td>19</td>
</tr>
<tr>
<td>Poultry-Egg Production</td>
<td>27</td>
</tr>
<tr>
<td>Cotton Production</td>
<td>10</td>
</tr>
<tr>
<td>Grain Production</td>
<td>25</td>
</tr>
<tr>
<td>Bee Culture</td>
<td>9</td>
</tr>
<tr>
<td>Horticulture</td>
<td>22</td>
</tr>
<tr>
<td>Truck Gardening</td>
<td>13</td>
</tr>
<tr>
<td>Dairying</td>
<td>25</td>
</tr>
</tbody>
</table>

The tabulation in Table VI, classifying farm enterprises for which instruction is given in day or evening school in the order of their importance, shows that instruction in General Farm Equipment, Hog Production,
and Poultry-Egg Production is offered in practically every community. The next ranking enterprises are Dairying, Grain Production, Horticulture, Sheep Production, down to Truck Gardening for which only thirteen of the twenty-eight schools reporting offer training.
SECTION IV

ORGANIZING AN EVENING CLASS IN FARM MECHANICS
FOR ALUMNI MEMBERS OF THE FUTURE FARMERS OF AMERICA

A. Preliminary Preparations of the Instructor

An instructor who undertakes the organization of evening classes must realize that he has great responsibility in preparing for this service. The problem of organizing a program in farm mechanics to fit the needs of the alumni of the Future Farmers of America in the community in which it is to be organized is one that can be given no little thought and preparation. The instructor should consider the following questions:

1) What are the occupations or agriculture pursuits in the community for which evening instruction in farm mechanics can be given?

2) Which of these is the most important and shall be chosen for the first course in evening school work?

3) What conferences have been held in the alumni meetings to determine the farm needs?

4) What steps can be taken to secure adequate funds
for the work?

5) Will it be necessary to call in specialists from the outside? If so, how can they be secured?

6) Where and when can classes be held most advantageously?

7) What utilization of equipment is possible?

8) What arrangements can be made with other instructors in the agriculture department to cooperate?

These are questions which cannot be answered in only a week's notice before evening school opens; they need careful consideration. Administration and requirements cannot be rigid; they must be flexible in application. In surveying the outstanding alumni chapters of the Future Farmers of America in the various states, the author attempted to obtain answers to these questions to assist in the formation of the suggested programs to follow.

Any school or class must be organized to give instruction to the individual. The only way that a class can be organized successfully is to ascertain the actual needs of the individuals who are to receive instruction. Especially this is true when an attempt is made to give instruction to boys nearing and in the adult age, such as the alumni of the Future Farmers of America. Therefore, in considering the students who will make up the
class in farm mechanics, the instructor will need to know their aims and why they should come to an evening school class. The instructor should also know the time they have available for such a course and the ways and means of getting the group together for instruction.

B. Aims and Objectives

As a means of showing the purpose of farm mechanics as that part of the course in vocational agriculture which deals with the mechanical aspects of the agriculture work, the author quotes from a University of California Bulletin on "Farm Mechanics for California Schools":

Farm Mechanics is that phase of instruction in vocational agriculture which deals with the operation and maintenance of farm implements and machinery, together with such instruction and repair of appliances and buildings as can be done economically by the farmer. It is not the function of a farm mechanics course to train craftsmen, such as plumbers, carpenters, auto mechanics, but rather to train boys in various kinds of mechanical work which they will need to use on the farm.

The aims and objectives of the course should be well planned. No instructor should attempt to teach a course in farm mechanics without first having a set of aims and

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4 University of California, Division of Vocational Education, Bulletin No. 11 (1929), "Farm Mechanics for California Schools."
The principal objectives of vocational agriculture should first be considered for without agriculture farm mechanics would not exist.

The Federal Board for Vocational Education\(^5\) lists the following objectives which will effect the farm mechanics program as they apply to the various farm shop activities:

1. To produce agricultural products efficiently.
2. To market agricultural products economically.
3. To select and purchase suitable farm equipment and supplies.
4. To cooperate intelligently in economic activities.
5. To manage farm business effectively.
6. To establish and maintain a satisfactory farm home.
7. To perform appropriate economical farm mechanics activities.
8. To participate in worthy rural civic-social activities.
9. To use scientific knowledge and proceed in a farming occupation.
10. To exercise constructive leadership and to recognize and follow worthy leadership.
11. To grow vocationally.

12. To become successfully established in farming.

The seventh objective, "To perform appropriate economical farm mechanics activities", applies directly to the study of farm mechanics, and the Federal Board\(^6\) lists the following objectives under this heading:

A. Ability to construct and repair farm appliances.

B. Ability to order repair parts for farm appliances and machines.

C. Ability to interpret blue prints and construction drawings.

D. Ability to operate farm machinery and motors.

E. Ability to plan farm buildings and select and adopt ready-made plans.

F. Ability to care for farm machinery and motors.

G. Ability to assemble farm machinery and motors.

H. Ability to overhaul and repair farm machinery and motors.

I. Ability to build and remodel small farm structures.

J. Ability to plan and construct drainage systems.

K. Ability to plan and construct irrigation systems.

L. Ability to plan and construct terracing systems.

M. Ability to care for and repair farm tools.

\(^6\) Ibid. Page 3.
N. Ability to plan, install, use and maintain an adequate farm shop.

O. Ability to plan and install farm home water sewage systems.

It is not probable that a farm mechanics instructor would be called upon to teach all of these abilities in any one community, but if he has had a variety of experience and training, he may build a program around any one of these abilities if the occasion arises.

Schmidt\(^7\) outlines the specific objectives of farm mechanics as follows:

1. To develop the ability of farm boys to think so that they may be able to solve intelligently the problems which they will encounter in conducting their farm mechanical activities, which ability may be termed mechanical resourcefulness.

2. To develop habits and skills which farm boys will need in order to perform efficiently these farm mechanical activities which they may be called upon to perform.

3. To have farm boys acquire the knowledge, and to develop their ability to use that knowledge, (facts, theory, and principles) which will be useful to them in conducting their farm mechanical activities.

4. To develop in farm boys the right attitude toward all phases of farm mechanics work.

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5. To develop the appreciations of farm boys in regard to all farm mechanical activities which a trained farm boy should possess.

6. To stimulate in farm boys the proper ideals in all their farm mechanical activities.

Since boys coming back under the alumni program will vary in experience from those who have had only the first year's work in farm mechanics to those who have completed all four years of high school work, the aims of any class should be very general to fit all types of student ability. Therefore, the organization of a farm mechanics program for alumni chapter members of the Future Farmers of America might well be based on the objectives as outlined by Schmidt which were drawn up with a high school course in mind.

The author would sum up the main objectives of such a program as follows:-

1) To improve agriculture in the community by training each student to manage the equipment in the major farm enterprises of that community in such a way as to lower or keep at a minimum the costs of production and to produce a quality product.

2) To give practical training in the use and care of tools and the skills necessary for the average farm job.
3) To create confidence in students that they can do the average job and stimulate a desire to do these jobs.

4) To encourage each student to have a farm shop at home and keep this shop in a systematic order.

C. The Problem of Financing the Evening Class

One of the important items to be considered is the problem of finance. There are two means of support for the evening school:

1) Local support, under which the program is supported wholly by local funds.

2) Federal Aid, under which the program is supported in part or entirely by the Federal government.

Under local support, the local school board would finance the night school fully. In some instances a fee is assessed each student and the local board is partly reimbursed for the expense, or the local alumni chapter may wish to assess dues or raise money through chapter functions in order to make the night school self-supporting.

The majority of schools would wish to finance their evening classes through Federal Aid. There are certain statutory provisions in accordance with which schools and classes in trade and vocational education must be organized to receive Federal Aid. The standards and pro-
visions should be obtained and studied very carefully so that provisions set up by the Federal government will be met.

In Bulletin No. 17 the Federal Board for Vocational Education outlines the following provisions which should be met in organizing an evening school:

A. Applying to all schools and classes.

1. Public supervision or control. "Such education shall be given in schools or classes under public supervision or control." (Sec. 11, lines 4 and 5).

2. Instruction must be of less than college grade. "That such education shall be of less than college grade." (Sec. 11, lines 7 and 8).

3. For pupils over 14 years of age. Such instruction "shall be designed to meet the needs of persons over 14 years of age who are preparing for a trade or industrial pursuit or who have entered upon the work of a trade or industrial pursuit." (Sec. 11, lines 8 to 11).

4. Federal funds must be matched by State or local funds or both. "The money expended for the salaries of teachers of trade and industrial subjects shall be conditioned that for each dollar of Federal money expended for such salaries the State or local community, or both, shall expend an equal amount for such salaries." (Sec. 9, lines 12 to 18).

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5. Federal funds for salaries only. "That for the purpose of co-operating with the States in paying the salaries of teachers of trade *** and industrial subjects there is hereby appropriated ***." (Sec. 5, lines 1 to 3).

B. Applying to all schools and classes giving industrial education, but needing interpretation for each kind, that is, all-day, evening and part-time.

1. Kinds of schools. "The State board shall prepare plans showing *** the kinds of schools ***." (Sec. 8, lines 2 to 4).

2. Definite vocational objective. " *** the controlling purpose of such education shall be to fit for useful employment." (Sec. 11, lines 6 and 7).

3. Necessary plant and equipment. "The State board shall prepare plans showing *** the kinds of *** equipment." (Sec. 8, lines 2 to 4). "The State or local community or both shall provide the necessary plant and equipment determined upon by the State board, with the approval of the Federal board for Vocational Education, as the minimum requirement in such State for education for any given trade or industrial pursuit ***." (Sec. 11, lines 11 to 15).

4. Minimum for maintenance. "That the total amount expended for the maintenance of such education in any school or class receiving the benefit of such appropriation shall be not less annually than the amount fixed by the State board, with the approval of the Federal board, as the minimum for such schools or classes in the State ***." (Sec. 11, lines 15 to 20).
5. Outline of course of study. "The State board shall prepare plans showing *** courses of study ***." (Sec. 8, lines 2 to 5).

6. Methods of instruction. "The State board shall prepare plans showing *** methods of instruction ***." (Sec. 8, lines 2 to 5).

7. Qualification of teachers. "That the teachers of any trade or industrial subject in any State shall have at least the minimum qualifications for teachers of such subject determined upon for such State by the State board, with the approval of the Federal board for Vocational Education." (Sec. 11, lines 36 to 40). "*** that the State board, with the approval of the Federal board shall establish minimum requirements for such (adequate vocational) experience or contact *** teachers of trade (and) industrial *** subjects." (Sec. 12, lines 11 to 15). "The State board shall prepare plans *** qualifications of teachers ***." (Sec. 8, lines 2 to 5).

C. Applying to evening schools only.

1. Minimum age 16 years. "*** evening industrial schools shall fix the age of 16 years as a minimum entrance requirement." (Sec. 11, lines 34 and 35).

2. Trade extension only. "*** evening industrial schools *** shall confine instruction to that which is supplemental to the daily employment." (Sec. 11, lines 34 to 36).
The evening industrial class is the most feasible set-up under which this program could be organized in order to secure Federal Aid. The interpretation of this type of class is given in Federal Bulletin No. 17, "Trade and Industrial Education," as:

An evening school or class established under the National Act is a public school or class established and maintained in the community for the purpose of giving instruction of less than college grade in a particular trade supplemental to the daily employment to persons over sixteen years of age who have entered upon employment in that trade or industrial pursuit. Full compliance with an adopted and approved state program is also required.

Legal provisions applying to all types of schools are summed up in the Bulletin as follows:

In the case of each school or class established under the National Act -

1. It must be established and maintained under public supervision and control.

2. It must provide instruction of less than college grade.

3. It must be conducted in accordance with a plan adopted by the State board for vocational education and approved by the Federal board which plan must show the necessary plant and equipment, the minimum annual maintenance, the courses of study, the approved methods of instruction, and the qualifications of teachers, including adequate vocational experience or contact.

It is the duty of the local school board and principal to see that the local evening school program complies with both the Federal and State plans so they may be reimbursed with money provided for such courses.
SECTION V

SUGGESTED PROGRAMS IN FARM MECHANICS FOR ALUMNI MEMBERS OF THE FUTURE FARMERS OF AMERICA

It is the aim of the author to suggest programs which may be used by a prospective instructor of adult work in farm mechanics for alumni chapters of the Future Farmers of America, whose members desire further training in making and repairing projects for practical farm enterprises. The programs were prepared with the thought in mind that the instructor will need to offer instruction to students from high school age to maturity, from beginners in the vocation of farming to men who have had many years of experience in farm enterprises.

The theory of most instructors is to center the teaching of farm mechanics around the learning of skills which the student might or might not use in his farm enterprise. There has never been any complete way of a student or instructor checking the value of this type of instruction in farm mechanics. Some inaccurate checks have been made showing the student must have need for the skills as they are taught in order to retain the operation for use in practical farm enterprises. The outline of
programs which follow tends to teach skills as a means of accomplishing the mechanical success of a chosen farm enterprise. Davis\textsuperscript{10}, in his book "Farm Enterprise Mechanics," convinced the author of the practicability of this type of program. He lists ten points as claims for the success of this type of program:

1. It centers the attention and interest of the student around the projects.
2. It "educates while doing".
3. It applies the principle of earning and learning to shop work.
4. It equips for better project results.
5. It begins life accumulations.
6. It has a holding influence.
7. It tends toward placement in farming or in the particular enterprise.
8. It causes investment in materials for permanent equipment.
9. The increase in equipment and success with projects grow together.
10. It causes better analysis of project needs.

In his book, Davis quotes Dr. C. H. Lane, formerly chief in agricultural education, as saying,

Farm mechanics should cover the repair and construction on the farm. It should give the necessary instruction and training that will enable the student to successfully perform the mechanical work that arises on the farm, but not, however to train professional carpenters, painters, tinnlers, and blacksmiths.

A. Analysis to Show Jobs and Operations that can be Accomplished with Equipment Available

An analysis of the jobs that can be done in the shop with the equipment at hand is one of the first things to be considered. A list of things which can be done in the shop should be given the prospective students of the community. An example of such an analysis sent out by one farm mechanics instructor is shown below:

**List of Things that can be done in the Farm Mechanics Class**

A. Sharpening Tools

1. Axes
2. Chisels (wood and cold)
3. Sythes
4. Bits (all kinds)
5. Saws
6. Other tools

B. Fitting Handles

1. Hammers
2. Shovels
3. Hoes
4. Axes
5. Other tools

C. Small Farm Appliances

1. Double trees
2. Saw horses
3. Ladders
4. Hog crates
5. Chicken and hog feeders

D. Large Appliances

1. Truck bodies
2. Farm gate
3. Work benches

E. Household Appliances

1. Ironing board
2. Rolling pins
3. Broom and mop holders
4. Chest of drawers
5. Kitchen tables
6. Cedar and hardwood chests
7. Small furniture

F. Building Construction

1. Small poultry house
2. Small hog house
3. Rabbit hutches

G. Blacksmithing

1. Drill holes in metal
2. Cut threads on bolts
3. Make gate hooks
4. Punches
5. Single tree hooks
6. Clevices
7. Cold chisels
8. Acetylene welding
9. Sharpen plow shears
10. Make bolts
11. Babbit bearing
12. Other simple forge work

H. Soldering and Sheet Metals

1. Buckets
2. Milk cans
3. Radiators
4. Make chick feeders
5. Watering trough
6. Bread cans
I. Harness Repairing
   1. Replacing rivets
   2. Replace iron parts
   3. Clean and oil

J. Plumbing
   1. Replace pump leather
   2. Install pump and pipe
   3. Cut thread and fit pipe

K. Farm Machinery
   1. Replace Pitman rod on mower
   2. Replace broken tongues
   3. Replace worn and broken parts
   4. Install sickle sections

L. Concrete Construction
   1. Build forms
   2. Build foundations
   3. Build troughs and posts
   4. Other small concrete work

M. Rope Work
   1. Make splices
   2. Tie knots

N. Belt Work
   1. Lace belts with rawhide
   2. Splice and glue belts

O. Painting
   1. Painting small objects

P. Refinishing
   1. Refinishing and repairing household furniture
B. Students' Mechanical Analysis of the Enterprise

It is a good policy for the instructor to encourage the students to make a mechanical analysis of their respective enterprises to help them realize the mechanical equipment required in their particular enterprise. An example of this type of analysis made by a student in a farm mechanics class of a California school is shown on the following page:
### Mechanical Analysis of Swine Production

#### Housing
- Shed Type
  - Lean To
- Tools Used
  - Remodel Head
  - Repair Handle
  - Sharpen
  - Clean
  - Polish

#### Feeding
- Self Feeder
  - Large
  - Small
  - V-Type
  - Automatic
- Tools Used
  - Hammer
  - Level
  - Square
  - Saw

#### Breeding
- Breeding Pen
- Tools Used
  - Hammer
  - Level
  - Square
  - Saw
  - Shovel

#### Marketing
- Patterning Pen
- Landing Chute
- Tools Used
  - Hammer
  - Level
  - Square
  - Saw
  - Pinch Bar
C. Suggested Programs for Leading Farm Enterprises

Realizing the impossibility of formulating a set program for use in any community in the United States, programs in the various enterprises of farming will merely be outlined, from which the prospective instructor of farm mechanics may prepare a course of study to fit the community in which it is to be given. Farm jobs are too numerous to attempt to give detailed instruction for each job, therefore a list of references will be included where plans may be found.

1. General Farm Equipment and Repair

The survey made shows that more farm mechanics jobs are required under "General Farm Equipment" than in any other enterprise. Among the general farm jobs are those which often concern several enterprises of the farm and overlap many jobs that may come under a specific enterprise. Students entering the class should classify all jobs possible under a special enterprise in order to keep them more familiar with their given enterprise. They will also find it much easier to figure financial returns more accurately if each job is charged to its proper enterprise.

Program Outline for General Farm Equipment:

1. Double-swing gate
2. Hay rack
3. Wagon box
4. Manure carrier track
5. Two-wheeled trailer
6. Wheel barrow
7. Home-made harrow
8. Double trees
9. Saw horse
10. Ladder
11. Farm tool box
12. Work bench
13. Home-made vise
14. Tool cabinet
15. Nail and staple box
16. Making chisels, hammers etc.

Repair of Equipment:

1. Door lock
2. Bracing end posts
3. A wire tighter
4. Replace worn and broken parts of machinery
5. Sharpening tools
6. Fitting handles
7. Soldering buckets, milk cans etc.
8. Harness repairing
9. Repairing old furniture
10. Repairing plumbing
11. Making bolts, hammers etc.

Concrete Work:

1. Concrete mixtures
2. Forms for foundations
3. Home-made mixer
4. Removing forms
5. Building concrete walk and steps
6. Making drinking trough
7. Making feeding floors

Electrical Work:

1. Make splices
2. Repairing electric motor
3. Replace electrical appliances

Household Appliances:

1. Bread board
2. Kitchen stool
3. Wood box
2. **Live Stock Production Enterprise**

Results of the survey show that live stock production, which includes principally swine, beef, and sheep production, is the most outstanding production enterprise. The young farmer who is just beginning a project should not be encouraged to build more equipment than the profits from his project will permit. The preferred practice is to budget the estimated needs for equipment in comparison with the estimated profit. There is nothing more discouraging for a young farmer to find at the end of the year that all his profits have been expended for equipment. As live stock equipment requires more capital outlay, special precaution should be taken by the instructor of farm mechanics in this enterprise.

Program Outline for Live Stock Production:

I. **Swine Production**

   A. Housing
      1. Shed-type
      2. Lean-to shed
3. Portable hog shed
4. Litter Pullman
5. Movable individual hog shed
6. Hog trap
7. Swine fence
8. Pig nest in pen

B. Feeding
1. Self feeder
2. Roughage feed rack
3. Trough
4. Barrel feeder
5. Hayrack
6. Cafeteria feeder
7. Siphon waterer
8. Swinging feed door
9. Hog feeding floor
10. U-shaped trough
11. Vertical feed chute

C. Breeding
1. Swine breeding rack
2. Pig nest in pen
3. Boar or sow transporting crate

D. Marketing
1. Loading chute
2. Barrel trap
3. Shipping crate
4. Sling for hog operations
5. Fattening pen
6. Smoke house
7. Butchering tools
8. Butchering rack
9. Meat hooks
10. Sticking knife
11. Skinning knife
12. Scalding vats
13. Stirring stick

II. Beef Production

A. Housing
1. Swinging gate
2. Cattle guard
3. Open shed barn
4. Shelters
5. Fence post driver
6. Branding iron
7. Wire stretchers

B. Feeding

1. Covered salt box
2. Feed bunk
3. Movable rack
4. Roughage feed rack
5. Portable feed bunk
6. Watering tank
7. Trough
8. Hay rack
9. Hay stack cover

C. Breeding

1. Calf creep
2. Controlling bull
3. Breaking calf
4. Ringing bull

D. Marketing

1. Shipping crate
2. Rope hitches, splices, knots
3. Truck rack
4. Loading chute

III. Sheep Production

A. Housing

1. Sheep barn
2. Stanchions
3. Shelters
4. Lean-to shed

B. Feeding

1. Self feeder
2. Feeding trough
3. Reversible trough
4. Movable trough
5. Milk trough
6. Hay and grain rack
7. Barrel waterer
C. Breeding
   1. Lambing pen and creep

D. Marketing
   1. Crate for shipping
   2. Loading chute
   3. Chute on wheels
   4. Truck bed
   5. Grub box
   6. Pack saddle

3. Poultry and Egg Production Enterprise

Poultry and Egg Production are popular enterprises in every community in the United States. Nearly all farmers have poultry for home production and market production of poultry is a fast growing enterprise.

The average alumni student is not interested in drawing plans of a poultry project. His interest is to complete the job as soon as possible and get it into use. For this reason the instructor should have as many plans available as possible when the course begins. A pamphlet, "Concrete on the Farm", published by The Portland Cement Company has many valuable suggestions and can be obtained from any local dealer of cement.

Program Outline for Poultry and Egg Production:-

A. Housing
   1. Brooder houses
   2. Roosts
   3. Chicken brooder, coop and run
   4. Concrete floors
   5. Laying house
   6. Trap nests
B. Feeding

1. Feed hopper
2. Feed trough
3. Watering troughs
4. Indoor feed hopper
5. Automatic waterer
6. Rack for grain feed
7. Water fountain
8. Bins - tanks and combination

C. Breeding

1. Nests and dropping boards
2. Trap nests
3. Open nests
4. Laying house
   a. Shed
   b. Combination
   c. Monitor
   d. A-shaped
   e. Gable

D. Marketing

1. Caponizing board or table
2. Carrying crate
3. Fattening crate
4. Shipping crate
5. Coops
   a. Lath
   b. Collapsible
   c. Wire
6. Egg gatherer
7. Egg crates
8. Catching hook
9. Sticking knife
10. Return egg case

4. Dairy Production Enterprise

The enterprise of dairying requires many jobs which overlap with other enterprises. The instructor should
keep in mind that dairying is an enterprise which requires considerable outlay of equipment. It should be pointed out to the student just beginning in the enterprise of dairying that many projects listed are not necessary for the beginner, but may be carried on as the enterprise grows and the project becomes profitable. Students having a few cows for home use with some excess products to sell should not attempt to have such equipment as one who has a herd of dairy cattle for market production alone. A good analysis of the agriculture project made by the student with the assistance of the agriculture instructor will show to what extent expenditures may be made for mechanical equipment.

Program Outline for Dairy Production:-

A. Housing

1. Cattle stanchions
2. Barn floors
3. Milk house
4. Manure cart
5. Fly trap
6. Medicine cabinet for barn
7. Disinfectant tank
8. Rope halter

B. Feeding

1. Feed rack on skids
2. Feed cart
3. Feed box
4. Watering tank
5. Metal water trough
6. Silage lifter
7. Silage truck
8. Underground silo
C. Breeding
1. Breeding rack
2. Breeding chute
3. Bull pen
4. Bull ring

D. Marketing
1. Soldering milk cans
2. Lifts for milk cans
3. Milk cooler
4. Test-bottle holder
5. Sterilizing tank
6. Cream paddle

5. Field-Crops Enterprise

Field-Crops require large and costly equipment. Very little equipment can be made by the student, but he can save expense by learning the proper care and repair of such equipment. Tools and machinery are often discarded for new when a very small part of the cost of new equipment would put the old equipment in good running condition. The farm mechanics teacher has a great responsibility in training the student to properly care for and repair such equipment.

Program Outline for Field-Crops Enterprise:

A. Preparation of soil and planting
1. Rack for drying seed
2. Seeding machinery devices
3. Seed boxes for wagon
4. Seed-corn cleaner
5. Land leveler
6. Repairing plow, corn planter
7. Overhauling tractor
B. Cultivation

1. Repair of cultivator
2. Potato grader
3. Harrows, discs, repair of

C. Harvesting and Marketing

1. Corn cutter
2. Wagon boxes
3. Hay rack
4. One-man hay loader
5. Hay fork
6. Clover seed harvester, repair of
7. Ear-corn crate
8. Peanut puller
9. Silage hauling rack
10. Ventilated corn crib
11. Repair of threshing equipment

6. Horticulture Enterprise

Horticulture and small fruit production have many small, inexpensive projects which may be made in the school shop from scrap material found around the home. Some of the projects can be made in a short time, saving hours of labor, and the student carrying on a horticulture project should be instructed to take advantage of these many inexpensive labor-saving devices.

Program Outline for Horticulture Enterprise:

A. Preparation of the soil

1. Care and repair of
   a. Plow
   b. Disc
   c. Harrow
   d. Scraper and leveler
2. Blasting bar
3. Transit tri-pod
4. Running stakes
5. Irrigation pipe
6. Pump foundation

B. Cultivation
1. Bud cutter
2. Planting board
3. Pruning tool handles
4. Weather record sheet
5. Thermostat control
6. Smudge heaters
7. Tree props
8. Spraying equipment
9. Spray mixers
10. Fumigation devices
11. Bug and beetle traps
12. Orchard ladders
13. Tree calipers
14. Double-tree hook
15. Arbors
16. Trellis

C. Harvesting and Marketing
1. Ladders
2. Picking boxes and crates
3. Packing tables
4. Drying trays
5. Orchard trucks, repair of
6. Washing stand
7. Graders
8. Pressers
9. Fruit crates
10. Refrigerator crates
11. Scoop
12. Weighing balance

7. Truck Gardening Enterprise

Truck Gardening like Horticulture has many labor-saving devices which can be made in the school shop at little or no expense. Truck Gardening on a large scale
is not unlike Field-Crop Production as soil preparation for both may be made with the same equipment. As a large amount of hand labor is required in the enterprise of Truck Gardening, the instructor should encourage the installation of all labor-saving devices possible for the project.

Program Outline for Truck Gardening Enterprise:

A. Preparation of soil

1. Care and repair of
   a. Plow
   b. Disc
   c. Harrow
   d. Subsoiler
   e. Ditcher and ridger
   f. Roller

2. Blasting bar
3. Transit tri-pod
4. Running stakes
5. Irrigation pipe
6. Pump foundation
7. Row marker

B. Cultivation

1. Hot beds
2. Glass cutting for hot houses
3. Sterilizer
4. Tamper
5. Spotters
6. Green house bench
7. Cultivator-seeder
8. Transplanter
9. Plant spacer
10. Plant hill duster
11. Sprayer

C. Harvesting and Marketing

1. Spades
2. Treating boards and racks
3. Seed harvesting box
4. Storing bins and pits
5. Storing house
6. Grader racks
7. Shipping and storage crates
8. Curing trays
9. Washing racks
10. Truck rack
11. Display racks

D. References for Detailed Instruction of Jobs In Leading Farm Enterprises

It is essential that the instructor of an evening school class in farm mechanics have references available where detailed instruction may be found for various farm jobs. Many students enroll with no definite program in mind and find such references and plans valuable in improving their farm enterprise. The following list of reference books offer detailed instruction in the jobs of the various farm enterprises. These references also include names of colleges and universities where plans and blue-prints for farm mechanics jobs may be obtained:

References

Farm Enterprise Mechanics, Edited by K. C. Davis, J. B. Lippencott Co., Chicago, Ill.


Farm Mechanics, Crawshaw and Lehmann, Manual Arts Press, Peoria, Ill.

Farm Mechanics, Cook, Scranton and McColly, Interstate Publishing Co., Danville, Ill.
References Cont.

Farm Shop Work, Brace and Mayne, American Book Company, New York.

Farm Engineering, Robb and Behrendt, John Wiley & Sons, Inc., New York.

California Redwood Assn., Pamphlets and plans, 405 Montgomery Street, San Francisco.

Concrete on the Farm - Portland Cement Company, Local dealer in cement.

Oregon State Agriculture College, Corvallis, Oregon.

University of California, Davis, California.

California Polytechnical School, San Luis Obispo, California.

Colorado Agriculture College, Fort Collins, Colorado.

Cornell University, Ithica, New York.

St. Lawrence University, New York City, New York.
SECTION VI

SUMMARY AND CONCLUSIONS

A. Growing Need of Prepared Programs for Alumni Chapters

From the beginning of the organization of Future Farmer chapters after the passage of the Smith-Hughes Act in 1917, providing for Federal Aid in the instruction of vocational agriculture, there has been a felt need for the continuance of agriculture training after graduation from high school. The Smith-Hughes Act also provided for Federal Aid for Adult Education which would include former members of Future Farmer chapters.

Recognizing this growing need and considering the possibilities of Federal Aid in such education, the author has attempted to show through surveys of state departments, local alumni chapters, and research of leading authorities in agriculture training, the educational opportunities in this field, and to render aid in organizing and conducting an adult class in farm mechanics for members of alumni chapters of the Future Farmers of America.
B. Lack of Development of Evening School Programs in Farm Mechanics to the Present Time

The deficiency of well trained farm mechanics instructors, who are willing to give their time to the organization of evening programs for graduates of their school, is probably the chief reason for the under-development of such a program. Some of these teachers are also unable to obtain credentials to meet Federal requirements, and are unwilling to give their own time to such work.

The lack of emphasis attached to farm mechanics by agriculture teachers and leaders in communities, and the disinterest of industrial arts teachers has delayed the development of farm mechanics in many communities. The lack of interest on the part of the students themselves has been both financial and vocational. Young men graduating from high school have been unable to get work to finance a course of any kind, and many interested in farming have been financially unable to begin farming; therefore their interest has not been on the improvement of vocational agriculture.

C. The Development of Evening School Agricultural Programs

Realizing their lack of training in agricultural and mechanical skills, many young men now entering the
farming vocation have expressed a desire for further training in organized evening classes in these courses. Some of them have been out of contact with farming practices due to the economic reverses in farming in the last few years, and desire the use of school shop equipment to reacquaint themselves with farming operations. The improvement of agricultural practices through the National Recovery Program has led many back to school to learn new methods of farming and the proper use of equipment.

The higher trend of agriculture prices, the new trend of curriculum expansion by schools, and the increase in the number of young farmers have all had a tendency toward greater cooperative learning and new practices. With this wave of prosperity, the educationalists, the farmers, and business in general are advocating greater educational facilities in preparation for vocations.

The change in the methods of teaching farm mechanics from the use of the industrial arts program to the new practice of using the agriculture enterprise as a basis of instruction has created a new interest in farm mechanics, from both the instructor's and student's point of view. Teachers interested in an evening class in farm mechanics may have several channels to follow in organizing such a program. The farm mechanics class should be closely correlated with the agriculture class under any
form of organization. The class may be a part of the regular alumni organization program and share the time given for the social and the agriculture programs, and may or may not receive Federal Aid, according to the wishes of the local instructor and school board; or it may be organized in a regular evening school class under the Federal plan for Adult Education.

It is the wish of the author that this study will impress upon the farm mechanics instructor and the graduate Future Farmer the importance of the practice of continued agricultural mechanics training. It is the author's opinion that the willingness of any instructor to organize a program of this type, and the willingness of the young farmer to devote time for further improvement of the practices of farming will contribute largely to the agricultural and civic success of their community.


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